REPORT OF THE WORKING GROUP

ON

STORAGE & WAREHOUSING

FOR

THE EIGHTH FIVE YEAR PLAN

(1990 - 1995)

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GOVERNMENT OF INDIA
MINISTRY OF FOOD & CIVIL SUPPLIES
DEPARTMENT OF FOOD

REPORT
OF THE
WORKING GROUP
ON
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C H A P T E R - I

1. INTRODUCTION

1.1. The Planning Commission in their Order No. M-12043/3/87-Agri. dated 30th September, 1988 constituted the Working Group on Storage and Warehousing for the formulation of the Eighth Five Year Plan. A copy of the Order issued in this regard by the Planning Commission is at Annexure - I. List of Members who participated in deliberations is at Annexure - II.

1.2. The first meeting of the Working Group was held on 13th December, 1988. In this meeting the Working Group co-opted Additional Secretary (Food) and Additional Secretary and Financial Adviser in the Department of Food as Members of the Working Group. The Working Group, after preliminary discussion, in which the methods and procedures of work were established, constituted five Sub-Groups on the following subjects :-

(a) Assessment of additional storage requirement for Foodgrains, Fertilizers and other Agricultural Inputs;

(b) Assessment of additional storage requirement for General Warehousing;

(c) Provision of Cold Storage Facilities;

(d) Generation of Internal Resources; and

(e) Research and Development and Improved Techniques of Foodgrain Storage and Pest Control.

The Constitution and terms of reference of the Sub-Groups are given at Annexure - III.

1.3. All the Sub-Groups submitted their reports by 15th March, 1989. The Working Group considered the reports of the Sub-Groups in three meetings held on 1-3-1989, 17-3-1989 and 12-4-1989. The Report of the Working Group was adopted in its 5th meeting held on 10-5-1989.

1.4. The Working Group wishes to place on record its sincere thanks to its Members, who took keen interest in the deliberations of the Group, particularly the Chairman of the five Sub-Groups who produced their respective reports after in-depth consideration. It also wishes to place on record its appreciation for the services rendered by Storage Division in the Department of Food for providing necessary secretariat and other services.

(Contd....2)

CHAPTER - II

2. Assessment of Additional Storage Requirements for Foodgrains, Fertilizers and other Agricultural Inputs.

STORAGE POLICY AND PLAN

2.1. The All India Rural Credit Survey Committee had recommended in 1954 a three tier system of creation of storage capacity viz. at the national and State level; district level; and rural level. Accordingly the Central Warehousing Corporation (CWC) has been providing warehousing facilities at the centres of all India importance and the State Warehousing Corporations (SWCs) and the State Governments at centres of State and district level importance. Cooperatives are providing storage facilities at the primary and marketing socities level which are located at village/taluka levels. The Department of Rural Development is also providing assistance for construction of rural godowns under its scheme of National Grid of Rural Godowns. The Food Corporation of India (FCI) constructs godowns for storage of foodgrains procured and stored by it for distribution and buffer stocking.

2.2. FCI constructs storage capacity at certain nodal points. The selection of nodal points is made keeping in view the Corporation's needs and operational consideration. The responsibility for lifting the foodgrains stocks from the Corporation's godowns and its subsequent storage and distribution is that of State Governments. Assessment of the requirement of foodgrain storage has to be made keeping in view this broad policy.

The Storage Plan has the following objectives:-

i) To fulfill storage requirement of holding buffer and operational stocks, with particular reference to cereals;

ii) to meet the requirements of the public distribution system, including various programmes taken up by the Government which require distribution of foodgrains e.g.: National Rural Employment Programme, Rural Landless Employment Guarantee Programme, Nutrition etc.;

iii) to meet the requirement of general warehousing to cater to the needs of the manufacturers, traders and institutions;

(Contd....3)

iv) to meet the requirement of farmers at the village and market levels for storage of both inputs and outputs; and

v) to meet the requirement of farmers for storage of their own foodgrains, seeds, etc.

The role of the FCI, CWC and SWCs is to provide storage facilities for foodgrains and general warehousing which is supplemented by cooperatives and rural godowns. During the 8th Plan also these objectives would have to be persued while planning the overall requirement of storage.

TOTAL STORAGE CAPACITY AT THE BEGINNING OF THE 8th PLAN.

2.3. The estimated storage capacity expected to be available with different agencies as on 31-3-1990 was assessed. In making this assessment, the actual storage capacity available with different agencies as on 1-1-1989, the capacity likely to be completed during the period 1-1-1989 to 31-3-1990 and the capacity which was likely to be dehired during this period on account of certain godowns becoming uneconomic and surplus to the requirements, was taken note of. Based on this assessment it was considered that the total storage capacity with FCI, CWC and SWCs and State agencies as on 31-3-1990 would be about 38.79 million tonnes as per the break-up given below :-

(Million tonnes)

Agency	Owned	Hired	Total
F.C.I.	12.14	6.21	18.35
C.W.C.	4.91	1.83	6.74
S.W.Cs.	6.88	2.28	9.16
State Agencies	NA	NA	6.94
			41.19
Less storage capacity of CWC/SWC already included in hired capacity of FCI			2.40
Net capacity			38.79

In addition, cover and plinth (CAP) capacity of about 4.00 million tonnes was expected to be available with FCI as on 31-3-1990. Therefore, the total storage capacity with these agencies may be of the order of about 43.00 million tonnes.

(Contd....4)

STORAGE CAPACITY FOR FOODGRAINS AT THE BEGINNING OF THE 8th PLAN

2.4. The storage capacity expected to be available for foodgrains for holding the central pool stocks was estimated at 25.50 million tonnes as on 31-3-1990. This included a capacity of 18.34 million tonnes owned and hired taken together with FCI and 6.94 million tonnes with State Governments and their agencies. The State-wise break-up of this capacity is at Appendix-I.

ACHIEVEMENTS DURING THE 7th FIVE YEAR PLAN.

2.5. During the 7th Five Year Plan, the targets laid down for FCI, CWC and SWCs and the likely achievements of each agency are expected to be as follows :-

Agency	Target	Achievements during 1985-86 to 1987-88	Anticipated achievement 1988-89	Anticipated achievement 1989-90	Total capacity likely to be achieved during the 7th Plan.
(1)	(2)	(3)	(4)	(5)	(6)
FCI	26.00	21.58	3.00	1.80	26.38
CWC	15.00	8.70	2.25	4.05	15.00
SWCs	20.00	20.65	5.27	6.00	31.92
	61.00	50.93	10.52	11.85	73.30

The year-wise achievement of FCI and the expenditure incurred during the 7th Plan was as follows:

Year	Capacity completed (lakh tonnes)	Expenditure (Rs. in crores
1985-86	10.40	101.15
1986-87	7.20	72.03
1987-88	3.98	38.86
1988-89	3.00	27.75
1989-90(Targetted)	1.80	25.00
	26.38	264.79

All the agencies are, therefore expected to achieve the targets laid down during the 7th Plan. In fact the achievement of SWCs is about 1½ times the target laid down for it.

(Contd....5)

ASSUMPTIONS MADE FOR ASSESSING STORAGE REQUIREMENTS FOR FOODGRAINS FOR THE 8th PLAN.

2.6. In working out the storage requirement of foodgrains for the Central pool stocks for the 8th Five Year Plan, the following assumptions have been made :-

(i) The foodgrain stock level has been assumed at 24.00 million tonnes by 1-7-1994. It was expected that the stock level as on 1-4-1990 may be of the order of 10.0 million tonnes. Assuming annual procurement at the level of around 20.0 million tonnes and the outgo of stocks at 18.0 million tonnes, it was considered that the net accretion may be about 2.0 million tonnes every year. This assumption does not take into account any drought year which might bring down the stock level. On this basis, the foodgrain stock level as on 1-4-1994 may be of the order of 18.0 million tonnes. Allowing for rabi procurement during that year, the peak foodgrain stock level as on 1-7-1994 was not expected to go beyond 24.00 million tonnes.

(ii) The capacity required for storage of paddy is normally 1½ times the capacity required for storage of same quantity of rice. It was considered whether additional storage requirement should be worked out on account of storage of paddy. It was felt that the quantity of paddy being procured and kept in storage by FCI was not so significant so as to plan for 50% of that quantity as additional storage capacity.

(iii) For peak foodgrain stock level, the storage capacity may be planned at 85% capacity utilisation.

(iv) Some reliance on CAP storage during the peak procurement season may be unavoidable due to movement constraints and the need to avoid double handling. It was assumed that foodgrain stocks of 4.0 million tonnes would remain in CAP storage at the time of peak procurement, i.e. about 3 months outgo of stocks.

(v) It was assumed that about 0.50 million tonnes of foodgrains would remain in transit at any given point of time.

(vi) Since the capacity was being planned for peak foodgrain stock level, separate projections for requirement of National Rural Employment Programme/Integrated Tribal Development Programme etc. were not considered necessary.

(Contd....6)

(vii) It was not considered necessary to plan for additional storage capacity for import of foodgrains. The reason was that imports may be necessary only if the foodgrains stock level dropped considerably and in that case since the capacity was being planned for the peak foodgrain stock level of 24.00 million tonnes, it would take care of storage requirement for any possible import of foodgrains.

(viii) The storage capacity reported to be available with the State Governments and their agencies for foodgrains was about 6.94 million tonnes. It was mentioned that this figure indicated the storage capacity with the State agencies about 2 years back and it was possible that some additional storage capacity might have been created by the State Governments and their agencies or may be planned during the 8th Five Year Plan. It was however considered that in planning for storage capacity, credit should be taken only for that capacity which was available as of now. To the extent State Governments and their agencies created additional capacity by the end of the 8th Five Year Plan, it would be an added cushion for holding the foodgrain stock.

(ix) In working out the storage capacity to be available as on 31-3-1990 for foodgrains, only that capacity of CWC and SWCs had been taken into account which was expected to be with FCI as on 31-3-1990. During the 7th Five Year Plan it had been assumed that 50% of the storage capacity with CWC and SWCs would be available for storage of foodgrains. This assumption had however not come true mainly on account of the location of capacity of these agencies and its tie up with the requirement of railways to have capacity at full/half rake handling points for the speedier movement. Similarly, only that private capacity had been taken into account which was expected to be with FCI as on 31-3-1990, which had been constructed specifically for the use of FCI under the earlier ARDC scheme.

STORAGE REQUIREMENT.

2.7. Based on the above assumptions, the storage requirement worked out as under :-

	(Million tonnes)
i) Peak foodgrain stock level as on 1-7-1994	24.00
ii) Less foodgrain stock in CAP storage as on 1-7-1994.	(-) 4.00
iii) Less foodgrain stock in transit at a given point of time.	(-) 0.50
iv) Foodgrain stock at peak level as on 1-7-1994 for which storage capacity was required to be planned.	19.50
v) Requirement of storage capacity at 85% capacity utilisation.	22.94

or say 23.00 million tonnes.

As against the requirement of storage capacity of 23.00 million tonnes as on 1-7-1994, the storage capacity expected to be available for foodgrains as on 1-4-1990 was estimated at 25.50 million tonnes. It was, therefore, concluded that no additional storage capacity was required during the 8th Five Year Plan on macro level basis. On the other hand, the existing capacity would have a cushion of about 2.5 million tonnes. In addition, the estimated capacity taken on hire from CWC/SWCs had been assumed at 2.4 million tonnes only. It was expected that, if need be, an additional capacity of at least 1.5 million tonnes could easily be made available by these agencies to FCI for storage of foodgrains. Besides, a capacity of at least 0.5 million tonnes could be gainfully utilised from the private capacity constructed under ARDC Scheme and recently dehired. In other words, if no further construction of storage capacity was undertaken on macro level basis, a cushion of about 4.50 million tonnes was already available to FCI considering their requirement of 23.00 million tonnes by the end of 8th Five Year Plan.

ASSESSMENT OF ADDITIONAL STORAGE REQUIREMENT ON MICRO LEVEL BASIS

2.8. Although the overall storage capacity available for foodgrains in the country would be more than adequate to meet the requirement during the 8th Five Year Plan, it was considered that some additional capacity would have to be planned to take care of regional imbalances and the need to create adequate capacity in the remote and inaccessible areas including the hill areas so as to ensure round the year supply of foodgrains to such areas.

STATE/CENTRE WISE DISPERSAL OF ADDITIONAL STORAGE REQUIREMENT INCLUDING REMOTE,HILL AND OTHER INACCESSIBLE AREAS.

2.9. A micro level analysis of storage requirement had been undertaken by the Food Corporation of India in respect of various States and Union Territories keeping in view the maximum requirement of procurement, three months' requirements of allocations for public distribution in chronically deficit States and four months' allocations in the North-Eastern States, Hill/ Remote areas because of transport bottleneck. In doing so, a detailed review of the existing godowns, owned and hired capacity, had also been done to identify those which are sub-optimal, uneconomical or non-viable. It has been noted that such of the godowns which were considered dispensable have also been dehired by the Corporation and since 1986 about 6.0 million tonnes of covered capacity is reported to have been dehired by the FCI. The process is still

(Contd....8)

continuing and further capacity of about 1.2 million tonnes is also likely to be dehired before the end of the 7th Five Year Plan. As such the available storage capacity with the Corporation has considerably been reduced at in-operable and sub-optimal locations and there is an absolute need for construction of godowns in critical areas which have been identified on the basis of the micro level analysis, mostly from the point of view of meeting the distribution requirements. A very few nodal points have also to be developed. Apart from this, Dutta Choudhary Committee's recommendations for development of full rake handling facilities, particularly in the eastern corridor have also not been implemented yet and a few locations where the construction may have to be considered during the 8th Plan period to step up the movement ex-North to the desired level have also been included. Due to constraints of time the exercise brings out estimated additional requirement which might have to be firmed up subsequently. However, the additional capacity requirement would be more or less at the same level and there may only be some minor changes in the centres indicated. According to this exercise, additional storage capacity of 8.23 lakh tonnes has to be constructed during the 8th Five Year Plan. In addition the spill over works of 1.29 lakh tonnes at 14 centres would also require to be completed. The total capacity expected to be realised during the 8th Five Year Plan for foodgrain storage would therefore work out to 9.52 lakh tonnes. Besides, 9 railway sidings would have to be constructed during the 8th Five Year Plan to streamline the movement, keeping in view the requirement of railways to provide full/half rake handling facilities at major rail-heads. The State-wise dispersal of the capacity is as follows:-

State	Capacity (in lakh tonnes)
Andhra Pradesh	0.85
Tamil Nadu	0.70
Karnataka	0.61
Kerala	0.70
Uttar Pradesh	0.93
Himachal Pradesh	0.29
Jammu & Kashmir	0.54
Rajasthan	0.20
Maharashtra	0.25
Gujarat	0.95
Assam	0.20
Bihar	0.65
Orissa	0.70
West Bengal	0.40
North-Eastern States	0.86
Total	8.23
Spill-over works at 14 centres	1.29
	9.52

(Contd....9)

The centrewise breakdown of this capacity is at Appendix-II. Centres where railway sidings are required to be constructed is at Appendix-III. Centrewise break up of the spill over works is at Appendix-IV.

FOODGRAIN STORAGE FOR DEPOSITORS OTHER THAN FCI.

2.10 Besides providing storage capacity to FCI for holding the central pool stocks, CWC and SWCs also provide storage capacity to other depositors such as agricultural producers, farmers, traders, etc. The Corporations do not construct storage capacity exclusively for this purpose and it constitutes a part of general warehousing. It was concluded that whatever additional capacity is constructed by these agencies for general warehousing could be made use of by the other depositors for storage of their commodities including foodgrains. Similarly, storage facilities to be provided by these agencies for agricultural inputs would also form a part of the general warehousing programme. The overall additional requirement of general warehousing which is discussed in Chapter-III takes into account the additional requirement for foodgrains (other than Central Pool Stocks) and other agricultural inputs also.

STORAGE CAPACITY FOR FERTILISERS.

2.11. It was noted that by the end of 7th Plan the storage requirement for fertilizers may be of the order of about 280 lakh tonnes of which the share of cooperatives may be around 115 lakh tonnes. CWC and SWCs together may provide about 65 lakh tonnes. The balance capacity of about 100 lakh tonnes would be available with the various fertilizer companies as their captive capacity or private capacity which was being made use of by these agencies. However, at present the share of CWC and SWCs for fertilizer storage was at 38 lakh tonnes, much less than the projected level of 65 lakh tonnes by the end of the 7th Plan. After considering the projections for increase in fertilizer production, it was estimated that storage arrangements may have to be made for fertilizer stocks of about 380.00 lakh tonnes by the end of 8th Five Year Plan. Of this about 180 lakh tonnes was expected to be provided by the cooperatives and 125 lakh tonnes may be available as captive capacity of the fertilizer companies or private capacity that is being hired/ may be hired by these companies. In other words, the share of CWC and SWCs may increase from about 65 lakh tonnes at the beginning of the 8th Five Year Plan to about 75 lakh tonnes by the end of the 8th Five Year Plan. This would, however, be possible only if the

(Contd...10)

optimistic projections for agricultural and fertilizer production were realised. Besides, the need for additional construction for fertilizer storage by CWC and SWCs would arise only after the fertilizer business has picked up from the existing level of about 38 lakh tonnes to about 65 lakh tonnes by the beginning of the 8th Five Year Plan. The Group, therefore, felt that additional fertilizer storage requirement by CWC and SWCs during the 8th Five Year Plan should not exceed about 10.0 lakh tonnes of which the share of CWC may be about 4.0 lakh tonnes and that of SWCs 6.00 lakh tonnes. Based on the actual utilisation of the capacity, the Group took note of the fact that the additional fertilizer storage capacity to be constructed may even be less than the proposed capacity of 10.00 lakh tonnes for the 8th Five Year Plan.

2.12. As for the outlay needed for construction of fertilizer capacity, it was noted that CWC/SWCs did not construct godowns exclusively for fertilizer storage unless long term guarantees were available from the fertilizer companies. In planning the fertilizer storage capacity, these corporations could also took into consideration the general warehousing business that may be available at these centres. The over-all planning of additional general warehousing capacity takes into account the additional requirement of fertilizer storage also and the requisite outlay for this purpose is included in the outlay for general warehousing for the over all additional capacity that was required to be constructed during the 8th Five Year Plan which has been discussed in the next chapter.

ROLE OF FCI, CWC AND SWCs.

2.13. It was concluded that the basic role of FCI is holding the buffer and the operational stocks and CWC and SWCs are providing storage capacity to FCI for holding the foodgrain stock. This basic role would not undergo any change during the 8th Five Year Plan period. The Corporation would, however, take up programmes for modernisation of the storage capacity to the extent feasible. In this connection, the question of construction of bulk storage capacity in the form of silos/flat bulk warehouses coupled with bulk transportation facilities was also considered. It was mentioned that such a proposal had been considered earlier also but had not found favour due to economic non-viability which was based on number of turnovers. Besides, for the system to be efficiently operational, there was a need to develop an integrated system of bulk handling,

(Contd....11)

movement, storage and distribution covering all the stages from procurement to distribution. After such an integrated system had been worked out, its economic viability had to be examined before taking an appropriate decision. It was felt that in view of the conclusion arrived at that additional capacity was not required at macro level basis, it would not be appropriate to make any recommendation at this stage for creation of bulk storage and transportation facilities which involved heavy investment and for which modalities had yet to be worked out. In coming to this conclusion the Working Group also took note of the resource constraints during the 8th Five Year Plan. The role of CWC/SWCs has been discussed further in the next chapter.

COOPERATIVE SECTOR.

2.14. Under the three tier scheme, cooperatives were the main agencies to provide storage facilities at block/village level in rural areas, to supply agricultural inputs to the farmers, market their surplus agricultural produce and distribute consumer articles. The cooperatives had built up a storage capacity of about 103 lakh tonnes over the years through assistance provided by the National Cooperative Development Corporation (NCDC). The role of FCI, CWC and SWCs on the other hand was quite distinct and separate and there was no duplication of efforts. In view of this the Working Group did not go into the question of additional storage requirement for cooperatives which was being planned separately by the National Cooperative Development Corporation for the 8th Five Year Plan.

PROVISION OF STORAGE CAPACITY BY PRIVATE SECTOR.

2.15. The Working Group also considered the extent to which private sector could be utilised for providing additional storage capacity required. In view of the conclusion that additional storage capacity would not be required on macro level basis for foodgrains as also the fact that the capacity already constructed by the private sector under the ARDC scheme had been defaulted during the last few years to a considerable extent, it was felt that the private sector could be relied on for providing only that capacity to FCI which had already been constructed under the guarantee scheme by it for use of FCI and that no additional construction by the private sector during the 8th Five Year Plan may be necessary.

(Contd....12)

AGENCY-WISE DISTRIBU-TION.

2.16. The Working Group considered the agency-wise distribution of thd additional storage capacity of 8.23 lakh tonnes required to be constructed for foodgrains during the 8th Five Year Plan. Keeping in view the programmes of CWC and SWCs for construction of storage capacity for general warehousing it was concluded that foodgrain storage capacity of 2.00 lakh tonnes each may be allocated to CWC and SWCs for the 8th Five Year Plan. The construction would be financed by the CWC and SWCs from their own resources without any budgetary support from the Central Government either directly or through the Central Warehousing Corporation. The remaining capacity of 4.23 lakh tonnes would be constructed by FCI besides completion of spill-over works and completion of railway sidings.

OUTLAY

2.17. The outlay needed for construction of additional storage capacity of 4.23 lakh tonnes, completion of spill over works of 1.29 lakh tonnes and construction of nine railway sidings by FCI during the 8th Five Year Plan is estimated at about Rs.100 crores as per the break-down indicated below :-

Areas (1)	Capacity (2)	Per tonne cost of construction Rs. (3)	Outlay (Rs. in crores) (4)
i) Plain areas	2,46,000	825	20.29
ii) Hill areas	90,840	1,650	14.99
iii) North-Eastern Region	86,000	2,750	23.65
iv) Spill-over works	1,29,180	..	14.42
v) Railway Sidings	9 numbers	..	27.00
			100.35

or say Rs.100 crores.

The balance construction cost required for the spill over works of FCI during the 8th Five Year Plan has been worked out on centre-wise basis. The details are at Appendix-IV. As for Railway Sidings it has been assumed that the length of each railway siding would be about 4 K.Ms. and the cost of construction may be about Rs.75 lakhs per K.M. In working out these estimates no provision for escalation during the 8th Five Year Plan has been made.

APPENDIX-I

Statement showing the capacity likely to be available on 31.3.1990 for storage of foodgrains with FCI and State Governments/Agencies

(Figures in '000 tonnes)

Sl. No.	State/U.T.	Capacity with FCI			Capacity with State Govt. Agencies.	Total
		Owned	Hired	Total		
1.	2.	3.	4.	5.	6.	7.
1.	Assam	187.16	111.68	298.84	104.00	402.84
2.	Arunachal Pradesh	17.50	-	17.50	-	17.50
3.	Meshalaya	10.00	9.10	19.10	-	19.10
4.	Mizoral	10.00	5.29	15.29	-	15.29
5.	Manipur	12.50	6.50	19.00	-	19.00
6.	Nagaland	5.50	7.91	13.41	-	13.41
7.	Tripura	20.24	18.87	39.11	-	39.11
8.	Orissa	227.15	117.23	344.38	3.00	347.38
9.	Bihar	411.08	239.38	650.46	40.00	690.46
0.	West Bengal	847.78	532.89	1380.67	233.00	1613.67
1.	Delhi	354.01	67.12	421.13	34.00	455.13
2.	Haryana	770.90	584.76	1355.66	800.00	2155.66
3.	Himachal Pradesh	7.50	14.29	21.79	38.00	59.79
4.	Jammu and Kashmir	64.64	22.65	87.29	-	87.29
5.	Punjab	2094.45	1606.73	3701.18	3200.00	6901.18
5.	Rajasthan	707.03	20.46	727.49	143.00	870.49
7.	Uttar Pradesh	1456.41	1261.67	2718.08	-	2718.08
8.	Andhra Pradesh	1057.48	493.91	1551.39	227.00	1778.39
9.	Tamil Nadu	572.78	132.83	705.61	387.00	1092.61
0.	Kerala	519.52	21.87	541.39	148.00	689.39
1.	Karnataka	228.68	142.70	371.38	152.00	523.38
2.	Gujarat	480.87	294.01	774.88	237.00	1011.88
3.	Maharashtra	1165.45	194.18	1359.63	996.00	2355.63
4.	Madhya Pradesh	857.40	288.53	1145.93	198.00	1343.93
5.	Goa	15.00	11.45	26.45	-	26.45
6.	Pondicherry	40.70	1.76	42.46	-	42.46
	Grand Total:	12141.73	6207.77	18349.50	6940.00	25289.50

APPENDIX - II

CAPACITY WHICH IS CONSIDERED NECESSARY ON MICRO LEVEL ASSESSMENT

SOUTH ZONE

Revenue District	Centre	Capacity (tonnes)	
ANDHRA PRADESH:			
Guntur	Naran Raopet	5,000	(MG) Procurement
Srikakulam	Rajim or Sompeta	10,000	For reserve and to substitute hired capacity.
Vizianagaram	Vizianagaram	10,000	(BG)
	Total ::	25,000	
TAMIL NADU:			
Salem	Salem	15,000	For serving Dharmapur Periyar.
Pudukkottai	Pudukkottai	5,000	(MG) For Distribution.
Ramanathapuram	Ramanathapuram	5,000	(MG) For Distribution.
Kanyakumari	Nagercoil	5,000	(BG) For Distribution.
Trichy	Trichy	5,000	(BG/MG) (In railway yard only for handling receipts on BG & redespatch on MG)
Madurai	Kappalur	30,000	(BG) For reserve and distribution
Anna	Dindugal	5,000	(BG) For distribution.
	Total ::	70,000	

(Contd....15)

Revenue District	Centre	Capacity (Tonnes)	
KARNATAKA:			
Belgaum	Belgaum	7,500	(MG) To step up movement to Karnataka from Miraj
Chikmagalur	Birur	6,000	(MG) IIDP district.
Kodagu	Kodagu	2,500	(MG) - do -
Kolar	Bangarpet	5,000	(BG) For receipts from other States & distribution.
Raichur	Raichur	30,000	(BG) For procurement, receipts from other States and distribution to interior districts of Karnataka.
Tumkur	Tumkur	5,000	For distribution.
Kharwar	Kharwar	5,000	In the port area; distribution-handling of export/imports.
	Total ::	61,000	
KERALA:			
Pathanamthitta	Pathanamthitta	10,000	To provide 39% of projected distribution of 1994-95.
Alleppey	Location to be decided	10,000	To facilitate 34% of projected distribution of 1994-95.
Kottayam	Ettakot	10,000	To meet requirement of roadfed district of Idukki(having nil cap.)
Malappuram	Kuttipuram	10,000	To provide for 19% of distribution need of 1994-95.
Cannanore	At suitable location.	30,000	To provide for 25% of distribution need of 1994-95.
	Total ::	70,000	

REQUIREMENT OF SOUTHERN STATES ON MICRO LEVEL ANALYSIS

State	Capacity(Tonnes)
Andhra Pradesh	25,000
Tamil Nadu	70,000
Karnataka	61,000
Kerala	70,000
Total ::	2,26,000

(Contd....16)

Revenue District	Centre	Capacity (Tonnes)	
NORTH ZONE			
Hill Areas	Total works proposed for FCI -- 15,000 tonnes in two phases -- Pithoragarh (5) Bazpur (10)		
	I Phase sanctioned (7,500 tonnes)		
	II Phase to be taken up in VIII Plan (7,500 tonnes)		
Other Works			
Deoria	Deoria	30,000	Procurement
Dehradun	Harewala (where Railways have developed a siding)	10,000	To supply stocks to Pauri Garhwal, Tehri Garhwal, Uttarkashi and Chamoli.
Rampur	Rampur	30,000	Procurement
Badaun	Badaun	10,000	Procurement
	Dangora	5,000	Procurement
	Total ::	92,500	
HIMACHAL PRADESH:			
Total programme		41,640	
Allotted to CWC		10,800	
Balance		30,840	
Less Works-in-progress		7,500	
Balance		23,340	
Land available but work to be taken up in VIIIth Plan(Nurpur)		3,340	
Land not available (20,000)-- Likely to be taken up and work started 10,000 tonnes in 7th Plan.		10,000	
Balance 10,000 tonnes to be provided in 8th Plan			
Locations to be identified and taken up in 8th Plan		16,000	
Total to be provided for FCI in 8th Plan for Himachal - Pradesh.		29,340	

(Contd....17)

	(Figures in Tonnes)	
JAMMU & KASHMIR:		
Total Programme	57,500	
Less Works-in-progress	15,000	
Balance	42,500	
Land expected and on which works also may start in the 7th Plan	2,500	(Poonch)
Balance to be provided in 8th Plan from already approved works	40,000	
New sites to be identified in 8th Plan	14,000	
Total for 8th Plan ::	54,000	
RAJASTHAN:		
ITDP and for drought affected districts like Pali, Jaisalmer, etc.	20,000	
Locations to be identified.		
No programme contemplated in Punjab, Haryana, Delhi and U.T. Chandigarh.		

SUMMARY

UTTAR PRADESH	92,500
HIMACHAL PRADESH	29,340
JAMMU & KASHMIR	54,000
RAJASTHAN	20,000
Total ::	1,95,840

EAST ZONE

NEF:

Arunachal Pradesh	9,000
Manipur	7,000
Meghalaya	21,000
Mizoram	4,000
Nagaland	19,000
Tripura	19,000
Sikkim	7,000
	86,000

(Contd....18)

(Fig. in tonnes)

ASSAM:		
Jhalukbari	20,000	
BIHAR:		
Siwan	5,000	
Kiul	5,000	
ITDP, Dumk, Godda etc.	5,000	
Kathihar	30,000	(Siding)
Koderma	10,000	
Daltanganj	10,000	
	65,000	
ORISSA:		
Badampahar	10,000	
New sites (for nodal points to serve Bolangir, Pillahalt, Keisingha, Khurdaraod, Kata - Banji & Raigarh)	60,000	(Two full rake points as per Dutta Chowdhry Committee.
	70,000	
WEST BENGAL:		
Bishnupur	5,000	
Bankura ITDP/TSP	5,000	
Berhampur court or Krishnagar	30,000	(As per Dutta Chowdhry Committee for block rake)
Total ::	40,000	

S U M M A R Y

NEF	86,000
ASSAM	20,000
BIHAR	65,000
ORISSA	70,000
WEST BENGAL	40,000
	2,81,000

(Contd....19)

WEST ZONE

MAHARASHTRA:

Revenue District	Centre	Capacity (Tonnes)	
Bir, Nanded, Jalna	At suitable place	5,000	
Satara	Satara	5,000	for distribution purposes.
Ratnagiri	Ratnagiri	5,000	
Sindhudurg	Sindhudurg	5,000	
Chandrapur	Chandrapur	5,000	
	Total ::	25,000	

GUJARAT:

Mahesana	Mahesana	5,000	
Sabarkantha	Himmathnagar	15,000	(gap 31,000) no capacity at all.
Panchmahal	Godhra	10,000	
Bharich	Bharich	10,000	South Gujarat on Bombay line.
Valsad	Valsad	30,000	
Dang	Dang	5,000	
Junagad	Junagad	10,000	Saurashtra
Amreli	Amreli	10,000	
	Total ::	95,000	

MADHYA PRADESH: NIL

SUMMARY

MAHARASHTRA	25,000
GUJARAT	95,000
	1,20,000

OVERALL SUMMARY

NORTH ZONE	1,95,840
SOUTH ZONE	2,26,000
WEST ZONE	1,20,000
EAST ZONE	2,81,000
GRAND TOTAL ::	8,22,840

(Contd....20)

APPENDIX-III

RAILWAY SIDINGS PROPOSAL IN THE VIIIth FIVE YEAR PLAN

1.	Deoria	(Uttar Pradesh)
2.	Rampur	(Uttar Pradesh)
3.	Raichur	(Karnataka)
4.	Cannanore	(Kerala)
5.	Katihar	(Bihar)
6.		
7.	Orissa	(Nodal Points)-2
8.	Berhampur	(West Bengal)
9.	Kappalur	(Tamil Nadu)

@ Rs. 75.00 lakh per Km.

Estimated 4 Kms. for each siding.

Total cost Rs. 27.00 crores.
No escalation.

(Contd.....20A)

APPENDIX-IV

CENTPE-WISE BREAK UP OF SPILL OVER WORKS OF 1.29 LAKH TONNES

Sl. No.	Centre	Capacity in tonnes	Funds required in Lakhs(Rs.)
1.	Nileshwar	10,000	75
2.	Rajauri	2,500	37
3.	Bazpur	5,000	115
4.	Pithoragarh	2,500	
5.	Sikkim	3,340	40
6.	Dhankuni	18,340	216
7.	Kohima	2,500	125
8.	Dimapur	2,500	
9.	Aizwal	5,000	125
10.	Lawngtilai	2,500	30
11.	Titlagarh	10,000	100
12.	Andaman & Nicobar	5,000	85
13.	Gudivada	30,000	161
14.	Hubli	30,000	333
		1,29,180	1,442

(Cintd....21)

CHAPTER - III

3. Assessment of Additional Storage Requirement for General Warehousing.

GENERAL

3.1. Based on the recommendations of the All India Rural Credit Survey Committee, the Central Warehousing Corporation (CWC) and 16 State Warehousing Corporations (SWCs) have been set up so far. These Corporations are regulated under the Warehousing Corporations Act, 1962. The main function of these Corporations is to acquire and build warehouses and operate them for the storage of agricultural produce and other commodities offered by individuals, cooperative societies and other institutions. While CWC operates at centres of all India importance, the SWCs operate at the centres of State and district level importance. The major commodities handled by these Corporations are foodgrains, fertilizers, industrial raw materials and finished products, oil seeds, chemicals, metals, jute, cotton, etc. The CWC has also taken up custom bonding, development of container freight stations, inland container depots, air cargo complexes, etc.

STORAGE CAPACITY AT THE BEGINNING OF THE 8th PLAN.

3.2. The storage capacity expected to be available with CWC and SWCs at the beginning of the 8th Plan is as follows:

Agency	Owned	Hired	Total
		(in million tonnes)	
CWC	4.91	1.83	6.74
SWCs	6.88	2.28	9.16

The State-wise break-up of the storage capacity expected to be available with CWC and SWCs as on 31.3.1990 is given in Appendices-I & II.

CHIEVE-ENTS-URING HE th FIVE EAR PLAN.

3.3. The achievements of CWC and SWCs by way of realization of storage capacity during the 7th Five Year Plan has been discussed in para 2.5 in the earlier Chapter. While the CWC is expected to achieve the target of 15.00 lakh tonnes in the 7th Five Year Plan, the SWCs are expected to complete a capacity of about 32 lakh tonnes as against the target of 20.00 lakh tonnes during the same period. The year-wise achievement and the expenditure

(Contd....22)

incurred during the 7th Plan was as follows:-

Year	CWC		SWCs	
	Achievement (lakh tonnes)	Expenditure (Rs.in crores)	Achievement (lakh tonnes)	Contributic by CWC to- wards the share capit cf SWCs. (Rs. in crore
1985-86	4.00	19.60	4.66	1.25
1986-87	2.10	12.15	8.39	2.11
1987-88	2.60	13.79	7.60	1.75
1988-89 (Provisional)	2.20	24.47	2.86	1.98
1989-90 (Targetted)	4.05	28.00	3.97	2.07

BROAD CATEGORIES OF COMMODITIES.

3.4 The warehousing business of these Corporations can broadly be placed in three categories i.e., foodgrains, fertilizers and other commodities. The other commodities can further be placed in sub-categories such as custom bonded warehouses, inland container depot/container freight stations, jute and other items under general warehousing. The requirement of additional storage capacity has been discussed broadly in these categories.

The broad break up of capacity constructed by CWC during the 7th Plan was as follows:-

(in lakh tonnes)

Year	Foodgrain Storage	Custom Bonded Warehouses/ ICFS.	General Warehousing	Total
1985-86	2.83	0.16	1.01	4.00
1986-87	1.82	0.20	0.08	2.10
1987-88	0.72	0.02	1.86	2.60
1988-89 (Provisional)	0.37	0.20	1.63	2.20
1989-90 (Targetted)	0.68	1.45	1.92	4.05

(Contd....23)

FOODGRAIN STORAGE.

3.5. The Warehousing Corporations provide storage facilities for foodgrains, for central pool stocks as also for foodgrains of other depositors. So far as central pool stocks are concerned, the additional storage requirement during the 8th Five Year Plan has been discussed in Chapter - II and it has been proposed that of the additional storage capacity required, a capacity of 2.00 lakh tonnes each would be constructed by CWC and SWCs. The storage capacity requirement of other depositors for foodgrains is covered in general warehousing. This category includes deposits of foodgrains, coarse grains, pulses, etc., from agencies like cooperatives, farmers and traders. The CWC had about 4.24 lakh tonnes of foodgrains from agencies other than FCI and State Governments by the end of 1986. Due to lesser foodgrain stock level this has at present dropped to about 2.4 lakh tonnes. Based on the utilisation of the capacity by these depositors in the past, the requirement could be assessed at about 4.00 lakh tonnes. The existing capacity of the Corporation would be able to meet this requirement. Besides, the warehouses of these Corporations are not constructed for a particular commodity alone unless the capacity has been constructed for a particular agency like FCI, fertilizer companies, etc., on a long term guarantee basis. Therefore, the additional requirement for foodgrain storage for depositors other than FCI and State Governments is taken into consideration in working out the additional requirement for general warehousing.

FERTILIZER STORAGE

3.6. The additional capacity requirement of fertilizers has also been discussed in para 2.11, in the earlier chapter. It was concluded that additional fertilizer storage requirement by CWC and SWCs during the 8th Five Year Plan should not exceed about 10.00 lakh tonnes of which the share of CWC may be about 4.00 lakh tonnes and that of SWCs about 6.00 lakh tonnes. On the basis of the growth of fertilizer business with the warehousing Corporations over the past several years it has been observed that about 8% of the total consumption of the fertilizers is stored in central warehouses and about 12% in the state warehouses. It has been assumed that during the 8th Plan also the same trend may continue. Based on this

(Contd....24)

assumption, the requirement of storage capacity for fertilizers with CWC and SWCs is expected to be as follows :-

(Figures in lakh tonnes)

Year (1)	National consumption (ASCI) (2)	CWC's share 8% of (2) (3)	SWC's share as 12% of(2) (4)	Total (5)
1990-91	328.9	26.31	39.45	65.76
1991-92	340.9	27.27	40.91	68.18
1992-93	353.2	28.26	42.28	70.54
1993-94	366.0	29.28	43.92	73.20
1994-95	379.3	30.34	45.52	75.86

The additional fertilizer stock expected to be stored in CWC warehouses during the 8th Five Year Plan is therefore estimated at 4.03 lakh tonnes (30.34 - 26.31). At 95% capacity utilisation the additional requirement of fertilizer storage would therefore work out to 4.24 lakh tonnes. As for SWCs, the additional fertilizer stock likely to be stored during the 8th Five Year Plan would work out to 6.07 lakh tonnes (45.5 - 39.45). Assuming 85% capacity utilisation the additional storage requirement would work out to slightly more than 7.00 lakh tonnes. The Working Group however concluded that the additional fertilizer storage to be provided during the 8th Plan by the SWCs may be restricted to 6.00 lakh tonnes keeping in view the average utilization of the storage capacity available with different SWCs as also the fact that, in case of SWCs, the additional storage requirement was worked out on the basis of average growth whereas the actual growth would vary from SWC to SWC. The Working Group was of the view that the additional storage capacity to be provided for fertilizer storage should be approximately 10 lakh tonnes and, therefore, the share of CWC and SWCs may be 4.24 lakh tonnes and 6.00 lakh tonnes respectively.

(Contd....25)

CUSTOM BONDED WARE - HOUSES.

3.7. The CWC has been identified by the Central Board of Excise and Customs as the agency to set up public bonded warehouses at inland centres to facilitate availing of the benefit of deferred payment of duty by the trade and industry. The Corporation has been engaged in this activity since July 1980. Over the years, the Corporation has built up its custom bonded warehousing capacity, which increased from 2.54 lakh tonnes as on 31-3-1983 to 8.32 lakh tonnes as on 31-3-1989. It is expected that by the end of the 7th Five Year Plan the custom bonded warehousing facilities available with CWC may be of the order of about 9.00 lakh tonnes. The custom bonded capacity which was 5.23 lakh tonnes at the beginning of the 7th Five Year Plan is therefore expected to be augmented by about 3.77 lakh tonnes during the 7th Plan period. The Working Group considered the growth of custom bonded business during the 7th Plan as also the projected growth during the 8th Plan period and came to the conclu sion that the Corporation may be required to provide additional facilities for additional custom bonded business of about 4.20 lakh tonnes during the 8th Plan. At 95% capacity utilisation the requirement of additional warehousing facilities for this purpose work out to 4.43 lakh tonnes.

The SWCs have not made any beginning in the custom bonded business so far. Several SWCs have shown their willingness to provide additional warehousing facilities for this purpose during the 8th Plan. The Working Group considered that with the growth in the custom bonding business as also the fact that there were several private bonded warehouses coming up due to the lack of adequate public bonded warehouses, it would be desirable to associate SWCs in this activity in consultation with the Central Board of Excise and Customs. It was considered that during the 8th Plan, custom bonded warehouses to the extent of 1.00 lakh tonnes may be constructed by the SWCs.

(Contd....26)

INLAND CONTAINER DEPOTS/ CONTAINER FREIGHT STATIONS.

3.8. The CWC has also been diversifying its activity by providing facilities for containerisation and warehousing at selected centres of international trade. As an initial step facilities for receipt and de-stuffing of import containers and for consolidation and stuffing of export cargo were provided at Bombay. A full fledged container ffeight station has been established at Delhi. Another container freight station has started functioning at Madras with effect from 1-1-1988. According to the estimates of Ministry of Surface Transport/Railway Board the total containerised traffic by the end of 8th Five Year Plan would be about 20 lakh TEUs or about 1.6 lakh TEUs per month. The CWC would therefore have to add significantly to its CFS capacity during the 8th Plan. The expansion programme includes provision of additional facilities at Delhi and certain other important trade centres. In terms of capacity, the CWC has at present warehousing facilities of about 25,000 lakh tonnes (2,500 TEUs per month) which was expected to increase to about 1.14 lakh tonnes (11,400 TEUs) by the beginning of the 8th Plan. Keeping in view the projections made by the Ministry of Surface Transport and Railway Board, the Working Group concluded that additional facilities to the extent of 2.00 lakh tonnes (20,000 TEUs per month) would have to be provided by CWC during the 8th Plan for this purpose.

One TEU (Twenty Equivalent Units) is commonly known as Twenty Feet Container. The measurements of this container are 20' x 6' x 8'. Area-wise 120Sq.feet would be needed for 2 TEUs since stack height of TEUs is restricted to two. The capacity equivalent of a TEU works out to ten tonnes. The projections have been made on this basis. However, the number of TEUs handled in an year would depend on the turnover. Assuming that a single turnover takes about a month's time, the planned capacity of 2.00 lakh tonnes would enable the Corporation to handle 2.4 lakh TEUs per year and 20,000 TEUs at any given point of time.

(Contd....27)

STORAGE OF JUTE AND COTTON

3.9. Two of the major commodities included in the Corporation's general warehousing programme for which warehousing facilities are provided by CWC and SWCs are jute and cotton. A capacity of about 2.00 lakh tonnes is expected to be utilised for these commodities by CWC and SWCs by the end of 7th Five Year Plan. The production of these natural fibres is expected to increase from about 26.5 million bales in 1990-91 to about 31.0 million bales by the end of 8th Plan. The Jute Corporation of India has assessed the requirement of infrestructural facilities in this regard and come to the conclusion that CWC ans SWCs may be required to provide additional storage space of about 3.00 lakh tonnes for the storage of these items by the end of the 8th plan. While this would be a minor share of the increase in the production envisaged, the Working Group concluded that it would be appropriate to plan additional warehousing facilities for these Commodities on a conservative estimate, since sizable portion of jute and cotton is stored in captive storage with the private agencies. The Working Group therefore felt that additional capacity to be planned by CWC and SWCs during the 8th plan should be restricted to the projections made by the Jute Corporation of India for the Warehousing Corporations which has assessed additional requirement at about 3.00 lakh tonnes. It was considered that, of this requirement, while additional storage capacity of 1.00 lakh tonnes may be provided by CWC, the balance 2.00 lakh tonnes may be provided by the SWCs, keeping in view the dispersal of these commodities at various centres where such warehousing facilities would be required.

THER ITEMS F GENERAL AREHOUSING

3.10. As stated earlier, CWC and SWCs do not construct warehouses exclusively for a particular commodity. The warehouses are multi-purpose and if business for one commodity for which it may have been constructed initially is no more available, the facilities could be utilised for storage of various other commodities. Therefore while all items discussed above excluding foodgrains for central pool stocks would fall under this general warehousing business, certain major commodities for which additional warehousing requirement could be assessed separately have been discussed above separately. There are over 86 categories of notified commodities which are stored in the warehouses of CWC/SWCs. Besides the above mentioned commodities discussed separately, these would include industrial raw materials and finished products, oil and oil seeds,

Contd... 28/-

chemicals, metals, spices, sugar, jaggery, etc. Based on the past trend of utilisation of warehousing space for these commodities, it was estimated that, so far as CWC is concerned, as on 31.3.1990 a capacity of 10.25 lakh tonnes may be utilised under general warehousing scheme for these commodities. By the end of 8th plan this requirement was expected to rise to 12.08 lakh tonnes on a conservative estimate. This would indicate a net increase of 1.83 lakh tonnes for CWC. Based on 95% optimum capacity utilisation the actual additional capacity needed by CWC for storage of these commodities would work out to 1.93 lakh tonnes. Similarly it was expected that the storage requirement by SWCs under general warehousing scheme for these commodities should increase from the base level of 10.29 lakh tonnes at the beginning of the 8th plan to 14.13 lakh tonnes by the end of 8th plan indicating an increase of 3.84 lakh tonnes. Based on 85% optimum capacity utilisation the additional capacity needed by SWCs for these commodities during the 8th Five Year Plan is therefore estimated at 4.52 lakh tonnes. The Working Group therefore concluded that additional capacity of 1.93 lakh tonnes and 4.52 lakh tonnes may be planned for these commodities by CWC and SWCs respectively for the 8th Five Year Plan.

CAPACITY UTILIZATION

3.11. In working out the above projections 95% capacity utilisation for CWC and 85% capacity utilisation for SWC has been assumed. The Working Group considered the question of capacity utilisation. It was expected that generally the average capacity utilisation was normally taken at 75% at which the godowns were economically viable, based on the present cost of construction and the wage rates. In this background, although 95% capacity utilisation by CWC was considered very high, the view taken was that it would be realistic to plan additional capacity for CWC at this percentage of capacity utilisation since CWC had been able to achieve this capacity utilisation in the past. However, the optimum capacity utilisation in case of SWCs was estimated at 85% due to certain constraints such as smaller size godowns scattered over a large number of centres with related movement problems etc. 85% capacity utilisation was also considered very satisfactory keeping in view the average capacity utilisation at 75%. The Working Group concluded that it would be better to plan additional requirement at higher percentage of capacity utilisation as it would motivate CWC and SWCs to operate warehouses more economically and would eliminate wastage of capacity which may otherwise occur if the additional capacity was planned at 75% capacity utilisation.

Contd...29/-

ADDITIONAL STORAGE REQUIREMENTS

3.12. Based on the above projections, the Working Group concluded that the additional storage requirement for CWC and SWCs may be projected as follows:-

(In lakh tonnes)

Commodity	Additional storage requirement during the 8th plan.	
	CWC (95% capacity utilisation).	SWCs (85% capacity utilisation).
1. Foodgrains	2.00	2.00
2. Fertilizers	4.24	6.00
3. Custom bonded warehouses	4.43	1.00
4. ICD/CFSs	2.00	-
5. Jute & Cotton	1.00	2.00
6. General Warehousing (other than foodgrains, fertilizers, jute, custom bonded, ICD/ CFS, etc.)	1.93	4.52
	15.60	15.52
or say	15.00	15.00

OUTLAY

3.13. The outlay needed for construction of this capacity of 30.00 lakh tonnes would be met from the internal resources of the Warehousing Corporations without any budgetary support from the Government. The requirement of funds for completion of this capacity and its financing has been discussed in Chapter IV relating to generation of internal resources by CWC and SWCs.

ROLE OF CWC & SWCs

3.14. The Working Group discussed at length the role of CWC and SWCs particularly with a view to providing requisite flexibility to these Corporations for diversification of business and for undertaking modernisation. It was concluded that the basic role of CWC and SWCs to provide storage capacity for general warehousing including a part of the capacity to FCI for holding the Central pool foodgrain stock was not expected to undergo any change during the 8th Five Year Plan.

Contd...30/-

In this connection the following conclusions were arrived at:-

(a) The Warehousing Corporations should make arrangements for unitisation and containerisation for foodgrains, fertilizers and cement stock.

(b) Public sector organisations should increasingly use the warehousing facilities available with Warehousing Corporations instead of creating their own captive capacity or going in for private capacity.

(c) The role of the existing Central Storage Committee in the Department may be reviewed with a view to redefining its role for coordinating the construction programmes of various central agencies including public sector undertakings. The Committee may also be made broad based by including representatives of Department of Fertilizers, major fertilizer companies besides FCI, CWC, etc.

(d) Amendment to Warehousing Corporations Act, 1962 to enable the Warehousing Corporations to take up trading activity may be considered by the Government.

STATE-WISE DISPERSAL OF CAPACITY

3.15. The Working Group considered the question of State-wise dispersal of the capacity proposed to be constructed by CWC during the 8th Five Year Plan as also the allocation of capacity of 15.00 lakh tonnes among various SWCs. It was concluded that this would involve micro level analysis based on surveys of centres where possible business potential could be developed in near future. The Working Group therefore felt that this exercises should be undertaken separately by CWC in respect of its own construction programme and in consultation with SWCs in respect of the capacity proposed to be constructed by these agencies.

APPENDIX - I

Statement showing the capacity expected to be available with CWC as on 31-3-1990.

(Figures in '000 tonnes)

Sl. No.	State/ Union Territory	Capacity with CWC			
		Owned	Hired	Plinth	Total
1	2	3	4	5	6
1.	Arunachal Pradesh	-	-	-	-
2.	Andhra Pradesh	914.00	91.60	3.00	1,008.60
3.	Assam	38.10	5.00	-	43.10
4.	Bihar	113.60	59.50	-	173.10
5.	Goa	17.00	-	1.10	18.10
6.	Gujarat	187.60	67.10	4.30	259.00
7.	Haryana	130.50	89.40	-	219.90
8.	Himachal Pradesh	8.30	-	-	8.30
9.	Jammu&Kashmir	-	-	-	-
10.	Karnataka	134.20	51.50	-	185.70
11.	Kerala	92.90	4.40	-	97.30
12.	Madhya Pradesh	500.00	97.70	1.80	599.50
13.	Maharashtra	467.50	276.00	107.10	850.00
14.	Manipur	-	-	-	-
15.	Meghalaya	-	-	-	-
16.	Misoram	1.50	-	-	1.50
17.	Nagaland	13.00	-	-	13.00
18.	Orissa	111.70	11.80	-	123.50
19.	Punjab	318.50	251.00	-	569.50
20.	Rajasthan	105.20	31.60	7.10	143.90
21.	Sikkim	-	-	-	-
22.	Tamil Nadu	491.60	96.80	12.40	600.80
23.	Tripura	22.90	0.90	-	23.80
24.	Uttar Pradesh	884.10	152.60	-	1,036.70
25.	West Bengal	247.00	478.70	2.00	727.70
26.	Chandigarh	10.50	7.20	1.70	19.40
27.	Delhi	100.20	47.60	6.40	154.20
28.	Pondicherry	5.60	3.00	-	8.60
	TOTAL ::	4,915.50	1,823.40	146.90	6,885.80

(Contd....32)

APPENDIX- II

Statement of Storage Capacity expected to be available as on 31.3.1990 with State Warehousing Corporations.

(figures in '000 tonnes)

Sl. No.	Name of SWC.	Capacity with SWC's			
		Owned	Hired	Plinth	Total
1	2	3	4	5	6
1.	Andhra Pradesh	463.00	156.00	-	619.00
2.	Assam	179.00	54.00	-	233.00
3.	Bihar	114.00	198.00	-	312.00
4.	Gujarat	107.00	64.00	-	171.00
5.	Haryana	675.00	273.00	33.00	981.00
6.	Karnataka	193.00	161.00	-	354.00
7.	Kerala	140.00	57.00	-	197.00
8.	Madhya Pradesh	706.00	254.00	-	960.00
9.	Maharashtra	752.00	110.00	-	862.00
10.	Meghalaya	78.50	-	-	78.50
11.	Orissa	125.00	68.00	-	193.00
12.	Punjab	1321.00	273.00	133.00	1727.00
13.	Rajasthan	367.00	65.00	-	432.00
14.	Uttar Pradesh	972.00	347.00	-	1319.00
15.	Tamil Nadu	580.00	45.00	-	625.00
16.	West Bengal	113.00	157.00	-	270.00
	Total:	6885.50	2282.00	166.00	9333.50

(Contd....33

CHAPTER - IV

4. Assessment of Generation of Internal Resources and its utilisation

INTERNAL RESOURCES OF FCI.

4.1. The Group considered the final outlays and the budgetary support availed by FCI and CWC during the 7th Plan period for assessing the extent of internally generated resources utilised for defraying plan outlays for the construction of storage capacities. In so far as the Food Corporation of India was concerned, the Group was of the opinion that being a non-profit earning organisation it was not in a position to generate any internal resources. The working operations of FCI and its pattern of financing was such that Government have to give substantial subsidy to FCI and the Corporation do not have any internal resources for meeting the construction outlay requirements. Hence the Group decided to treat the internal generation of resources as NIL in so far as FCI was concerned.

INTERNAL RESOURCES OF CWC.

4.2. The Group noted that CWC had been generating internal resources and since 1986-87, was self-dependent for financing its plan programmes - its own construction outlays as also investment in the equity of the SWCs.'

GENERATION OF INTERNAL RESOURCES BY CWC DURING 6th & 7th PLAN PERIOD.

4.3. The performance of the CWC, during the VI Five Year Plan period as well as in each of the years of the VII Five Year Plan period, in regard to (i) internal resource generation and (ii) its utilisation for financing its own construction programme as well as investment in the SWCs is tabulated below:-

(Rs. in crores)

Particulars	VI Plan period 1980-85 (Total)	VII Plan 85-86	86-87	87-88	88-89 (estimate)	89-90 (estimate)	Total
Net Profit	59.51	24.26	26.99	36.22	30.00	37.65	155.12
Depreciation	8.03	2.37	3.02	3.47	4.00	4.40	17.26
Gross Internal Resources	67.54	26.63	30.01	39.69	34.00	42.05	172.38
Utilisation							
- Dividend	10.47	3.04	3.58	3.58	3.60	3.80	17.60
- Loan repayment	7.71	1.15	6.11	4.88	2.50	1.17	15.81

(Table continued on next page)

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(Table continued from pre-page)

Particulars	VI Plan period 1980-85 (Total)	VII Plan 85-86	86-87	87-88	88-89 (estimate)	89-90 (estimate)	Total
Utilisation							
- Construction of Warehouses and investment in SWCs	29.84	17.04	13.19	15.15	22.27	31.50	99.15
- Purchase of assests and diversion to/from Working Capital	19.52	5.40	7.13	16.08	5.63	5.58	39.82
	67.54	26.63	30.01	39.69	34.00	42.05	172.58

TARGETS FOR THE 6th & 7th PLAN PERIOD

4.4. While framing VI and VII Five Year Plan projections and at the mid-term appraisal stages the extent of internally generated resource utilisation estimated for financing CWC's own construction outlays and investments in the SWCs was as follows:-

(Rs. in crores)

	VI Plan (1980-85)	VII Plan (1985-90)
a) Original Targets	10.00	49.50
b) Revised Targets (consequent upon mid term appraisal)	19.58	92.70

TURNOVER.

4.5. During the V and VI Plan periods, the annual compounded growth rate of turnover was 26% and 20% respectively. During the VII Plan period it was expected to be 15.5%. It was felt that a 12% growth rate during the VIII Plan period would be an attainable target, considering the past trend and the anticipated turnover of Rs.115 crores in the base year of the VIII Plan period.

(Contd....35)

On this basis, the anticipated turnover during each year of the VIII Plan period is likely to be as follows:-

(Rs. in crores)

	1990-91**	1991-92	1992-93	1993-94**	1994-95	Total
Turnover	115.	126	138	172	181	732
%increase over preceding year.	19.8	9.5	9.5	24.6	5.2	12*

* Annual Compounded growth rate

** Rate revision anticipated to be effected in these two years.

NET PROFIT. 4.6. During the V and VI Plan period, the Net Profit was 28.5% and 34.2% respectively, of the turnover. During the VII Plan period it is expected to be 39.1% of the turnover. Certain favourable factors were responsible for the growth witnessed during the VI and VII Plan periods. There was significant shift in usage of the warehousing capacity from the conventional agricultural inputs/outputs to the storage of industrial/bonded stocks. The Corporation also enjoyed certain favourable conditions whereby it was possible to revise the tariff every alternate year. The present situation, however, is different. The successive drought and other natural calamities in 1986 and 1987 led to a steep decline in utilisation of storage capacity of CWC as a result of large off-takes for the Public Distribution System. The competitive nature of the industry became evident with the flight of customers from the CWC after the last tariff revision in 1987. Further, substantial funds are being provided by the international financial institutions to N.C.D.C./N.D.D.B./NAFED etc. to create captive storage capacities.

4.7. As a consequence, the Corporation has to adopt a more competitive tariff and thus may have to absorb the incidence of inflationary pressures on major components of its operational costs. The Group, therefore, felt that the Corporation may be able to revise its tariff twice only during the plan period. This has, therefore, been assumed in the first and fourth year of the VIII Plan period. Increase in revenue earnings would accrue from the larger capacity, with utilisation ranging between 85% to 90%, barring any unforseen circumstances.

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PROJECTIONS OF NET PROFIT DURING THE 8th PLAN PERIOD.

4.8. The Group considered that in view of the foregoing factors, it may be reasonable to adopt net profit at 32% of the aggregate turnover during the VIII Plan period. Year-wise estimates of profits on this basis are indicated below:-

(Rs. in crores)

	1990-91	1991-92	1992-93	1993-94	1994-95	Total
Net profit	38.50	42.50	46.00	51.00	57.00	235.00
Percentage to turnover	33.5	33.7	33.3	29.7	31.5	32.0

DEPRECIATION

4.9 The gross block of the Corporation and the depreciation provided in VI Plan period and in each year of the VII Plan period is given below:-

	VI Plan period (1980-85)	VII Plan period				
		85-86	86-87	87-88	88-89 (estimate)	89-90 (estimate)
1. Constructed capacity at the end (in lakh MTs)	31.83	36.12	39.43	42.23	44.48	48.53
2. Gross block						
a) Land & godowns	93.57	112.51	120.12	134.91	154.91	188.91
b) Other assets	10.44	12.02	15.50	17.51	23.16	28.91
c) Total	104.01	124.53	135.62	152.42	178.07	217.82
3. Depreciation	8.03	2.37	3.02	3.47	4.00	4.40
b) As percentage to gross block	1.54	1.90	2.23	2.27	2.25	2.02

The depreciation charge during the VIII Plan period is anticipated to be 33.50 crores as per year-wise break-up

(Contd....37)

given below:-

(Rs. in crores)

	1990-91	1991-92	1992-93	1993-94	1994-95	Total
Gross block	248.00	283.00	322.00	366.00	418.00	1637.00
Depreciation	5.00	6.00	6.50	7.50	8.50	33.50

GROSS INTERNAL GENERATION OF RESOURCES DURING THE 8th PLAN PERIOD.

4.10. Based on the tables of anticipated net profit and depreciation given in the preceding paragraphs, the Group estimated the gross internal generation of the Central Warehousing Corporation during the VIII Plan period to be of the order of Rs.268.50 crores as detailed below:-

	1990-91	1991-92	1992-93	1993-94	1994-95	Total
Net profit	38.50	42.50	46.00	51.00	57.00	235.00
Add: Depreciation.	5.00	6.00	6.50	7.50	8.50	33.50
Total: (Gross Internal Generation)	43.50	48.50	52.50	58.50	65.50	268.50

UTILISATION OF INTERNALLY GENERATED RESOURCES..

4.11. The utilisation of internally generated resources of the Corporation would be on dividend payment, loan repayment, financing of additional working capital, purchase of fixed assets, investment in SWCs and expansion of its warehousing capacity. These have been discussed in brief in the following paragraphs:-

DIVIDEND PAYMENT.

4.12. Under Section 5 of the Warehousing Corporations Act, 1962, the equity capital of the Central Warehousing Corporation carries a minimum guaranteed dividend. Upto the Seventh issue of share capital, this minimum guaranteed dividend was 3.5%. Thereafter, for all subsequent issues, a minimum guarantee dividend of 5.5% was prescribed.

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During the VII Plan period, the Central Warehousing Corporation decided to step up the rate of divide taking into account its reserves and availability of funds. Accordingly, the rate of dividend for the years 1986-87 and 1987-88 was stepped up in respect of the fi seven issues from the minimum guaranteed rate of 3.5% to 5%. Having regard to this, the Group felt that the rat of dividend during the VIII Plan period should be uniformally at 5.5% for all issues. Accordingly, the estimated dividend payments during the VIII Plan period wou be Rs.20 crores.

LOAN REPAYMENTS.

4.13. During the VII Plan period, the Central Warehou ing Corporation repaid all its loans due to the Centra Government including an amount of Rs.8.32 crores prematurely. As per the arrangement existing between the FCI and the CWC, the construction of base-depots at 11 centres by the CWC on deposit work basis for the FCI has an inherent scheme for transfer of ownership of the godowns to CWC after 15 years period. Under this arran ment, 50% of the construction cost reimbursed by the FC is considered as repayable loan carrying an interest liability. This amount stood at Rs.9.60 crores as on 31.3.1988. The repayment schedule for this amount is as follows:-

(Rs. in crores)

	1990-91	1991-92	1992-93	1993-94	1994-95	Total
Normal instalments of amount to be repaid to FCI.	0.75	0.85	0.90	0.90	0.80	4.2

However, in view of the fact that this loan carries a heavy element of interest and the liquidity position appearing to be comfortable, it is anticipated that th Corporation will repay its entire loan liability durin the VIII Plan period.

FINANCING OF ADDITIONAL WORKING CAPITAL

4.14. The major component of working capital is th Sundry Debtors. Approximately, 70% of the warehousing income is on credit basis. A two and half months bill ing cycle is considered a normal feature. With reference to the turnover anticipated in each year of the VIII Plan the increase in working capital on account of consequential larger volume of billing is expected to be Rs.11.50 crores. In respect of advances and othe current assets, the Group felt that 10% incremental effect is likely to arise in each successive year.

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Thus, the total requirement of funds to be met out of the internally generated resources for financing the additional requirement of working capital is estimated to be Rs.27.50 crores.

PURCHASE OF FIXED ASSETS

4.15. The cost of acquisition of various assets incidental to the warehousing needs during the VIII Plan period is estimated at Rs.15 crores. In addition, the Corporation would be required to invest in special mechanised cargo handling equipments at the inland container depots, container freight stations and a few of the bonded warehouses being run by the Corporations. It is expected that additional funds of Rs.11.50 crores, approximately, would be required for this purpose. Thus the total requirement for purchase of all the fixed assets is expected to be Rs.26.50 crores.

INVESTMENT IN SWCs.

4.16. Based on the data furnished by the SWCs indicating their anticipated construction activities and outlay thereagainst, Rs.48 crores has been sought by way of equity contribution from the two share holders viz., the Central Warehousing Corporation and the respective State Governments. The capacity expected to be constructed by SWCs, based on the assessment made by another Sub-Group of the Working Group is 15 lakh MTs as against 28.80 lakh MTs based on the data received from all the SWCs. Accordingly the prorata requirement of the share capital to be issued by the various SWCs during the VIII Plan period is estimated at Rs.25 crores of which CWC would be required to subscribe an aggregate amount of Rs.12.50 crores during the VIII Plan period. The SWCs performance year-wise during VII Plan as also the projections for VIII Plan are given in Appendix.

EXPANSION OF WAREHOUSING CAPACITY.

4.17. The balance available for construction of new warehousing capacity after meeting the outflows on account of dividend, loan repayment, additional working capital, purchase of fixed assets and investments in SWCs would be Rs.173 crores. The construction overheads during the VIII Plan period are estimated at Rs.14 crores. Further a sum of Rs.25 crores is estimated to be spent on acquisition of land for expansion of warehousing capacity leaving a balance of Rs.134 crores for construction of warehouses.

4.18. The contracts awarded during 1988-89 were at an average cost of Rs.500 per MT. On this basis, assuming a 10% rise per annum, the construction cost in 1990-91 is estimated at Rs.605 per MT and in 1994-95, it would be

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Rs.885 per MT. The average for the VIII Plan period would thus work out to Rs.738 per MT. However, in respect of certain specialised structures (Inland Container Depots, Container Freight Stations, some bonded warehouses) the construction cost has been estimated to be higher at Rs.1,500 per MT. Providing for Rs.45 crores towards construction of these special structures of 3 lakh MT capacity, the balance of Rs.29 crores would enable construction of 12 lakh MT capacity at an average rate of Rs.738 per MT.

4.19. Based on the above analysis, the Working Group concluded that the position regarding generation of internal resources of the CWC during the 8th Five Year Plan and its utilisation may be as follows:-

(Rs. in crores)

	1990-91	1991-92	1992-93	1993-94	1994-95	Total
Net Profit	38.50	42.50	46.00	51.00	57.00	235.00
Depreciation	5.00	6.00	6.50	7.50	8.50	33.50
	43.50	48.50	52.50	58.50	65.50	268.50
Dividend	4.00	4.00	4.00	4.00	4.00	20.00
Loan Repayment	2.00	2.00	2.00	2.00	1.00	9.00
Diversion to Working Capital	4.50	5.00	5.50	6.00	6.50	27.50
Purchase of Fixed Assets	4.50	5.00	5.00	6.00	6.00	26.50
Investment in the SWCs	2.50	2.50	2.50	2.50	2.50	12.50
Balance available for expansion of the Warehousing Capacity	26.00	30.00	33.50	38.00	45.50	173.00
Total :	43.50	48.50	52.50	58.50	65.50	268.50

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OTHER RECOMMENDATIONS

4.20. The Working Group considered various suggestions made regarding working of the CWC and SWCs, and concluded that the following recommendations may be examined by the Government further:-

(i) A Permanent Sub-Committee may be constituted including representatives of Central Warehousing Corporation and State Warehousing Corporations. This Sub-Committee should have the task to identify the areas of diversification of activities of the Warehousing Industry, market research and survey and recommend other measures for promotion of the Warehousing Industry. This Sub-Committee could also function as a coordinating agency to ensure that the warehousing capacity is created in even way as to avoid duplication of efforts and investment of funds by different agencies simultaneously.

(ii) The availability of funds for construction of warehousing capacity could be augmented by an increase in the per tonne construction cost presently adopted under the NABARD Refinancing Scheme. . . . Further, the Department of Banking could consider reduction in the rate of interest, commensurate with the rate charged for other priority sectors.

(iii) The Central Warehousing Corporation may examine the possibility of creation of a Central Fund for the purpose of financing, research and development activity as well as providing emergent funds to any State Warehousing Corporation, wherever required. This suggestion was made in the context of the good financial performance of the CWC and SWCs which may prompt the State Governments to utilise the funds of SWCs for other programmes. Such a fund could also be drawn upon by the CWC/SWCs wherever needed on a short-term arrangement basis.

APPENDIX

PERFORMANCE OF STATE WAREHOUSING COAPORATIONS DURING VII PLAN PERIOD (YEAR-WISE) AND THE PROJECTIONS FOR VIII PLAN PERIOD

(Rupees in crores)

	VII PLAN						VIII PLAN
	1985-86	1986-87	1987-88	1988-89	1989-90	Total	1990-95
Capacity constructed (Lakh MTs)	5.28	7.87	5.64	3.45	5.59	27.83	15.00
Capital Outlay including (Cost of land)	28.66	34.95	32.35	24.93	31.26	152.15	104.85
Cost of Const. (Rs. per MT)	543	444	574	723	559	547	699
Sources of Finance							
- Equity Contribution	4.41	5.33	4.65	8.35	9.85	32.59	25.00
- Loans/Subsidy	9.10	17.57	21.56	11.97	15.09	75.29	30.65
- Internally Generated Resources	15.15	12.05	6.14	4.61	6.32	44.27	49.20

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CHAPTER - V

5. Provision of Cold Storage Facilities

MPORTANCE F COLD TORAGE

5.1. The seasonal and perishable nature of potatoes, other vegetables and fruits focuses attention on the need for a market stretch mechanism which can match a discrete production to a more or less continuous demand on the time scale of an agricultural year. The provision of adequate storage, under scientifically controlled conditions, is one such mechanism which could ensure that a crop harvested over a period of one to two months meets a year round market demand for it. In case of some highly perishable commodities such as milk and dairy products, fish and meat, there is no substitute for cold storage. These items have to be stored in cold stores to keep them in edible state for subsequent consumption. In other words, there is no trade off between cold storage and ordinary storage for such commodities. The role of cold storages in cutting down on losses due to spoilage, avoiding gluts and distress sales by growers, reducing transport bottlenecks at the peak period of production, maintenance of quality of the produce, etc., cannot be under estimated.

7TH PLAN S A BASE

5.2. During the Sixth Plan, the need for creation of a large cold storage capacity was emphasised. Since 92% of the total capacity was in the private sector, it was considered desirable to augment the capacity in the cooperative sector. Accordingly, to rectify sectoral imbalances and to help producer members of cooperatives in the storage and marketing of their produce, the National Cooperative Development Corporation (NCDC), with assistance of the World Bank, through the Government of India, organised an additional cold storage capacity of 3.26 lakh tonnes in the cooperative sector.

5.3. At the beginning of the Seventh Plan, the total installed cold storage capacity stood at 50 lakh tonnes (approx.) including 3.70 lakh tonnes in the cooperative sector. For the 7th plan a target of creating an additional capacity of 10.00 lakh tonnes was proposed. As against this target, however an additional capacity of 7.00 lakh tonnes, (including 2.90 lakh tonnes in the cooperative sector) is expected to be added by the terminal year of the 7th plan (1989-90) thus raising the total capacity to 57.00 lakh tonnes (including 6.60 lakh tonnes in the cooperative sector being 11.5% of the total cold storage capacity in the country).

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5.4. Around 93% of the capacity is being utilised exclusively for storage of potatoes, while the balance caters to storage of fruits and vegetables, meat, fish, milk, dairy products etc. Commodity-wise distribution of the cold storage capacity is given below:-

Potato	92.35%
Multipurpose	5.16%
Fruit & Vegetable, etc.	0.36%
Meat and Fish	1.40%
Milk & Milk products	0.73%

ADDITIONAL NEEDS FOR COLD STORAGE CAPACITY FOR 8TH PLAN.

5.5. Keeping in view the present trend of cultivation and production of potato and other fruits and vegetables in the country, the cold storage capacity that would be available by the end of the 7th Plan may not be sufficient to cater to the increasing marketable surplus in some of the pockets where new areas have been brought under patato cultivation and/or where productivity has gone up. Since the development of cold storage industry has been closely linked with the cultivation of potatoes, and 93% of the capacity caters to storage of potatoes alone, the future requirements would necessarily depend on the trend of potato cultivation and its production.

5.6. According to the recommendations of the Potato Development Council, 40% of the total production of potato would be required to be stored in cold storages. Besides, the Potato Development Council had also recommended that a cushion capacity of 10% of the total production of the potato may also be maintained. The recommendation of the Potato Development Council may hold good on an average. The requirement of cold storage accommodation would however greatly depend on the surplus percentage of potatoes in a district or state through directional movement and on seasonality of marketing. Various studies have been carried out with regard to assessment of cold storage surplus. These studies have brought out that the storable surplus is more than 50% of the total production and in certain cases it is even more than 60% of the production. The Working Group however considered that the yardstick may be adopted at 50% of the production of potatoes. On this basis, keeping in view the existing level of production of potatoes at 127 lakh tonnes (1986-87) and projected production at 145 lakh tonnes by the terminal year of 8th plan the existing cold storage facilities of about 57 lakh tonnes which include

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53 lakh tonnes exclusively for potatoes, are considered inadequate to meet the future storage requirements. The Working Group therefore concluded that the cold storage capacity may be substantially augmented to take care of the additional storable surples of 15.00 lakh tonnes. With this addition, the cold storage capacity by the end of the 8th plan would be about 72 lakh tonnes. Of this additional capacity of 15.00 lakh tonnes, 3.00 lakh tonnes may be provided by the cooperatives and the balance 12.00 lakh tonnes by the private sector.

E-WISE ERSAL OF TIONAL CITY.

5.7. Estimated additional requirement of cold storage facilities during the 8th plan is depicted below:-

(in lakh tonnes)

State	Estimated cold storage capacity by 1990	Projected potato production by 1995	Storable surplus @50% of the production	Additional requirement of cold storage capacity by 1995.
Uttar Pradesh	26.00	70.00	35.00	9.00
West Bengal	16.00	38.00	19.00	3.00
Bihar	4.00	14.00	7.00	3.00
Other States	11.00	23.00	11.00	-
	57.00	145.00	72.00	15.00

Since the State of Uttar Pradesh, West Bengal and Bihar account for 85% of the total production of potato in the country, these should require priority of attention for the creation of additional cold storage facilities.

CITY E CREA- BY CWC SWCs.

5.8. The Working Group also considered the feasibility of CWC and SWCs creating cold storage facilities for potatoes and apples, frozen fish and other marine products etc. It was accepted that setting up of cold storage facilities by CWC/SWCs may not be economically viable until these Corporations were allowed to take up trading activities which they could not undertake at present as per the existing functions given in the Warehousing Corporations Act, 1962. It was, therefore, considered that based on the economics to be worked out by CWC, both for itself and SWCs, for cold storage facilities with

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both the alternatives i.e. with trading activities and without trading activities, the Department of Food may consider amending the Act so as to enable these Corporations to take up trading activities so as to ensure full utilisation of the facilities to be provided.

5.9. It was concluded that CWC and SWCs should investigate the feasibility of setting up of multi-purpose cold storage facilities (along with arrangements for transportation under controlled temperature) and assess their economic viability. If, based on this assessment, the cold storage facilities were fould to be economically feasible, the CWC and SWCs together may set up cold storage facilities of about 50,000 tonnes during the 8th plan of which the share of CWC may be around 20,000 tonnes and that of SWCs 30,000 tonnes. This capacity would however be a part of the total capacity of 3.00 lakh tonnes already proposed. In other words, to the extent cold storage facilities are augmented by CWC and SWCs, if f-easible, the additional capacity to be constructed by the cooperative sector should be suitably adjusted.

COLD STORAGE FACILITIES FOR APPLES.

5.10. The need for setting up of cold storage facilities exclusively for apples at certain nodal points in apple growing areas was accepted. It was concluded that the assessment of the requirement may be made by the Cooperatives in this regard, and to begin with, some cold storage facilities (with arrangements for transportation under controlled temperature) with in the over all target of 3.00 lakh tonnes may be set up for apples.

COLD STORAGE FACILITIES FOR FROZEN FISH AND OTHER MARINE PRODUCTS.

5.11. For the export of frozen fish and other marine products, adequate chilling and cold storage facilities be created in the cooperative sector also so that these units are owned by the fishermen themselves and operated to their benefit. The establishment of refrigerated stores at ports is recommended to facilitate storage for short durations to avoid port congestion. These units could be set up by CWC or any other public sector organisations. These capacities will however be so small in size that the same will fall within 15 lakh tonnes capacity envisaged above. This additional capacity could also cater to storage of fruits, vegetable and other processed items.

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STORAGE FACILITIES FOR JAGGERY (GUR).

5.12. The need for special type of storages for jaggery (gur) with inside temperature of around 80°F and relative humidity of 50% in jaggery producing areas was accepted. It was decided that CWC/SWCs may make careful assessment of the requirement and economics of the proposal and, if found feasible, such facilities may be set up by these agencies during the 8th Five Year Plan within the overall target already indicated.

TECHNOLOGY UPGRADATION

5.13. Looking at the high capital cost and the energy intensified nature of refrigerated storage, there was a need for identification and adoption of alternative designs and technologies which were likely to be cost effective, energy efficient and cut down on construction time. The Working Group considered various proposals for technology upgradation and concluded that the following cold storage/refrigeration methods need to be assessed further:

i) 'K-Span' type of construction which may be cheaper than the existing brick masonary RCC construction.

ii) Pre-fab cold storages of factory made insulation panels in place of brick mortars cold storages.

iii) Linkage of the above mentioned designs with mechanical loading and unloading with the help of fork lift trucks as against the manual operations.

COORDINATED APPROACH.

5.14. The Working Group accepted the need for a coordinated approach to marketing of fruits and vegetables. At the base level, primary cooperative marketing agencies/ cold storage societies could arrange for collection and storage of their members' produce and market it. The viability of this arrangement may be assessed keeping in view the consideration that farmers get reasonable remunerative return.

ENCOURAGING ESTABLISHMENT OF COLD STORAGE FACILITIES.

5.15. The Working Group also considered various proposals for encouraging establishment of cold storage facilities. It was concluded that following recommendations should be considered further by the Government:

(i) Institutional term finance should be made available at concessional rates/ subsidy given by the Government for the limited periods for setting up of cold storages in hill areas.

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(ii) State Governments should be requested to ensure uninterrupted electrical supply to cold storages by exempting such units from all kinds of power-cuts.

(iii) The subsidy which was being given earlier in the industrially backward areas under the Central Capital Investment Subsidy Scheme of the Ministry of Industry may be restored for establishment of cold storage facilities.

(iv) The insurance against direct loss or damages to building and machinery and stocks during fire, lightning, etc., which was available at the rate of 1.35 per thousand before 1987 was increased to Rs.3 per thousand from 1987. The Ministry of Finance may be asked to consider reduction in premia for insurance cover to farmers for produce to be held in cold storages.

OUTLAY

5.16. Creation of additional cold storage facilities to the extent of 15.00 lakh tonnes, would involve a total block investment of about Rs.350 crores, @ about Rs.2,400 per tonne. Since a capacity of 3.00 lakh tonnes is being recommended for construction in the cooperative sector, the outlay needed for this purpose would be about Rs.70.00 crores. Assistance may be given to the cooperatives through National Cooperative Development Corporation (NCDC). Necessary outlay may be provided in the outlay of the Department of Agriculture and Cooperation for the 8th Plan, since these facilities are proposed to be created in the cooperative sector.

CHAPTER -- VI

6. Research and Development and Improved Techniques of Foodgrain Storage and Pest Control and their Extension.

INTRODUCTION

6.1. The increase in the production of foodgrains creates additional demands on the improvement of post harvest operations in the pre-marketing and post marketing stages. The operations in the pre-marketing stage include drying, thrashing, winnowing, transportation from the thrashing yard to storage premises, storage, transportation from storage to the market yard, milling, processing and preservation. The operations in the post-marketing stage include grading, assembling, buying and selling, storage, movement, milling, processing and consumer marketing. Storage of foodgrains thus occupies a prominent place both in pre-marketing and post-marketing stages.

STUDY-BASE

6.2. In dealing with a subject having such wide coverage and inter-linked issues, the Working Group was conscious of the latest developments in the R&D work in various institutions/organisations in the country, the extent of application of technologies developed, the availability of inputs and facilities for improved foodgrain storage and pest control and confined itself to special problems of certain areas needing priority attention. The views and recommendations of the Working Group are accordingly brought out in the following paragraphs:

PAST ACHIEVEMENT.

6.3. It will be meaningful to undertake and strengthen research only if development and extension work are taken up and facilities required for the same are created and organised. In respect of foodgrain storage, the Storage & Research Organisation of the Department of Food in the Ministry of Food & Civil Supplies has been able to create such needed infrastructure and implement well coordinated and inter-linked programmes of applied research, experimental development and application of science and technology towards improvement of foodgrain storage and pest control, besides providing technical and financial support to the implementing agencies. The Indian Grain Storage Institute (IGSI) working under the Department of Food has been able to develop certain codes of practices that have proved useful at government and farm levels. The required initial studies before introducing pesticides

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like Malathion, Aluminium Phosphide, Anticoagulants etc., methods of storage of foodgrains under flat storage, improvised flat storage, use of different moisture testers etc., were undertaken by this organisation. For the benefit of farmers, the designs of various storage structures made of metal or non-metal and for use indoors or outdoors, different packings of grain fumigants for easier application, methodoligies for improving certain important traditional storage structures and prototypes of aids for use in training, demonstration and publicity programmes have been developed. Besides, the Institute provides training in storage and inspection of foodgrains to different personnel employed by the State Governments, Food Corporation of India, Central Warehousing Corporation etc. The Department has also established a net-work of 17 Save Grain Campaign teams which are popularising the techniques developed in selected rural areas, providing the necessary data and feed-back to the Institute and also acting as a catalyst for encouraging the State Governments to implement the programmes on a larger scale and with a wider coverage, for which purpose they take part in the meetings of Advisory Committees etc., at the State level also. Under the Save Grain Campaign, the Department of Food has provided financial assistance to State Governments and Union Territories since 1972 in the form of loans or grants-in-aid for undertaking specifically programmes for prevention of foodgrain losses at farm level including supply of metal bins, inputs for improvement of existing storage structures, supply of storage pesticides, establishment of State Government Save Grain Campaign teams and demonstration materials. The Working Group considers it essential to continue and strengthen these programmes in addition to training of rural artisan and rural woman and improvement of storage in tribal areas for providing a stronger base for promoting scientific storage and pest control at the farm level. The Working Group stressed the need for reorganisation and strengthening of existing infrastructure so as to develop appropriate linkage between research and development work done at IGSI and the extension organisation of SGC for better coordination.

CONSTRAINTS.

6.4. The improvement of farm level storage is a gigantic task by itself considering the number of farmers, regional variations in the type of storage adopted, quantum of foodgrains retained at farmers level, availability of materials in interior places and various other factors. The programmes that are currently implemented in this direction need a long duration for yielding the

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desired impact. Problems that cause immediate concern are those faced in the post-marketing states. The government and its agencies are the largest single organisation handling and storing foodgrains and these require priority attention.

RECOMMENDATIONS. 6.5. In this background the Working Group considered various recommendations which could be placed broadly in three categories i.e., Research & Development, Extension and Coordination. In principle, the Working Group has supported the following proposals. However, the Group felt that each R&D recommendation should be examined further in the Government and the firm outlay worked out for each recommendation before it was taken up for implementation. These recommendations are as follows:-

6.5.1. There is an immediate need to introduce newer prophylactic chemicals to replace malathion and DDVP as the stored grain insect pests are getting resistant. Recently pirimiphosmethyl has been registered by the Central Insecticide Board. However, the cost is prohibitive as it was reported to be Rs.500 per litre. Delta-methrin appears to be promising. Final investigations in this regard for getting the same registered for use in grain storage deserves priority.

6.5.2. To replace heavy unmanageable gas proof fabric fumigation covers, alternative material of low density or high density polythene or some other plastic material should be screened for introduction at the earliest.

6.5.3. With the increased cost of wood and non-availability of required types of timber for manufacture of wooden crates, alternative material for substituting the wooden crates requires to be evaluated. The possibility of manufacturing polythene crates keeping in view the cost factor also need to be explored.

6.5.4. For pre-shipment fumigation of foodgrains during export so far only methyl bromide is being utilised. Bromine containing fumigants adversely affect the seed viability and seed vigour. As such the Group felt that magnesium phosphide appears to be a possible substitute. This is a solid fumigant like aluminium phosphide but takes shorter time for disintegration and release of phosphine. This matter may be taken up with R&D organisations and manufacturers.

6.5.5. Effective methods for bird and psocid control need be evolved by Research and Development Institutes like IGSI, IARI and CFTRI, etc.

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6.5.6. Non-chemical methods for control of stored grains insects by oxygen depletion and use of inert gases like carbon dioxide and nitrogen requires to be introduced. Similarly permanent covering of the foodgrain stocks to check cross infestation should be investigated. For this purpose the sealing material and method for sealing the covers should be taken up so as to replace mud plastering and use of sand-snakes.

6.5.7. The use of single dose anti-coagulants with pulse baiting requires to be adopted to replace use of multiple dose anti-coagulants and zinc phosphide. The use of ALP pellets for rat burrow fumigation requires popularisation.

6.5.8. It was realised that there was communication gap between the R&D organisations and the user organisations. A system of periodical, say quarterly or six monthly dialogue, requires to be developed. Considerable work in the field of reduction of Post Harvest losses of foodgrains is being carried out by various Govt./semi-Govt./Universities and Scientific Institutions/Organisations in the Country. The Group felt that countrywide data available should be collected, compiled and kept in a national data bank in the Department of Food.

6.5.9. It was desirable to conduct a study of resistance of various stored insect pests. It was considered that IARI may take up this research programme with the assistance of FCI and CWC. Similar activities could be taken up through some selected agricultural universities.

6.5.10. The agricultural commodities of durable nature like oil seeds, soyabean, tea, coffee, spices, ginger, jaggery, suger, fertilizers, cattle feed etc., have not received adequate attention of R&D organisations. The problems of these commodities require to be investigated as these would be of direct use to the Warehousing Corporations. The code of practices for about 200 commodities have been laid down by the Central Warehousing Corporation on the basis of pragmatic needs. The practice require scientific backing.

6.5.11. Introduction of cleaners, graders and dryers in market yards requires serious consideration.

6.5.12. IGSI may undertake studies in the warehouses of FCI and CWC for switching over to bulk storage of foodgrains in bag storage structures.

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6.5.13. Assessment of losses at farmer, trader, cooperative and corporate levels in specific areas and on commodity basis requires to be made. In case these losses are split into driage and deterioration loss studies, it would provide paramaters for grain quality, handling/quality losses, storage losses, financial and administrative decisions. The losses need to be assessed with reference to moisture content, moisture losses, sliding down in quality, period of storage, season of storage, rodents, birds, mode of weighment etc. to identify the losses contributed by each of these parameters for working out permissible losses during storage.

6.5.14. In various agro-climatic zones, the safe limits of moisture for different commodities required to be studied.

6.5.15. Due to use of combine harvesters, harvesting of paddy, maize and wheat with high moisture content to avoid shattering losses, the need for drier was felt. In fact for North Eastern Region and for kuruvai paddy in Tamil-Nadu, unseasonal rains focussed attention for introduction of driers at the farm level.

6.5.16. As the procurement of total foodgrains in the country during the last 10 years ranged from 12-15% only, the farm level storage improvement programme deserves thurst area approach. This programme could be improved upon by taking concentration of activities in selected villages over a period of 2-3 years when most of the inputs will be supplied either free or on subsidised basis. This approach should be developed in addition to the present activities of the SGC and the disinfestation extension scheme of CWC/SWCs.

6.5.17. The availability of storage insecticides according to the farmers' needs has not so far been cleared by the Central Insecticides Board. The Group felt that keeping in view the farmers' need, the required pesticides for grain storage purposes should be made available to the farmers. For this purpose, the trained manpower by the Departments, CWC etc., should be authorised to take up this programme on custom or service basis or by the Cooperative organisations formed by trained farmers. Such trained groups would also be able to look after the rural godowns suitably provided they are authorised to use storage pesticides.

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6.5.18. The Group recommended for upgradation of Research, Development, Training and Extension activities. For this purpose a technical programme consisting of multi-disciplinary approach in research, training and extension components strengthening the laboratory facilities, expenditure towards engagement of research fellows and supporting secretariat staff and office equipment needed for the smooth functioning of the technical programme worth Rs.1 crore has been worked out for each Research Institute/University of repute in order to carry out time bound programmes. The Working Group considered that Central Assistance to 8 selected Institutes like IARI, CFTRI, State Agricultural Universities may be provided for carrying out central sponsored programmes keeping in view the agro-climatic condition/production/ retention pattern of foodgrains at farm level.

6.5.19. It was also necessary to strengthen the existing set up of Indian Grain Storage Institute. This would include the strengthening of the Institute by taking up construction of engineering workshop, seminar hall, hostels and staff quarters at three field stations of IGSI, strengthening of S&R division in the Department of Food, introduction of science and technology scales and fellowships for Ph.D scholars at UGC scales.

6.5.20. For associating with the State Governments to lay suitable emphasis on scientific storage of foodgrains, some provision of funds in the Central Sector Scheme will have to be made so as to allocate some funds to the State Govts. for taking up this activity on priority basis. The funds could be allocated for storage structures and their improvement, supply of storage pesticides and setting up State farm level storage improvement programme units. It was proposed to make available 5 lakhs . bins each of 0.5 tonne capacity in order to create scientific storage structures of 2.5 lakh tonnes for foodgrains which work out to about 1.6% share of total annual average production of 150 million tonnes.

6.5.21. Programmes relating to provision of inputs, demonstration, training, publicity, extension and stipend including infrastructure support need to be strengthened.

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6.5.22. The Working Group felt that for effective follow up of the various activities to be undertaken during the 8th Plan, there should be a small Group consisting of Officers from Department of Food, IGSI, IARI, CFTRI, FCI, CWC, etc., which could annually review the R&D projects, requirement of pesticides by users and introduction of new technology. This Group could be headed by Food Secretary and various Sub-Groups could be formed to make indepth review of different programmes before the annual review to be undertaken by this Group.

OUTLAY

6.6. The Working Group recommended a total outlay of about Rs.59.00 crores for taking up these programmes during the 8th Plan period. The investment needed for upgradation of R&D and strengthening of Indian Grain Storage Institute etc., may be about Rs.16.50 crores. Similarly, investment needed for improving farm level storage conditions was estimated at Rs.42.50 crores during the Plan period. The programme-wise break-up and the targets proposed to be achieved during the 8th Plan period are given in Appendix.

APPENDIX

PART - A

Investment needed for upgradation of Research and Development & IGSI

(Rs. in crores)

Sl.No.	Item	Estimated cost Rs.	Amount required Rs.
1.	Strengthening Research Institute:		
	i) Engineering Workshop and Seminar Hall at three Field Stations	0.9 x 3	2.70
	ii) Hostel at three Field Stations	0.6 x 3	1.80
	iii) Staff quarters at three Field Stations	0.2 x 3	0.60
	Sub-total		5.10
2.	Introduction of S&T scales and strengthening of S&R Division.	3.0	3.00
3.	Fellowships for Ph.D Scholars at UGC Scales (24 fellows @ Rs.3,000/- per head per month during plan period in the Field of Pest Control, Cereal Chemistry, Agricultural Engineering, Agricultural Marketing and Agricultural Extension)	0.43	0.43
4.	Coordinated Research Project to be undertaken by the Research Institute/Agriculture Universities @ Rs.1 crore (including training of subject matter specialists, Research Associates, Post Graduate Fellowship, training programmes, strengthening laboratory facilities, Secretariat, office expenses and laboratory cum mobile Van)	1 x 8	8.00
	Grand Total		16.53
	Say		16.00

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PART - B

MINIMUM INVESTMENT NEEDED FOR IMPROVING FARM LEVEL STORAGE CONDITIONS.

Sl. No.	Component	Proposed physical target for 8th Plan	Average Rate per unit Rs.	Amount required in crore Rs.
1.	LOANS TO STATE GOVTS. Provision of metal storage bins	3 lakh bins	@ Rs.500/- per unit	15.00
2.	EXTENSION INPUT			
A.	Provision of non-metallic storage structures	2 lakh bins	@ Rs.250/- per unit	5.00
B.	Development of 17 Nucleus villages & Demonstration units	0.25 lakh	@ Rs.2,000/- per unit	5.15
C.	Provision of storage pesticides	--	--	1.00
D.	TRAINING			
i)	Stipend to farmers	15,500 Additional farmers	@ Rs.100/- per head	0.15
ii)	Stipend to volunteers	10 lakhs	@ Rs.50/- per head	5.00
iii)	Honorarium to State Govt. Personnel (V.L.Ws. etc.) for refresher courses.	1.5 lakhs	@ Rs.100/- per head	1.50
iv)	Stipend to Artisans	0.6 lakh	@ Rs.200/- per head	1.20
E.	PUBLICITY			
i)	Wall painting, posters etc.	25 lakhs	--	0.25
ii)	Seminars	25 lakhs	--	0.25
F.	Infrastructure support & other facilities.	--	--	8.00
	Total			42.50

Total Investment	(Rs. in crores)
PART A	16.50
PART B	42.50
	59.00

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CHAPTER - VII

7. Coordination of the Work of Different Agencies Engaged in the field of Construction of Storage Facilities in the Country.

7.1. The Scheme of Warehousing in public sector in India envisages a three tier system. The markets of all India importance are served by the Central Warehousing Corporation, secondary markets of State and district level importance are served by the State Warehousing Corporations and the storage needs at the village/rural level are looked after by the cooperatives. The Central Warehousing Corporation was set up in 1957 under the Agricultural Produce (Development and Warehousing) Corporations Act, 1956 mainly for acquiring, building and running of godowns and warehouses at points of all India importance for storage of agricultural produce, seeds, manures, fertilizers and agricultural implements offered by individuals, cooperative societies and other institutions. Similarly, the State Warehousing Corporations set up under this Act were also entrusted with similar functions of providing storage facilities at points of State and district level importance. The Agricultural Produce (Development and Warehousing) Corporations Act, 1956 was replaced by the Warehousing Corporations Act, 1962 and the functions assigned to the Central Warehousing Corporation and the State Warehousing Corporations are broadly the same under the New Act. The Food Corporation of India was set up in 1965 to undertake purchase, storage, movement, transport, distribution and sale of foodgrains and other foodstuffs. Therefore, with the growing need for maintenance of adequate buffer stocks of foodgrains and the increasing role of Government and the Corporations in the field of grains procurement, the warehousing programme for foodgrains assumed considerable significance and importance by mid 1960s. The construction of godowns for foodgrain storage is being undertaken by a number of agencies both at the Central and State levels. Similarly, the Central and State Warehousing Corporations are taking up construction of godowns for providing storage space for general warehousing, in addition to providing storage facilities for foodgrains.

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7.2. With the establishment of several corporations for providing storage facilities, in 1966, it was felt essential to have close coordination and constant review of programmes of such construction work by the various agencies at Central and State level. This was to ensure not only the optimum utilisation of such warehouses but also to avoid any overlapping or duplication in the construction programmes.

7.3. With this objective in view, the Government set up a Central Storage Committee in 1966 to coordinate the programmes taken up by the Central agencies such as the Food Corporation of India and the Central Warehousing Corporation. The Central Storage Committee is functioning since then under the Chairmanship of the Joint Secretary concerned with storage programmes in the Department of Food, with representatives of FCI, CWC, National Cooperative Development Corporation, Ministry of Railways, Planning Commission, Directorate of Economics and Statistics and CPWD as Members. The construction programmes of each agency at central level were placed before the Central Storage Committee which determined the location and size of godowns, keeping in view the economic viability, the procurement and distribution pattern, felt need of the area, as well as the storage requirement for the maintenance of buffer and operational stocks and streamlining the public distribution system.

7.4. Similarly, at the State level also, it was considered that there should be close coordination in respect of construction programmes taken up by various agencies. For this purpose, the State Governments were addressed in June 1966 suggesting that a State level coordination committee may be constituted in each State with the Development Commissioner as the Chairman, and Managing Director, State Warehousing Corporation, Registrar of Cooperative Societies and representative of Central Warehousing Corporation as Members. Over the course of time, the State level coordination committees were made more broad-based. With the introduction of the scheme for National Grid of Rural godowns, the State Governments were addressed in December, 1983 to make the State level coordination committees even more broad based with Agricultural Production Commissioner as the Chairman and representatives of State Panchayati Raj Department, Food Department, Civil Supplies Department, Cooperation Department, Rural Development Department, Marketing Federation, NCDC, State Warehousing Corporation, Central Warehousing Corporation, Food Corporation of India, Registrar of

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Cooperative Societies and Regional Manager of one of the major national banks as Members. It was also left to the State Governments to co-opt additional Members if they so desired. The State Level Coordination Committees are coordinating the programmes of construction of various agencies at State, District and village level.

7.5. The role of the Central Storage Committee was reviewed by the Government in 1984 and it was considered that the Committee should restrict itself only to macro level planning of its storage capacity and the micro level planning of region-wise and centre-wise distribution of the capacity should be left to the concerned agencies. In other words, the main thrust of the Committee would be on avoiding over-lapping and duplication of efforts by different agencies. Accordingly, the Central Storage Committee was reconstituted by the Government in 1984. This Committee is at present headed by the Joint Secretary in charge of storage in the Department of Food with representatives of CWC, FCI, NCDC, CPWD, Railway Board, Planning Commission and Movement Division in the Department of Food as Members. The terms of reference of the Committee are at present as follows :-

a) To resolve disputes between different agencies in regard to taking up construction by one or more agencies at a centre;

b) To consider all proposals for construction of rail-fed godowns/warehouses for the purpose of examining the feasibility of railway siding facilities only.

7.6. The Working Group noted that after its reconstitution, this Committee has not met at all. At the same time it is a fact that there have been disputes between FCI and CWC on the one hand and the CWC and SWCs on the other hand which have been raised in different fora and have also been referred to Government from time time. In this background the Working Group recommended that the role of the Central Storage Committee and its constitution may be carefully scrutinised and suitably amended with a view to making it really effective for resolving disputes among different agencies. In this connection the Working Group also recommended enlargement of this Committee by adding representatives from the Department of Fertilizer and one from some public sector fertilizer companies. Alternatively, representatives of concerned organisations could be co-opted as Members as and when proposals relating to them were brought before the Committee for consideration.

CHAPTER - VIII

8. Financial Implications

8.1. The implementation of the recommendations of the Working Group would involve the following financial outlays during the 8th Five Year Plan :-

(Rs. in crores)

Sl. No.	Scheme	Plan Outlay	Internal Resources
1.	Construction of godowns by FCI	100.00	--
2.	Construction of warehouses by CWC.	173.00	173.00
3.	Contribution by CWC to share-capital of SWCs	12.50	12.50
4.	Construction of cold storage capacity	70.00	--
5.	Post Harvest operations (Storage and Research and Extension)	59.00	--
		414.50	185.50

So far as SWCs are concerned, outlay shows the Central Plan component only. In addition, Rs.12.50 crores would be contributed by State Governments towards the share capital of SWCs. This outlay would be reflected in the respective State plans.

8.2. Therefore, the total Plan outlay required under the storage and warehousing during the 8th Plan would be to the extent of Rs.414.50 crores of which the internal resources are expected to be about Rs.185.50 crores.

8.3. Of the total outlay indicated above, the outlay for the Department of Food would be Rs.344.50 crores of which internal resources would be to the extent of Rs.185.50 crores. The remaining outlay of Rs.70.00 crores for provision of cold storage facilities would require to be provided in the Plan outlay for the Ministry of Agriculture (Department of Cooperation) for provision of cold storage facilities.

CHAPTER -- IX

9. Summary of Conclusions/Recommendations

9.1. The Working Group assessed the requirement of storage capacity as on 1-7-1994 at 23.00 million tonnes. The storage capacity expected to be available for foodgrains as on 1-4-1990 was assessed at 25.50 million tonnes. It was, therefore, concluded that no additional storage capacity was required for foodgrains during the 8th Plan on macro level basis (Para. 2.7.).

9.2. Some additional capacity would have to be planned for foodgrain storage on micro level basis to take care of regional imbalances and the need to create adequate capacity in the remote, hill and other inaccessible areas. This capacity was assessed at 8.23 lakh tonnes. Besides, spill-over works of 1.29 lakh tonnes would be completed by FCI at 14 centres during the 8th Plan(2.8. & 2.9.).

9.3. The additional fertilizer storage capacity to be constructed by CWC and SWCs should be approximately 10.00 lakh tonnes (2.11).

9.4. The basic role of FCI to hold the buffer and operational stock was not expected to undergo any change during the 8th Plan (2.13.).

9.5. The Working Group did not consider it appropriate to make any recommendation at this stage for creation of bulk storage and transportation facilities till an integrated system from procurement to distribution had been worked out and its economic viability assessed (2.13.).

9.6. No additional construction by the private sector for central pool stocks may be necessary (2.15.).

9.7. The agency-wise distribution of additional capacity of 8.23 lakh tonnes was determined at 2.00 lakh tonnes each for CWC and 16 SWCs taken together and the balance 4.23 lakh tonnes by FCI (2.16. & 3.5.).

9.8. The total outlay needed for FCI during the 8th Plan was estimated at Rs.100 crores for completion of 4.23 lakh tonnes of new capacity, 1.29 lakh tonnes of spill-over works and 9 railway sidings (2.17.)

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9.9. Centre-wise allocations of capacity of 8.23 lakh tonnes, railway siding proposals and spill-over works recommended are in Appendices - II, III & IV to Chapter II.

9.10. The allocation of fertilizer storage capacity was determined at 4.24 lakh tonnes for CWC and 6.00 lakh tonnes for SWCs.(3.6.).

9.11. Additional custom bonded warehouses capacity was assessed at 4.20 lakh tonnes for CWC and 1.00 lakh tonnes for SWCs during the 8th Plan (3.7.).

9.12. Additional facilities for inland container depots/ container freight stations have been recommended at 2.00 lakh tonnes for CWC (3.8.).

9.13. Additional storage capacity for jute and cotton has been recommended at 1.00 lakh tonnes for CWC and 2.00 lakh tonnes for SWCs (3.9.).

9.14. Additional general warehousing requirement for other commodities has been assessed at 1.93 lakh tonnes for CWC and 4.52 lakh tonnes for SWCs (3.10.).

9.15. In working out the additional storage requirement, capacity utilisation for CWC has been assumed at 95% and for SWCs at 85% (3.11.).

9.16. The total additional storage requirement for CWC and SWCs has therefore been worked out at 15.00 lakh tonnes each (3.12.).

9.17. CWC would finance its construction programme and contribute towards the equity capital of the SWCs from its internal resources, without any budgetary support from the Government (3.13.).

9.18. Warehousing Corporations should make arrangements for unitisation and containerisation for foodgrains, fertilizers and cement stock(3.14.)(a).

9.19. Public Sector organisations should increasingly use the warehousing facilities available with Warehousing Corporations instead of creating their own captive capacity or going in for private capacity (3.14.)(b).

9.20. Amendment to Warehousing Corporations Act, 1962, to enable the Warehousing Corporations to take up trading activity may be considered by the Government (3.14.)(d).

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9.21. Centre-wise distribution of the capacity to be constructed by CWC and allocation of shares to each SWC from the total recommended capacity of 15.00 lakh tonnes may be undertaken by CWC (3.15.).

9.22. Generation of gross internal resources by CWC during the 8th Plan has been assessed at Rs.268.50 crores. After meeting the requirement of payment of dividend (Rs.20 crores), loan payment (Rs.9.00 crores), diversion to working capital (Rs.27.50 crores) and purchase of fixed assets (Rs.26.50 crores), CWC would be left with funds to the extent of Rs.185.50 crores of which Rs.12.50 crores may be required for investment in SWCs and the balance Rs.173.00 crores may be utilised for expansion of its own warehousing capacity. This would enable the Corporation to fully finance the capacity of 15.00 lakh tonnes (4.18. & 4.19.).

9.23. There should be a sub-Committee with representatives of CWC and SWCs to identify the areas of diversification of activities, market research and survey and recommend other measures for promotion of the warehousing industry. This Committee would also function as a coordinating agency for CWC and SWCs (4.20)(i).

9.24. The Department of Banking may consider reduction in the rate of interest for loans given to Warehousing Corporations for financing construction programme. This rate should be commensurate with the rate charged for other priority sectors (4.20)(ii).

9.25. The feasibility of creation of a central fund for the purpose of financing research and development and providing emergent funds to any SWC whenever required may be examined by CWC (4.20.)(iii).

9.26. The cold storage facilities may be augmented by 15.00 lakh tonnes during the 8th Plan of which 12.00 lakh tonnes may be provided by the private sector and 3.00 lakh tonnes by the public sector, particularly the cooperative societies. The broad break-up of this additional capacity would be 9.00 lakh tonnes in Uttar Pradesh and 3.00 lakh tonnes each in West Bengal and Bihar (5.6. & 5.7.).

9.27. The feasibility of CWC and SWCs creating cold storage facilities may be examined by these Corporations with both alternatives i.e. if they are allowed to undertake trading activity and without trading activity (5.8.).

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9.28. If the analysis shows that such units would be economically viable, CWC and SWCs should further examine the feasibility of setting up multi-purpose cold storage facilities. If economically feasible the total capacity to be created by CWC and SWCs during the 8th Plan for this purpose may be restricted to 50,000 tonnes of which the share of CWC may be about 20,000 tonnes and that of SWCs 30,000 tonnes. This capacity should however be a part of the total capacity of 3.00 lakh tonnes recommended for public sector (5.9.).

9.29. Cooperatives may make assessment of the requirement of cold storage facilities for apples and to begin with, set up limited cold storage facilities with arrangement for transportation under controlled temperature within the overall target of 3.00 lakh tonnes (5.10.).

9.30. Adequate chilling and cold storage facilities to be created in the cooperative sector for exporting frozen fish and other marine products so that these units are owned by fishermen and operated for their benefit(5.11)

9.31. Establishment of refrigerated stores at ports is recommended for short durations to avoid port congestion (5.11.).

9.32. CWC and SWCs may assess the requirement and economics of the proposal for special type of storage for jaggery. If found feasible, such facilities may be set up by these agencies within the overall target recommended for these Corporations (5.12.).

9.33. The Working Group concluded that the following cold storage/refrigeration methods need to be assessed further :-

i) 'K-Span' type of construction which may be cheaper than the existing brick masonary RCC construction.

ii) Pre-fab cold storages of factory made insulation panels in place of brick mortars cold storages.

iii) Linkage of the above mentioned designs with mechanical loading and unloading with the help of fork lift trucks as against the manual operations. (5.13.).

9.34. The Working Group accepted the need for a coordinated approach to marketing of fruit and vegetables.

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Primary cooperative marketing agencies/cold storage societies may arrange for collection and storage of their members' produce and market it. The viability of this arrangement may be assessed by the cooperatives (5.14.).

9.35. The Working Group also made the following recommendations for encouraging the establishment of cold storage facilities :-

i) Institutional term finance should be made available at concessional rates/subsidy given by the Government for the limited periods for setting up of cold storages in hill areas.

ii) State Governments should be requested to ensure uninterrupted electrical supply to cold storages by exempting such units from all kinds of power-cuts.

iii) The subsidy which was being given earlier in the industrially backward areas under the Central Capital Investment Subsidy Scheme of the Ministry of Industry may be restored for establishment of cold storage facilities.

iv) The insurance against direct loss or damages to building and machinery and stocks during fire, lightning, etc., which was available at the rate of Rs.1.35 per thousand before 1987 was increased to Rs.3 per thousand from 1987. The Ministry of Finance may be asked to consider reduction in premia for insurance cover to farmers for produce to be held in cold storages. (5.15.).

9.36. The total outlay involved for allocation of 3.00 lakh tonnes for cold storage facilities in the public sector was estimated at Rs.70.00 crores @ about Rs.2,400 per tonne. Assistance may be given to the cooperatives through NCDC for this purpose (5.16.).

9.37. New prophylactic chemicals to replace malathion and DDVP need to be evaluated for introduction(6.5.1.)

9.38. Alternative material should be screened to replace existing fumigation covers (6.5.2.).

9.39. Alternative material for substituting wooden crates needs to be evaluated.(6.5.3.).

9.40. The possibility of using magnesium phosphide as a possible substitute to methyl bromide may be explored (6.5.4.).

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9.41. Effective methods for bird and psocid control need to be evolved by R&D Institutes like IGSI, IARI, CFTRI, etc.(6.5.5.).

9.42. Non-chemical methods for control of grain insects by oxygen depletion and use of inert gases need to be considered. Similarly, permanent covering of foodgrain stock to check cross-infestation needs to be investigated (6.5.6.).

9.43. Use of single dose anti-coagulants with pulse baiting for rat control needs to be popularised (6.5.7.)

9.44. The data available for reduction of post harvest losses could be collected in a national data bank and a system of periodical review should be developed (6.5.8.).

9.45. Study on resistance of various stored insect pests needs to be conducted by IARI and selected agricultural universities (6.5.9.).

9.46. R&D steps for development of appropriate warehousing facilities for other agricultural commodities like oil-seeds, soyabean, tea, coffee, spices, ginger, jaggery, sugar, cattlefeed, fertilizers, etc., need to be developed for preparing code of practices (6.5.10.).

9.47. Introduction of cleaners, graders and dryers in market yards requires consideration (6.5.11.).

9.48. IGSI may undertake studies in the warehouses of FCI/CWC for switching over to bulk storage of the foodgrains in the existing bag storage structures(6.5.1

9.49. Assessment of foodgrain losses at different levels need to be made for specific areas on commodity-wise basis (6.5.13.).

9.50. Safe limits of moisture for different commodities in various agricultural climatic zones need to be studied (6.5.14.)

9.51. The need for development and introduction of suitable driers at farm level has been felt (6.5.15.).

9.52. Thrust area approach needs to be introduced by taking up a number of activities relating to post - harvest operations in selected villages over a period of 2-3 years by supply of inputs either free or at subsidised rates (6.5.16.).

(Contd....68)

9.53. Keeping in view the farmers' need, the required pesticides for grain storage purpose should be made available to the farmers. This could be undertaken through trained manpower of the Government Departments or CWC. The cooperative organisations formed by trained farmers should be encouraged to look after the rural godowns by authorising them to use storage pesticides (6.5.17.).

9.54. R&D training and extension activities should be upgraded. Such post-harvest programmes may be undertaken at different research institutes/universities. The Central sponsored programmes may be initiated at 8 selected Institutes like IARI, CFTRI, State Agricultural Universities etc., during the 8th Plan (6.5.18.).

9.55. The possibility of strengthening the existing set up of IGSI, storage and research division in the Department and introduction of S & T scales should be explored(6.5.19).

9.56. Funds should be allocated to State Governments for supply of improved storage structures, pesticides and setting up of State farm level storage improvement programme units (6.5.20.).

9.57. Programmes relating to provision of inputs, demonstrations, training, publicity, extension and stipend including infrastructural support need to be strengthened. (6.5.21.).

9.58. A small group consisting of Officers from the Deptt. of Food, IGSI, IARI, CFTRI, FCI, CWC, etc., should annually review the R&D projects, requirement of pesticides and updating of technology. (6.5.22.).

9.59. The Working Group recommended a total outlay of about Rs.59.00 crores for taking up various programmes relating to post harvest operations during the 8th Plan period. The scheme-wise/programme-wise break up of this outlay is indicated in appendix to Chapter - VI (6.6.).

9.60. The Working Group recommended that the role of Central Storage Committee and its constitution may be scrutinised and suitably amended with a view to making it really effective for resolving disputes among different agencies (7.6.).

9.61. The total outlay recommended by the Working Group for implementation of various recommendations made in this Report was Rs.414.50 crores for the 8th Five Year Plan. Of this outlay, internal resources were assessed at Rs.185.50 crores. The outlay of Rs.70.00 crores for cold storage facilities be provided in the outlay for the Department of Agriculture. The remaining outlay would be for the programmes of the Department of Food related to storage and warehousing (8.1.).

ANNEXURE - I

No.M-12043/3/87-Agri.(
Government of India
Planning Commission

Yojana Bhavan,
Sansad Marg,
New Delhi-110 001.

Dated, the 30th Sept., 1988.

ORDER

Subject: Constitutions of the Working Group on Storage and Warehousing for the formulation of the Eighth Five Year Plan.

In pursuance of the decision taken in the meeting of the Steering Group on Agriculture and Allied Sectors held on the 15th July, 1988, it is proposed to set up a Working Group on Storage and Warehousing under the Chairmanship of Secretary, Department of Food.

2. Composition of the Working Group will be as under :-

(1)	Secretary, Department of Food	-- Chairman
(2)	Joint Secretary (A) Dept. of Food	-- Member
(3)	Joint Secteraty (D&R) Dept.of Food	"
(4)	Joint Secretary (Plan Finance) Ministry of Finance	"
(5)	Representative of the Department of Agriculture and Cooperation	"
(6)	Economic and Statistical Adviser, Dept. of Agriculture & Cooperation	"
(7)	Representative of the Department of Civil Supplies	"
(8)	Representative of the Department of Rural Development	"
(9)	Representative of the Ministry of Food Processing Industries.	"
(10)	Representative of the Ministry of Railways	"
(11)	Representative of the Ministry of Transport	"

(Contd....70)

(12)	Representative of the Department of Economic Affairs (Banking Division)	- Member
(13)	Representative of the National Cooperative Development Corporation	"
(14)	Representative of the Food Corporation of India	"
(15)	Representative of Central Warehousing Corporation.	"
(16)	Managing Directors of State Warehousing Corporations - Punjab, Haryana, U.P. and Andhra Pradesh	"
(17)	Commissioner (S&R), Dept. of Food	"
(18)	Dr.V.G.Bhatia, Adviser Planning Commission	"
(19)	Jt. Adviser (APS), Agriculture Division, Planning Commission.	"
(20)	Director (Storage), Dept. of Food	Member Secretary

3. The terms of reference of the Working Group will be as follows :-

i) To assess the total storage capacity available by the end of the Seventh Five Year Plan and to estimate the additional requirements for the Eighth Plan, giving due regard to the factors like the emphasis on higher agricultural production, needs of the buffer stock and the public distribution system, etc.

ii) To review the role played in this regard by existing organisations like the Food Corporation of India, Central Warehousing Corporation and the State Warehousing Corporation and to suggest improvements in their working.

iii) To assess the needs for the provision of cold storage facilities in the country and to identify the areas and the agricultural commodities for which such facilities should be provided during the Eighth Plan period.

iv) Identification of remote and inaccessible areas where special attention needs to be given for the provision of storage facilities so as to ensure round-the-year supply of foodgrains and other essential commodities to the people.

(Contd....71)

v) To examine the possibility of generation of internal resources by the Food Corporation of India and Central Warehousing Corporation for supplementing funds made available to them through budgetary support.

vi) To suggest a suitable machinery for coordinating the work of different agencies engaged in the field of construction of storage facilities and their utilisation in the country.

vii) To review the on-going programme for research and development and popularisation of improved techniques of Foodgrain storage and Pest control.

4. The Chairman of the Working Group may set up Sub-Groups on important relevant subjects as considered necessary for undertaking in-depth studies and formulation of suitable proposals for the Eighth Five Year Plan.

5. The Working Group may co-opt non-official experts/ representatives of other agencies as may be required.

6. The expenditure of the Members on TA/DA in connection with the meeting of the Working Group will be borne by the parent Department/Ministry/Organisation. The expenditure, if any, in respect of non-official members will be borne by the Dept. of Food, Ministry of Food and Civil Supplies as per the rules and regulations for TA/DA as applicable to the Grade 'I' Officers of the Government of India.

7. The Working Group will submit its final report to the Planning Commission by 15th February, 1989.

SD/-
(J.C.Dangwal)
Director(Administration)
Planning Commission.

Copy forwarded to:
All Members of the Working Group.

Copy also to:
P.S. to Minister of Planning;
P.S. to Minister of State, Planning Commission.
P.S. to Member(M)/Member(A)/Member(C)/Member(B)/ Member(Y)/Member(S).
Secretary (PC)
Special Secretary (PC)
Advisers (PC)/I&M)/(Agri)/(I&CAD).
Consultant (FP).
Joint Advisors (RD)/(APS)/(Agri,).
Deputy Advisers and other Officers of the Agriculture Division.
Section Officer, Agriculture Division.
Heads of all Divisions,
SPA to Dir.(Admn)/SO(Admn-I)

Sd/-
(J.C.Dangwal)
Director (Administration)
Planning Commission.

ANNEXURE-II

LIST OF MEMBERS OF THE WORKING GROUP ON STORAGE AND WAREHOUSING FOR THE FORMULATION OF THE EIGHTH FIVE YEAR PLAN.

1.	Shri B.B. Mahajan, Secretary, Department of Food.	Chairman
2.	Shri M.M.S. Srivastava, Additional Secretary, Department of Food.	Member
3.	Shri R.K. Mathur, Additional Secretary & Financial Adviser, Department of Food.	"
4.	Shri V.R. Iyer, Joint Secretary, Department of Food.	"
5.	Shri N.P. Nawani, Joint Secretary, Department of Food.	"
6.	Shri B.P. Barma, Joint Secretary,(Plan Finance), Ministry of Finance.	"
7.	Shri Mantreshwar Jha, Joint Secretary, Ministry of Finance, Department of Economic Affairs.	"
8.	Shri J.N.L. Srivastava, Joint Secretary, Department of Agriculture & Cooperation.	"
9.	Shri K. Annakeswan, Deputy Chief Director, Department of Agriculture & Cooperation.	"
10.	Shri K.K. Narang, Assistant Economics & Statistics Adviser, Department of Agriculture & Cooperation.	"
11.	Shri S.M. Meena, Director(PD), Department of Civil Supplies.	"
12.	Shri O.P. Behari, Assistant Marketing Adviser, Department of Rural Development, Directorate of Marketing & Inspection.	"

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13.	Shri Satish Chandra, Joint Secretary, Ministry of Food Processing Industries.	Member
14.	Shri Anurag Mishra, Director, TT(F), Railway Board.	"
15.	Shri D.P. Gupta, Chief Engineer (Planning), Ministry of Surface Transport.	"
16.	Shri B.S. Sharma, Chief Director(Storage & Rural Consumers), National Cooperative Development Corporation.	"
17.	Shri A. Mohandas Moses, Managing Director, Food Corporation of India.	"
18.	Shri R.D. Kapur, Managing Director, Central Warehousing Corporation.	"
19.	Shri Bikramjit Singh, Managing Director, Punjab State Warehousing Corporation.	"
20.	Shri H.C. Disodia, Managing Director, Haryana State Warehousing Corporation.	"
21.	Shri S.R. Singh, Managing Director, Uttar Pradesh State Warehousing Corporation.	"
22.	Shri K.L. Narasimha Rao, Managing Director, Andhra Pradesh State Warehousing Corporation.	"
23.	Dr. V.G. Bhatia, Adviser, Planning Commission.	"
24.	Shri M.V. Pavate, Joint Adviser, Planning Commission.	"

(Contd...74)

25. Dr. G.K. Girish,
Joint Commissioner(S&R),
Department of Food. — Member.

26. Shri R.K. Singh,
Director(Storage),
Department of Food. — Member Secretary

(Contd....75)

ANNEXURE-III

CONSTITUTION AND THE TERMS OF REFERENCE OF THE SUB GROUPS.

I) Sub-Group on assessment of additional storage requirement.

A) Constitution:

1. Additional Secretary, Department of Food-Convenor (for the first 3 meeting)
   (Shri M.M.S. Srivastava)
2. Managing Director, Food Corporation of India-Convenor(for the fourth meeting)
   (Shri A. Mohandas Moses)
3. Joint Secretary(D&R), Department of Food
   (Shri N.P. Nawani)
4. Managing Director, Central Warehousing Corporation.
   (Shri R.D. Kapur)
5. Managing Director, Punjab State Warehousing Corporation
   (Shri Bikramjit Singh)
6. Managing Director, Haryana State Warehousing Corporation
   (Shri H.C. Disodia)
7. Managing Director, Andhra Pradesh State Warehousing Corporation
   (Shri K.L. Narasimha Rao)
8. Chief Director(Storage & Rural Consumers), National Cooperative Development Corporation
   (Shri B.S. Sharma)
9. Deputy Chief Director(Coop.), Department of Agriculture & Cooperation
   (Shri K. Annakeswan)
10. Assistant Marketing Adviser, Department of Rural Development
    (Shri O.P. Behari)
11. Director(Traffic Trans), Railway Board
    (Shri Anurag Mishra)
12. Director(Movement), Department of Food
    (Shri J.M. Sahay)
13. Director(Public Distribution), Department of Civil Supplies
    (Shri S.M. Meena)

(Contd....76)

14. Adviser, Planning Commission
(Dr. V.G. Bhatia)

15. Director(Storage), Department of Food- Member Secretary
(Shri R.K. Singh)

3) Terms of reference:

a) To assess the total storage capacity available for foodgrains, fertilisers and other agricultural inputs by the end of the Seventh Five Year Plan and to estimate the additional requirements for the Eighth Plan, giving due regard to the factors like likelyhood of agricultural production, needs of the buffer stock and the public distribution system etc;

b) To review the role played in this regard by existing organisations like the Food Corporation of India, Central Warehousing Corporation and the State Warehousing Corporations and to suggest suitable modifications in this role, if necessary, and measures for improvements in their working;

c) To suggest allocation of additional storage capacity to be constructed for foodgrains, fertilisers and other agricultural inputs during the Eighth Plan amongst various agencies;

d) Identification of remote and inaccessible areas where special attention needs to be given for the provision of storage facilities so as to ensure round-the-year supply of foodgrains, fertilisers etc. and

e) To consider the extent to which private sector could be utilised for providing the additional capacity required during the Eighth Plan period and suggest suitable measures to ensure construction of this capacity by the private sector.

II) Sub-Group on additional requirement of General Warehousing

A) Constitution:

1. Managing Director, Central Warehousing Corporation-
(Shri R.D. Kapur) Convenor

2. Director (Traffic Trans), Railway Board
(Shri Anurag Mishra)

3. Representative of Ministry of Surface Transport
(Shri D.P. Gupta, Chief Engineer)

4. Representative of Ministry of Commerce

(Contd.... 77)

5. Representative of Planning Commission

6. Representative of Central Board of Excise and Customs

7. Director(Storage), Department of Food (Shri R.K. Singh)

8. Representative of Food Corporation of India

9. Representative of Department of Fertilisers

10. Commercial Manager, Central Warehousing Corporation (Shri K. Vishwanathan) Member Secretary

B) Terms of reference:

a) To assess the total general warehousing capacity (including that for sugar) available by the end of Seventh Five Year Plan and to estimate the additional requirements for the Eighth Plan;

b) To review the role played in this regards by CWC and SWCs and to suggest improvements in their working;

c) To suggest allocation of additional warehousing capacity to be constructed during the Eighth Plan amongst CWC and SWCs;

d) To consider the role which private sector could play for providing additional warehousing facilities during the Eighth Plan period and suggest suitable measures to ensure construction of this capacity by the private sector.

III) Sub-Group on provision of cold storage facilities

A) Constitution:

1. Joint Secretary in charge of Coop. in Department of Agriculture & Cooperation-Convenor (Shri J.N.L. Srivastava)

2. Jt. Secretary, Ministry of Food Processing Industries (Shri Satish Chandra/Shri R. Gopalan (Deputy Secretary))

3. Director(Storage), Department of Food (Shri R.K. Singh)

4. Adviser(Development Planning), Planning Commission

(Contd....78)

5. Representative of Ministry of Agriculture & Cooperation-Deputy Chief Director (Shri K. Annakeswan)

6. Representative of Department of Rural Development (Shri A.P. Bhatnagar, Director(CSR)).

7. Representative of NAFED (Shri P.R. Nelawade, Manager-Cold Storage)

8. Deputy Director, Horticulture & Fruit Utilisation, Government of U.P. (Shri M.C. Rathi)

9. Jt. Director(Agriculture), Government of Maharashtra (Shri V.D. Patil)

10. Consultant(Refrigeration)- (Shri V.K. Suri) Member Secretary

B) Terms of reference:

a) To assess the needs for the provision of cold storage facilities in the country and to identify the areas and the agricultural commodities for which such facilities should be provided during the Eighth Plan period;

b) To suggest the target for construction of additional storage capacity during Eighth Plan by various agencies-Government, Co-operatives and private-and measures necessary to achieve these targets.

IV) Sub-Group on generation of Internal resources

A) Constitution:

1. Additional Secretary & Financial Adviser, Department of Food- (Shri R.K. Mathur) Convenor

2. Managing Director, Central Warehousing Corporation (Shri R.D. Kapur)

3. Jt. Managing Director, Maharashtra State Warehousing Corporation (Shri M.M. Vaidya)

4. Managing Director, West Bengal State Warehousing Corporation (Shri A.C. Kol)

(Contd...79#

5. Managing Director, Tamil Nadu State Warehousing Corporation
(Shri S.R. Karuppannan)

6. Under Secretary, Department of Economic Affairs (Banking Division)
(Shri V.B. Mathur)

7. Representative of Planning Commission
(Shri S.K. Singh, Consultant-Coop.)

8. Representative of (Plan-Finance, Department) Ministry of Finance
(Shri Babu Rajiv, Director (Plan Finance)

9. Director(Storage), Department of Food
(Shri R.K. Singh)

10. Financial Adviser, Central Warehousing Corporation.
(Shri B. Ashok) Member Secretary

B) Terms of reference:

To examine the possibility of generation of internal resources by the Food Corporation of India, Central Warehousing Corporation and State Warehousing Corporations for supplementing funds made available to them through budgetary support and to estimate these internal resources during Eighth Plan period.

V) Sub-Group on Storage and Development, improved techniques of foodgrain storage and pest control

A) Constitution:

1. Joint Commissioner(S&R), Department of Food-
(Dr. G.K. Girish) Convenor

2. Jt. Manager(Q.C.), Food Corporation of India
(Shri Raja Lal)

3. Manager(Technical), Central Warehousing Corporation
(Shri A.S. Sampath Kumar/Shri M. Maseeh)

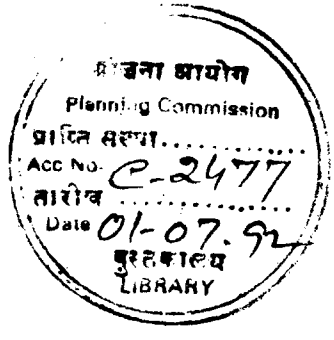
4. Director, Seed Science & Tech., IARI
(Dr. N.C. Singhal)

5. Director, Indian Grain Storage Institute-Hapur
(Dr. Sona Lal)

6. Deputy Director, PPQ &S, Ministry of Agriculture
(Shri N.C. Tuham)

(Contd.... 80)

B) Terms of reference:

a) To review the on-going programme for research and development and popularisation of improved techniques of foodgrain storage and pest control;

b) To suggest improvements in the above for the Eighth Plan period to make these more effective.