

**REPORT
OF
THE WORKING GROUP
ON PORTS
FOR THE
7TH FIVE YEAR PLAN
(1985-1990)**



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**GOVERNMENT OF INDIA
MINISTRY OF SHIPPING AND TRANSPORT
OCTOBER 1984**

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REPORT OF THE
WORKING GROUP ON PORTS FOR THE
7TH FIVE YEAR PLAN

1985 - 1990



OCTOBER, 1984

REPORT OF THE WORKING GROUP ON PORTS

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INTRODUCTION

In their O.M. No.T&C/9(3)/82 dated 25th October, 1982 Planning Commission constituted a Working Group for the Seventh Five Year Plan (1985-90) for the Ports Sector with the following composition and terms of reference:-

Composition:

- | | | | |
|-----|---|-----|----------|
| 1. | Secretary, Ministry of Shipping and Transport. | ... | Chairman |
| 2. | Additional Secretary (Ports), Ministry of Shipping & Transport | ... | Member |
| 3. | Development Adviser, Ministry of Shipping & Transport | ... | " |
| 4. | Joint Secretary (Port Development) Ministry of Shipping & Transport. | ... | " |
| 5. | Financial Adviser, Ministry of Shipping and Transport | ... | " |
| 6. | Representative of Planning Commission... (Transport Division). | ... | " |
| 7. | Representative of Planning Commission... (Perspective Planning Division). | ... | " |
| 8. | Representative of Department of Coal | ... | " |
| 9. | Representative of Ministry of Commerce. | ... | " |
| 10. | Representative of Ministry of Agriculture. | ... | " |
| 11. | Representative of Ministry of Steel and Mines. | ... | " |
| 12. | Representative of Department of Heavy Industry. | ... | " |
| 13. | Representative of Department of Petroleum. | ... | " |
| 14. | Representative of Department of Chemicals and Fertilizers. | ... | " |
| 15. | Representative of Ministry of Railways. | ... | " |
| 16. | Representative of Ministry of Finance (Plan Finance). | ... | " |

17. Representative of Ministry of Defence. Member
18. Representative of the National Productivity Council. "
19. Representative of Department of Science & Technology. "
20. Deputy Secretary (Port Development)...Convenor.
Ministry of Shipping and Transport.

Terms of Reference :

- (1) To assess the projections of traffic under major commodity heads expected to materialise at different ports during each year from 1985-86 to 1990-91.
- (2) To assess the requirement of additional capacity at different ports to handle efficiently the traffic expected to accrue.
- (3) To assess the requirement of funds for different ports to enable creation of additional capacity as assessed.
- (4) To identify the major schemes at different ports which need to be incorporated in the Five Year Plan period 1985-90 taking into account the Master Plan prepared by the individual ports.
- (5) To assess projections of container traffic at different ports and the requirements of additional facilities and funds for dealing with such traffic.
- (6) To identify the position regarding internal resources at different ports.
- (7) To assess the requirement of additional handling facilities to be set up by user Ministries/Organisations for expeditious handling of the expected projections of their commodities.

- (8) To suggest measures for maximising the utilisation of existing capacity in the sector.
- (9) To make recommendations in regard to any important policy issue pertaining to capacity utilisation, investments, etc. and allied matters.

2. Consequently on November 5, 1982, the Ministries concerned were requested to nominate their representatives to serve on the proposed Working Group for the Ports Sector. On receipt of the nominations from various Ministries, a meeting of the Working Group was held on 2 February, 1983. At this meeting, it was agreed that three Sub-Groups on PCL, Coal and Iron-On and containerisation be constituted by the Ministry of Shipping and Transport.

Accordingly, the aforesaid Sub-Groups were constituted under the Chairmanship of Joint Secretary (Ports), Development Adviser and Additional Secretary (Ports) respectively. These Sub-Groups, however, could not progress much due to various reasons such as sad demise of then Development Adviser and transfer of Secretary (Transport) and Additional Secretary (Ports) who got assignments elsewhere. Hence no reports were submitted by these Sub-Groups.

3. While reviewing the progress of the formulation of the Seventh Plan for ports on 8.11.1983, the present Secretary (Transport) suggested that the draft Plan may first be prepared in a conventional manner by a small group of officers from within the Ministry. Accordingly, a Sub-Group consisting of Deputy Secretary (PD) (Shri D.C. Ahir), Director (Development) (Shri T.R. Subramanian) and Director (Mechanical) (Shri A.B. Thakur) was constituted for

this purpose. This Sub-Group held discussions with the user agencies on the traffic projections for the Seventh Plan period on 30th November, 2nd December and 14th December, 1983. Shri V.P.P. Rao, Joint Director, Transport Research was also associated with these discussions. The Sub-Group later visited various ports for on the spot discussions with the Port Officers. The Ports of Bombay, Madras, Mormugao, New Mangalore, Visakhapatnam and Calcutta were visited between 3rd January and 8 February, 1984. The discussions with the Kandla Port Officers were held at Bombay and with the Tuticorin Port Officers at Madras during the Sub-Group's visits to Bombay and Madras respectively. Discussions with the Officers of Cochin and Paradip ports were held in New Delhi.

4. The draft report as prepared by the Sub-Group was considered by the Working Group at its meeting held on 21-4-1984.

5. In pursuance of the discussions at the aforesaid meeting a Sub-Group was set up to finalise the draft document in consultation with the user Ministries and the Planning Commission. Composition of this Sub-Group was as follows:-

- (1) Shri S.S. Shukla,
Financial Adviser(Transport) Chairman
- (2) Shri H.N. Fotedar,
Managing Director,
Indian Ports Associations.
- (3) Shri A.B. Thakur,
Director (Mechanical),
Ministry of Shipping & Transport.

- (4) Shri H.D. Sethi,
Deputy Adviser (Transport),
Planning Commission.
- (5) Shri R.C. Dubey,
Deputy Secretary,
Ministry of Commerce.
- (6) Shri D.C. Ahir,
Deputy Secretary (PD),
Ministry of Shipping & Transport.
- (7) Shri T.R. Subramanian,
Director (Development),
Ministry of Shipping & Transport.

6. The Sub-Group accordingly entered upon this task and after four meetings, finalised the Report, which also includes proposals for the 7th Five Year Plan of the Dredging Corporation of India Ltd., Visakhapatnam, a Public Sector Undertaking and the development schemes of Andamans Lakshadweep Harbour Works and Minor Ports Survey Organisation.

7. The draft report was discussed by the Working Group at its meeting held on 17th August 1984 and it was agreed that the draft report of the Working Group may be modified by the same sub-group, but under the Chairmanship of Sri. A. Ananthakrishnan, DA(Ports) in the light of the decisions taken at the meeting. It was further agreed that the report after finalisation may be submitted to the Planning Commission after the approval of the Secretary (Transport). Accordingly necessary changes had been made and the report has been approved by the Secretary (Transport), and

Chairman of the Working Group. List of participants who attended the meeting can be seen at Annexure-~~Dr.~~

8. Arising out of the discussions held in the Working Group meeting held on 21-4-1984, a Sub-Group under Development Adviser (Ports) was also set

up to go into the question of identifying suitable minor ports in each Maritime State which could be developed to cater to the requirements of their hinterland and also play a complementary role to major ports. Besides Sri A. Ananthakrishnan, Development Adviser (Ports), the Sub-Group comprised the following :-

- (1) Shri S.L. Verma,
Secretary,
Port Department,
Gujarat Government,
Gandhinagar, Gujarat State.
- (2) Shri H.D. Sethi,
Deputy Adviser (Transport),
Planning Commission.
- (3) Shri R.C. Dubey,
Deputy Secretary,
Ministry of Commerce.
- (4) Shri T.R. Subramanian,
Director (Development),
Ministry of Shipping and Transport.

This Sub-Group will submit its report separately.

List of participants at the meeting of Working Group for Ports Sector for VII Five Year Plan held on 17-8-1984

MINISTRY OF SHIPPING AND TRANSPORT

1. Shri Prakash Narain, Secretary In Chair
2. " P.M. Abraham, Addl. Secretary.
3. " P.V. Rao, Joint Secretary.
4. " A.B. Thakur, Development Adviser (SBR)
5. " T.R. Subramanian, Director (Development).
6. " A.N. Saxena, Director (Finance).
7. " D.C. Ahir, Deputy Secretary.
8. " T.R. Natarajan, Under Secretary.

PLANNING COMMISSION

1. Shri K.L. Thapar, Adviser (Transport).
2. " H.D. Sethi, Deputy Adviser.

MINISTRY OF ENERGY (DEPTT. OF COAL)

1. Shri P.K. Lahiri, Joint Secretary.

MINISTRY OF FINANCE (PLAN FINANCE DIVISION)

1. Shri V. Subramanian, Deputy Secretary.

RAILWAY BOARD:

1. Shri H.S. Aggarwal, Director (Planning)
2. " R.C. Sharma, Jt. Director (Transportation)
3. " S. Raghunathan, Dy. Director (Marketing).

MINISTRY OF COMMERCE:

1. Shri R.C. Dubey, Deputy Secretary.
2. " R. Sethuraman, Under Secretary.

MINISTRY OF AGRICULTURE:

1. Shri M.I. Chatterjee, Jt. Commissioner (Port. S&D)

CENTRAL ELECTRICITY AUTHORITY:

1. Shri C.P. Jain, Chief Engineer.

MAJOR PORT TRUSTS:

1. Shri K.K. Uppal, Chairman, Bombay Port Trust.
2. " T.C. Dutt, Chairman, Calcutta Port Trust.
3. " R.K.R. Gonela, Chairman, Visakhapatnam Port Trust
4. Dr. D. Babu Paul, Chairman, Cochin Port Trust.
5. Shri M.N. Buch, Chairman, Kandla Port Trust.
6. " C. Noronha, Chairman, Mormugao Port Trust.
7. " P.B. Rajagopalan, Dy. Chairman, Nhava Sheva Port Trust.
8. " E.S. Rajabather, Chairman, New Mangalore Port Trust
9. " S. Ganesan, Dy. Chairman, Madras Port Trust.
10. " S.K. Kantimatinathan, Dy. Chairman, Tuticorin Port Trust.

GUJARAT GOVERNMENT:

1. Shri S.L. Verma, Secretary (Ports).

CHAPTER - I

APPRAISAL OF THE SIXTH FIVE-YEAR
PLAN (1980-85) - MAJOR PORTS

I. Plan Outlay

1.1 Initially, an allocation of Rs. 531 crores, (including Rs. 30 crores for the Nhava Sheva Port Project), was made in the Sixth Five-Year Plan (1980-85) for the development of major ports. Subsequently, a provision of Rs. 15.50 crores for the construction of a fertilizer berth at Paradip Port was transferred from the Plan Outlay of the Department of Chemicals and Fertilizers to the Ports Sector by the Planning Commission. In addition, an amount of Rs. 4.70 crores was also transferred from the plan allocation of the Ship Yard Sector to the Ports Sector for meeting the cost of dredging in the Ernakulam Channel, Cochin, which was earlier allocated to the Cochin Shipyard. Thus, the total Plan Outlay for the major ports in the Sixth Plan came to Rs. 521 crores - excluding Rs. 30 crores for Nhava Sheva.

1.2 During the mid-term review of the Sixth Five-Year Plan, it became necessary to update the Plan provision in the context of cost escalation. Further two major schemes at Madras Port, viz. construction of second oil handling facility at Bharati Dock (Rs. 20.51 crores), and deepening of outer harbour (Rs. 30 crores) had to be included. As a sequel to this, the revised requirement for various major ports during the Sixth Plan period has been assessed as under :-

Port	Original outlay in the Sixth Plan	Revised outlay
(Rs. in crores)		

1. Calcutta	30.30	23.54
Haldia Docks	21.45	14.52
BHRTW	19.73	15.69
Haldia Channel Dredging	11.52	10.92
2. Bombay	68.78	78.79
3. Madras	54.18	104.56
4. Cochin	54.22	60.21
5. Visakhapatnam	71.33	61.71
6. Kandla	46.42	50.35
7. Paradip	60.81	62.71
8. Mormugao	25.05	24.98
9. Tuticorin	25.57	28.49
10. New Mangalore	31.84	31.68
Total:	521.20	568.15

1.3 Nhava Sheva Port Project was earlier estimated to cost Rs. 592 crores. The scope of the project has since been reduced from 8 berths to 6 berths and the sanctioned cost of the project is now Rs. 506 crores. A provision of Rs. 36 crores only has been made in the Sixth Plan, against the original plan provision of Rs. 30 crores.

II. Financing of the Plan

1.4 At the stage of formulation of the Sixth Plan, out of a total outlay of Rs. 521 crores, budgetary support was envisaged to be of the order of Rs. 340 crores; the balance Rs. 181 crores to be met from internal resources of the ports.

Based on actual expenditure incurred during the first 3 years of the Plan, revised estimates for 1983-84 and the Annual Plan allocation for 1984-85, the overall investment in Sixth Plan on major ports, excluding Nhava Sheva Port project comes to about Rs. 568 crores. Out of this amount, the budgetary support will be Rs. 313 crores as against Rs. 340 crores initially planned. Internal resources will be Rs. 255 crores as against Rs. 181 crores indicated at the time of formulation of the Sixth Plan.

III. Physical Progress

1.5 Five schemes sanctioned during Fifth Plan had spilled over to Sixth Plan. 23 new projects were taken up during the Sixth Plan. The status of these schemes are as under :-

Total No. of Projects	28
Already completed	15
Schemes to be completed	9
Schemes to be spilled over to 7th Plan.	4

Details are given in Annexure-I (pp.26-29)

1.6 Eight important projects which have suffered time and cost over-run and reasons thereof are given below :-

(1) Floating Dry Dock (Kandla):

- i) Original Sanctioned Cost ... Rs. 496.00 lakhs
- ii) Date of Sanction ... January, 1979.
- iii) Scheduled date of Completion ... September, 1980.

- iv) Revised/Actual date of Completion October, 1984

The work was awarded on Hooghly Docking and Engineering Co. Ltd., Calcutta, a Govt. of India Undertaking. Due to poor financial condition of the firm and non-availability of requisite steel sections from SAIL, the project got delayed.

(2) 4th Oil Berth (Bombay):

- i) Original Sanctioned Cost Rs. 2448.00 lakhs.
ii) Revised Sanctioned Cost Rs. 3420.00 lakhs.
iii) Date of Sanction 20-8-77
iv) Scheduled date of completion July '82.
v) Revised/Actual date of Completion 21.6.84 (Actual).

The work was awarded to M/s. National Building Construction Company, a Government of India Undertaking. The project delay is attributable to lack of experience of the firm in marine works and poor organisational management of the project as a whole.

(3) Two High Powered Tugs (Bombay):

- i) Original sanctioned cost ... Rs.1020.00 lakhs
ii) Date of Sanction 2-7-80
iii) Scheduled date of completion 30-6-82
iv) Revised/Actual date of Completion Actual: 30.11.83 (First Tug)
..... 22.6.84 (2nd Tug).

The order was placed on M/s. Hooghly Docking and Engineering Co. Calcutta. The scheduled date of

delivery was June, 1982. The main reason for the delay were poor financial conditions of the firm. Secondly, the engines for the tugs was to be supplied by M/s. GRSE and actual delivery was delayed. Besides the firm had to import various components for the craft which also contributed to the delay.

(4) Integrated Port Development Scheme (Cochin):

- | | | | |
|------|-----------------------------------|-----|---------------------------------|
| i) | Original Sanctioned Cost | ... | Rs. 3585.82 lakhs |
| ii) | Revised Sanctioned Cost | ... | Rs. 5540.06 lakhs |
| iii) | Date of Sanction | | 3-7-80 |
| iv) | Scheduled date of Completion | a) | 13.3.83 (For Oil Berth) |
| | | b) | 29.8.83 (For Fertiliser Berth). |
| v) | Revised/Actual Date of Completion | a) | 12.1.84 (Oil Berth Actual) |
| | | b) | March '85 (Fertiliser Berth). |

Construction of field works namely oil berth and fertiliser berth were awarded to M/s. Hindustan Construction Company Ltd., Bombay. As far as oil berth is concerned, there was a delay due to difficult foundation conditions prevailing at the site needing additional soil investigation and some more pile load tests. The oil berth has already been completed in January, 1984 against the scheduled date of March '83 accounting for 9 months delay.

As far as fertiliser berth is concerned, the handling equipments has to be installed by M/s. FACT. The design of the fertiliser berth could not be finalised since M/s. FACT could not furnish their design load parameters for mechanical handling system.

As a result the design of the fertilizer berth could not be initiated as per scheduled date and had to wait for detailed information from M/s. FACT. The civil work of the fertiliser berth is nearing completion and would be completed by October, 1984. With regard to handling system, the tenders had to be re-invited as the tenderer on which the order was to be placed did not agree to the performance guarantee. As a result there was delay in placement of order for installation of mechanical handling system. Now the project is expected to be completed by March, 1985.

(5) Outer Projection Arm (Madras):

i)	Original Sanctioned Cost	Rs. 25.00 lakhs
ii)	Revised Sanctioned Cost	Rs. 919.32 lakhs
iii)	Date of Sanction	24-9-76
iv)	Scheduled date of completion	14-8-81
v)	Revised/Actual date of completion	31-10-85

This scheme involves construction of a breakwater of length of 1005 m and the work was awarded to M/s. ACC Ltd., with the scheduled date of commencement as November, 1978. The main reason for the delay on the part of the contractor is inadequate plant and equipment deployed for the work, poor financial condition and lack of proper and adequate organisational staff.

(6) Installation of 3rd Wagon Tippler(Vizag):

i)	Original Sanctioned Cost	Rs. 701.73 lakhs
ii)	Date of Sanction	22-9-79
iii)	Scheduled date of completion	31-3-82
iv)	Revised/Actual date of Completion	May '84

The Consultants for the project were M/s HDPL. The work of supply and installation for mechanical handling system was awarded to MAMC, a Govt. of India Undertaking. In the design stage, there was a delay of about 6 months because of change in the design of no beetle track and embankment. Further there was a delay of about 12 months for mechanical works due to delay in supply of apron feeder, pans, (geared tugs, travelling suits, conveyor system, which have been subcontracted to other firms.

(7) Second General Cargo Berth (Paradip):

- | | | |
|------|-----------------------------------|------------------|
| i) | Original Sanctioned Cost | Rs. 725.58 lakhs |
| ii) | Date of Sanction | 24-7-79 |
| iii) | Scheduled date of completion | 15.5.82 |
| iv) | Revised/Actual date of completion | October, 1984. |

The work was awarded to M/s. Gammon India Ltd., Bombay. Delay was on the part of the contractor mostly due to poor financial conditions, inadequate mobilisation of plant and equipment, lack of proper organisational staff from the contractor's side. In addition, delay was also due to heavy rains and cyclone experienced by the port which affected the progress of the work, labour unrests and short supply of construction materials like cement and steel.

(9) Fertiliser Handling Plant (Haldia):

- | | | |
|------|------------------------------------|-----------------------------------|
| i) | Original sanctioned cost | Rs. 354.00 lakhs |
| ii) | Revised Sanctioned Cost | Rs. 424.00 " |
| iii) | Date of Sanction | September '76
(Award of work). |
| iv) | Scheduled date of Completion | September '78 |
| v) | Revised/Actual date of completion. | November, 1984 |

The work was awarded to M/s. GRSE, a Government of India Undertaking. The main reasons for the delay was periodical labour problems at site and the disputes arose between M/s. GRSE and Calcutta Port Trust.

1.7 In brief, the reasons for the delay could be categorised as under :

- (i) Lack of experience and organisation staff to execute large marine works by some of the firms.
- (ii) Poor performance of the contractors due to deployment of inadequate plant and equipment for the work.
- (iii) Poor financial status of some of the firms.
- (iv) Scarcity of raw materials like steel and cement.

Even though the timely execution of the projects was a very serious problem in the past, due to concerted measures during Sixth Plan, most of the projects sanctioned in the 6th Plan would be completed within the Plan period itself. The measures taken are :

- a) Advance planning including preparation of tender documents.
- b) systematic monitoring of important projects identifying the causes of delay and initiating corrective measures.
- c) periodical review of work at site by Ministry's senior officers.

However, there are delays in some of the schemes with respect to their target date of completion because of certain factors like

Scarcity of steel, cement etc. delay in getting information/data from user agencies/Departments which are beyond the control of the executing agency as well as Ministry. In general, the performance as far as it relates to implementation of 6th Plan projects could be considered satisfactory compared to previous plans. However, there is still scope to improve the performance during Seventh Plan so as to keep both time overrun and cost overrun as minimum as possible.

1.8 The major schemes relating to creation of additional port capacities/modernisation completed/likely to be completed during the Sixth Plan period are :

- i) Construction of general cargo berths at the ports of Kandla, Mormugao, New Mangalore, Madras, Tuticorin, Visakhapatnam and Paradip.
- ii) POL handling facilities at the ports of Bombay, Cochin, Kandla and Visakhapatnam.
- iii) Fertiliser handling facilities at the port of Cochin.
- iv) Construction of a container terminal at Madras and acquisition of container handling equipments for the ports of Bombay, Madras and Cochin.

1.9 At the end of the Sixth Plan, all pre-1980 schemes will get completed. Out of the schemes sanctioned during the current Plan, only a few schemes are expected to spill over to the Seventh Plan. In addition, some of the Schemes which might be sanctioned during 1984-85 will spill over to the Seventh Plan. The major schemes that will spill over to the Seventh Plan are comprehensive schemes for improvement of drafts in the Hooghly Estuary, fertiliser berth at Paradip, second oil jetty at Haldia (yet to be sanctioned); second oil jetty at Madras and deepening of outer harbour, Madras and the construction of Nhava Sheva Port.

IV. Financial Progress

1.10 During the Sixth Plan, financial progress on port development schemes other than Nhava Sheva has been as under :-

<u>All Ports</u>			
<u>(Rs. in crores)</u>			
<u>Y e a r</u>	<u>Outlay</u>	<u>Expenditure</u>	<u>Percentage</u>
1980-81	97.74	66.67	68.0
1981-82	99.58	87.02	87.4
1982-83	117.31	133.59	113.9
1983-84	146.82	117.84	80.26

Port-wise financial performance is given in the Statement (Annexure-II).(pp.30-31)

V. Port Capacities and Traffic handled

1.11 The capacity of a port is the aggregate capacity of individual berths depending upon the type of commodity handled at that berth. There are a wide range of factors which influence the capacity of these berths.

The capacity of a general cargo berth is dependant on various factors, such as length of the berth, draft available, occupancy, the worker's productivity and area of the shed adjoining the berth, rate of clearance, nature and type of the cargo and its parcel size, cargo handling equipment available etc. In case of the capacity of bulk or mono commodity berths like iron ore, POL, fertiliser material etc. the berth capacity can be more easily determined largely based on the cargo vested size and the rated capacity of the equipment provided.

In view of the wide range of factors involved in assessing the capacity of a general cargo berth, a rough assessment is generally made with reference to the length of the quay and productivity per meter length of quay. Productivity of about 600 tonnes per annum per meter of berth is generally considered and multiplied by the length of the berth to arrive at the annual throughput. At most of the Indian ports, the old facilities provide for berth length of 150 m whereas the facilities created during the 5th and 6th Plans, the length of the berths is of the order of 200 m. As per the above norm, the capacity of the general cargo berth would range between 90,000 tonnes and 1.2 lakh tonnes per annum. Major Ports Commission had recommended that the capacity of the general cargo berth could be taken as 150,000 tonnes with 75% berth occupancy as a suitable norm for the Indian Ports. However, the Major Port Commission had suggested that ports should endeavour to handle about 2 lakh tonnes of general cargo per berth annually.

The capacity as indicated for general cargo portwise in the table vide para 4.7 has been assessed taking into consideration a berth occupancy of 75% and handling rate ranging from 600 tonnes to 1200 tonnes per day depending upon the type and nature of commodity handled. For example, a cargo berth with a rate of handling of - 600 tonnes per day and taking 75% of 330 working days, the berth capacity would be $600 \times 250 = 1.5$ lakh tonnes. If the rate of handling

goes up to 1000 tonnes/day (if major part of the general cargo berth is in bulk form like fertilizer (finished), cement steel), the capacity of berth would be 2.0 to 2.50 lakh tonnes.

In the case of bulk cargo, where fully mechanised handling facilities have been provided, assessment of capacity has been based on the berth occupancy rate of 50% to reduce waiting time for vessels and the rated capacity of the mechanised installations.

1.12 The aggregate capacity at the beginning of the Sixth Plan was 101.31 million tonnes. At the end of Sixth Plan the capacity planned to be achieved was 132.46 million tonnes. Portwise as well as commoditywise breakup are given in the following tables:

P o r t		Port capacity as anticipated by 31.3.1985 (in million tonnes)
1.	Calcutta/Haldia	18.26
2.	Paradip	4.85
3.	Visakhapatnam	16.65
4.	Madras	16.05
5.	Tuticorin	5.45
6.	Cochin	7.05
7.	New Mangalore	9.30
8.	Mormugao	16.15
9.	Bombay	25.25
10.	Kandla	13.05
Total:		132.46

Commoditywise breakup of Port capacities

Commodity : Port capacity as anticipated
by 31.3.1985 (In Million tonnes)

P O L	52.25
Iron Ore	45.50
C o a l	6.25
Fertilizer	4.20
General Cargo	<u>24.26</u>
Total:	132.46

The Working Group on Seventh Plan has reassessed the port capacity by the end of Sixth Plan at 136.73 million tonnes representing an increase of 35.42 million tonnes (36.5%). Commoditywise capacity is 41.50 million tonnes in Iron Ore, 59.25 million tonnes in POL, 6.25 million tonnes in Coal, 3.90 million tonnes in Fertiliser, 22.35 million tonnes in Break-bulk cargo and 3.48 million tonnes in containers.

1.13 As against the traffic of 78.5 million tonnes handled in 1979-80, the volume of traffic to be handled in the last year of the Sixth Plan (1984-85) is likely to be 115.00 million tonnes. This represents an increase of about 46.5%.

The major ports of India handled in the aggregate a throughput of 100.04 million tonnes of cargo against the aggregate capacity of 114.86 million tonnes at the end of 1983-84.

which is expected to increase to 115.00 and 136.73 million tonnes respectively at the end of the Sixth Five Year Plan viz. 1984-85. It is evident that the ports could have handled even higher volumes of traffic than they actually did. It is not possible to quantify the likely increase in traffic and consequently the rate of utilization of port facilities but a legitimate inference can be drawn that if the shipping industry had not continued to remain seeped in an acute phase of depression, the outlook would have been better. Though the international freight market is showing some signs of buoyancy it would be premature to say that the worse is over. Capacity utilization of dedicated facilities for bulk commodities like iron ore has been poor largely because the steel industry has been bedevilled by a demand recession globally.

VI. Ports Sector as a whole

1.14 The physical progress of the Schemes relating to the Dredging Corporation of India and ALHW as well as utilisation of funds during the Sixth Five Year Plan in respect of the same is given in detail in Chapters IX and X respectively. Utilisation of funds for the ports sector as a whole during the Sixth Plan is as under :

(Rs. in crores)

Organisa- tion.	Original outlay.	Revised outlay	Revised outlay for first 4 years	Actual expen- diture during 1980-81 to 1983-84	%age uti- lisa- tion	Out- lay for 1984- 85
Major Ports	521.20	568.15	464.22	404.35	87.1	163.03
D.C.I.	20.00	30.00	27.35*	15.27	55.83	2.65
ALHW	17.00	18.09	14.83	14.31	96.49	3.26
MPSO	3.00	1.91	1.17	1.08	92.31	0.74

*Outlay included an element of Rs. 9.66 crores on customs duty which is not payable for the time being.

VII. Berthing facilities and Drafts Available

1.15 As a result of implementation of Sixth Plan developmental projects, the sizes of ships that could be accommodated and the drafts available at the major ports are indicated below :-

Contd...

STATEMENT SHOWING BERTHWISE DRAFTS AND SHIP SIZES
HANDLED AT THE MAJOR PORTS

Ports	No. of Berths	Draft (In Metres)	Permissible L.O.A. (In metres)	Tankers	Bulk Carriers	Ship Sizes - DWT	
						General Cargo	General Cargo
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
Kandla	6 (General Cargo)	9.14-9.75	225	--	--	18000 to 22,000	--
	2 (Oil Jetties)	9.14 10.36	191 213	26000 32000	--	--	--
Vadinar (S.B.M.)		22.00	--	V.L.O.C. short loaded	--	--	--
Bombay	23 (21 effective (P&V Dock)	7.00	152	--	--	Less than 10,000	--
	27 (Indra Dock)	7.50 to 10.36	203	--	--	22000	--
	3 Oil Jetties	10.80	213	40000 to 53000	--	--	--
	1 (Butcher Island)	12.70	228	87000 short loaded to 78000	--	--	--
Mormugao	3 (General Cargo)	7.00 to 8.20	168	--	--	12000	--
	(Multipurpose General Cargo)	10.50	--	--	--	22000	--
	1 (Iron Ore)	12.00	260	--	6000	--	--
	1 (Oil Berth)	10.40	228	Fully loaded 35000 or short loaded 60000	--	--	--

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
				23	Tanker	Anchor	Grade
Mangalore	4	(General Cargo)	9.15	183	--	--	18000
		(Oil Jetty)	9.75	183	30000	--	--
		(Iron Ore)	12.50 (Restricted to 10.00 m)	--	--	60000	--
Cochin	9	(General Cargo)	9.14	146 to 213	--	--	18000
		(Mattancherry Wharf & Ernakulam Wharf)					
	2	(Coal)	8.50	152	--	15000	--
	2 (old)	(Oil)	9.14	183 to 213	30000	--	--
	1	(Oil Berth)	10.70	--	115000 DWT short loaded to 63000	--	--
		(Fert. Berth)	10.70	--	--	40000	--
Tuticorin	6	(General Cargo)	8.24	168-192	--	--	18000
	2	(Oil Jetty)	8.24	228	20000	--	--
		(Coal Jetty)	8.24	--	18000	--	--
Madras	6	(Jawahar Dock)	10.40	228	--	35000	22000
	9	(Inner Harbour)	7.90	137	--	--	--
		(Ore Berth)	9.50	164	--	--	--
			14.60	274	--	87000	--
		(Oil Berth)	14.60	274	87000	--	--

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Madras (Contd)	(Container Terminal)	12.80	--	Third generation container ships.	--	--
Visakhapatnam.	12 (Inner Harbour)	9.45 to 10.21	195	--	--	20000
	2 (Oil)	9.75 to 10.06	--	30000	--	--
	(Ore Berth)	15.30	270	--	100000	--
	(Gen-cum-Bulk cargo berth)	10.70	--	--	30000	--
	(Oil Berth under execution Harbour)	17.00	--	150000	--	--
Paradip	(Iron Ore Berth)	11.89	243	--	60000	--
	3 (General Cargo)	10.70	--	--	--	22000
	(Fertiliser berth under execution)	11.70	--	--	45000	--
Calcutta	29 (effective K.P. dock)	7.90	157	--	--	--
	9 (M.S. Dock)	7.90 (variable depending upon River draft)	172	15000	--	10000
	2 (Garden Reach)	7.90	172	--	--	--
	6 (Budge Budge jetties)		190	--	--	--

Contd....

(1) (2) (3) (4) (5) (6) (7)

IMPLEMENTATION PROGRESS OF THE SCHEMES COSTING MORE

THAN Rs. 5 CRORES

(Cost in Lakhs of Rupees)						
Sl. No.	Name of the Project	Latest approved project cost.	Date of approval	Revised estimated cost.	Original date of commissioning.	Anticipated/ Actual date of commissioning.
1.	2.	3.	4.	5.	6.	7.
1. <u>Kandla Port</u>						
	i) 6th Gen-cargo Berth	1749.00	11-3-81	2093.00	167.83	28.5.84(Actual)
	ii) Construction of New Oil Jetty	602.00	13.1.81	719.00	June'81	15.6.84(Actual)
2. <u>Bombay Port</u>						
	i) 4th Oil Jetty	3420.00	Aug '77	3420.00	July'82	21-6-84(Actual)
	ii) Purchase of 2 High Power Tugs	1020.00	2-7-80	--	June'82	Jan'84-1st June'84-2nd (Actual)
iii) <u>Container Handling Facilities:</u>						
	a) Purchase of one quay side Gantry Crane Rs.350.00.	780.00	20-9-80	--	Feb'84	July'84
	b) Procurement of 3 yard Gantry crane Rs. 360.00				Nov.'82	Commissioned in Nov.'82
	c) Chassis & Prime Movers Rs. 50.00					
	(Being coordinated with programme of installation and commissioning of Quayside Gantry Crane).					
	v) An additional quay side crane	450.00	7-10-82	--	July'84	Jan'85

Contd..

1. 2. 3. 4. 5. 6. 7.

- | | 28.3.83 | 573.00 | 28.3.83 | Sept '84 | Dec. '84 |
|--|---------|----------|----------|-----------|-----------------------------------|
| v) One High Power Tug in replacement of harbour Tug 'Amar'. | | 573.00 | 28.3.83 | Sept '84 | Dec. '84 |
| vi) One High power Tug in replacement of D.Y. 'ANAND'. | | 533.00 | 19.6.82 | Dec. '83 | Oct. '84 |
| vii) Replacement of S.T. 'ARJUN' by a high powered B.1 Tug | | 533.00 | 28.3.83 | Nov. '84 | Feb. '85 |
| 3. <u>Nhava-Sheva Port project</u> | | 50583.00 | 23-9-83 | Dec. '97 | Dec. '87 |
| 4. <u>Mormugao Port</u> | | | | | |
| Construction of multi-purpose Gen-Cargo Berth. | | 980.00 | 21-9-81 | Mar '84 | Oct '84 |
| 5. <u>New Mangalore Port</u> | | | | | |
| Construction of additional berth on the western side of the Eastern Arm. | | 728.00 | 30-10-81 | Dec. '93 | 15-2-84 |
| 6. <u>Cochin Port</u> | | | | | |
| i) Integrated Development Project. | | 5540.00 | 3-7-80 | 13-3-83 | (Oil Berth) i) Oil Berth |
| ii) Acquisition of container handling equipment. | | 510.20 | 8-11-83 | 29-8-83 | (F. Berth) Commission. on 12-1-84 |
| | | | | March '85 | ii) Fertiliser Berth |
| | | | | | a) Civil Works Aug '84 |
| | | | | | b) Handling system March '85 |

---: 29 :---
 1. 2. 3. 4. 5. 6. 7.

7. Tuticorin Port

Construction of 2 Nos.
 Addl. Gen-Cargo Berths.

1132.75 6-5-81 -- Feb'84 Feb'84

8. Madras Port

i) Construction of Outer Arm

808.03 24-9-76 1174.00 Aug'81 Oct'83

ii) Container Terminal

3220.00 Jan.'81 April'83 Apr'85 Berth completed.

iii) Expansion of Jawahar Dock

1167.00 March'81 9-7-83 Dec'84 Expansion to provide two more cargo berths commissioned on 18-12-1983.

iv) Construction of 2nd Oil
 Handling Facility at
 Bharathi Dock

2234.00 19-3-84 -- Nov'86 Nov'86

v) Deepening of Bharathi Dock.

3077.00 19-7-84 -- Mar'87 Mar'87

9. Visakhapatnam Port

i) Construction of Gen-Cm-
 Bulk Cargo Berth

992.00 3-10-83 992.00 May'84 Dec'84

ii) Installation of 3rd Wagon
 Tippler.

702.00 22-9-79 -- Mar'82 May'84 Formally inaugurated on 27-10-83.

iii) Oil Berth

2893.00 8-10-82 4219.00 April'84 April'85 (Berth)
 June'85 (Ancillary)

1. 2. 3. 4. 5. 6. 7. -----

10. Paradip Port

- i) Modification of iron ore handling plant 808.03 12-11-79 1174.00 14-11-83 Jan '84
- ii) Construction of 2nd Gen-cargo berth 725.58 24.7.79 1262.93 May '82 Oct '84
- iii) Construction of 3rd Gen-Cargo Berth 712.00 30.7.81 1332.70 April '84 March '85
- iv) Construction of Fert.Berth 1550.00 8-1-82 2800.00 June '85

11. Calcutta/Haldia Port

- i) Comprehensive scheme for improvement of drafts. 4200.00 13-8-83 1986.87 1986-87
- ii) Bulk Fertiliser Handling Equipment. 424.00 24-9-78 1986.87 Nov. '84

(Rs. in crores)

	1980-81						1981-82						1982-83					
	Cut Lay	Expendi-	tural Resour-	Budgeta-	Ry support.	%age of utilization.	Cut Lay	Expendi-	tural Resour-	Budgeta-	Ry support.	%age of utilization.	Cut Lay	Expendi-	tural Resour-	Budgeta-	Ry support.	%age of utilization.
1(a) Calcutta Channel	4.91	1.61	--	11.61	32.8	6.96	1.91	--	--	1.91	27.8	9.65	6.08	0.62	5.46	63.0	--	--
(b) Haldia Dredging	2.00	10.92	--	10.92	546.0	--	--	--	--	--	--	--	--	--	--	--	--	--
(c) Haldia Decks	2.33	1.55	--	1.55	66.5	4.01	1.43	--	--	1.43	35.7	1.61	1.51	0.32	1.19	93.8	--	--
(d) BHRTW	2.75	2.40	--	2.40	87.3	2.00	2.16	--	--	2.16	108.0	2.00	2.29	--	2.29	114.5	--	--
2.Bombay	21.01	3.07	8.07	--	38.4	17.91	8.63	8.63	--	--	48.3	23.55	18.30	18.30	--	--	--	77.7
3.Madras	9.11	3.12	3.12	--	34.2	10.33	11.39	11.39	--	--	110.3	17.59	31.93	31.93	--	--	--	130.9
4.Cochin	6.18	3.90	--	3.90	61.5	11.66	12.33	--	--	12.33	105.7	13.28	14.93	--	14.93	111.7	--	--
5.Visakhapatnam.	10.74	7.02	--	7.02	65.3	11.03	9.04	--	--	9.04	72.9	10.75	13.42	0.36	13.06	124.9	--	--
6.Kandla	9.62	4.30	3.95	0.45	44.7	10.08	10.61	10.61	--	--	105.3	13.41	14.41	14.41	--	--	--	107.2
7.Mormugao	2.63	2.37	0.87	1.50	99.0	4.44	3.76	1.46	--	--	2.30	4.19	9.40	7.42	1.98	224.6	--	--
8.Paradip	8.12	10.10	1.44	8.66	124.4	9.10	9.89	--	--	9.89	103.3	9.54	12.50	--	12.50	131.6	--	--
9.Tuticorin.	7.04	6.45	0.25	6.20	91.6	5.96	6.68	--	--	6.68	103.3	7.37	5.31	0.60	4.71	72.0	--	--
10.New Mangalore	11.30	4.96	--	4.96	43.9	6.30	10.79	0.60	10.19	171.3	4.37	3.71	--	--	3.71	34.9	--	--
Total:	97.74	66.67	17.60	49.07	63.0	99.58	87.05	32.69	54.33	37.4	117.31	133.59	73.36	59.73	113.2	--	--	--

CH. I-ANNEX-II

Portwise Financial Performance of Plan Schemes during Sixth Plan Period.

Port	(Rs. in crores)												
	1983-84		1980-81 to 1983-84		1984-85		1985-86		1986-87		1987-88		
	Outlay	Expenditure	Interest	Subsidy	Capital support	Capital support	Capital support	Capital support	Capital support	Capital support	Capital support	Capital support	Capital support
1(a) Calcutta	5.52	4.94	0.85	4.09	88.0	26.94	14.46	1.39	13.07	53.7	9.00	9.00	9.00
(b) Haldia Channel	--	--	--	--	--	2.00	10.92	--	10.92	546.0	--	--	--
(c) Haldia Docks	5.33	5.03	1.27	3.76	93.8	13.28	9.49	1.56	7.93	71.5	5.00	1.88	3.12
(d) BHRTW	2.85	2.94	--	2.94	90.2	9.60	9.42	--	9.42	98.1	5.90	--	5.90
2. Bombay	37.18	23.05	23.05	--	62.0	99.65	58.03	58.05	--	58.2	20.74	20.74	20.74
3. Madras	19.31	14.41	14.41	--	74.6	56.34	60.75	60.75	--	107.8	43.81	19.81	24.00
4. Cochin	21.00	18.15	1.13	17.02	86.4	52.12	48.74	0.60	48.14	93.5	11.10	11.10	--
5. Visakhapatnam	10.00	8.31	--	8.21	82.1	42.52	36.76	0.36	36.40	86.4	25.02	3.02	22.00
6. Kandla	12.72	10.37	10.37	--	81.53	48.52	40.06	39.61	0.45	32.5	10.66	10.66	--
7. Mormugao	7.31	5.47	5.47	--	74.80	18.57	20.64	14.86	5.78	111.1	3.98	3.98	--
8. Paradip	13.77	14.28	--	14.28	103.7	40.53	46.77	1.44	45.33	115.4	15.94	--	15.94
9. Tuticorin	5.53	5.34	0.50	4.84	96.9	25.80	23.10	1.35	21.83	89.3	5.31	1.80	4.31
10. New Mangalore	6.38	5.65	0.39	5.26	88.5	28.35	25.11	0.99	24.12	88.6	6.57	1.57	5.00
Total:	146.82	117.84	57.44	60.40	80.26	464.22	404.35	180.96	223.39	87.1	163.03	73.76	89.27

CHAPTER - II

APPROACH TO SEVENTH PLAN

2.1 In the paper on The Approach to the Seventh Five Year Plan 1985-90 issued by the Planning Commission it has been stated that "in the development of ports the emphasis will be on modernisation of handling systems and provision for handling fast developing container traffic. Mis-matching between port infrastructure and shipping technology will have to be avoided. Intermediate and minor ports should be developed as an integral part of the overall port system in order to increase the port capacity in the country and to help in the acceleration of regional development. The resources of all ports should be pooled for the optimum development of Port Sector."

2.2 In order to facilitate an objective appraisal of the draft plan document for the Port sector it appears necessary to spell out the strategy which underlines the Sub-Groups recommendations.

2.3 Shipping trends is one of the important aspects to be reckoned while planning a new port or development of new facilities at the existing ports as it dictates size and scale of port facilities. Attempts should be to have such facilities compatible with such trends to the extent feasible. The trend varies from commodity to commodity viz. solid bulk (iron ore, coal, fertiliser), wet bulk (crude oil, oil products) break bulk etc. Consequently port facilities to handle these cargo also vary and are kept in view while planning such facilities. The basis is broadly indicated in the following paragraphs.

2.3.1 Iron Ore:

Iron ore is one of the major commodities of export from the country. Major share of the exports is to Japan and Korea and will continue to be so. Rumania is also emerging as a substantial buyers of Indian ore. The main ore export handling ports are Paradip, Visakhapatnam, Madras and Mormugao. The ports of Paradip and Mormugao can receive at present ore vessels of size upto 60000 dwt and draft upto 12 m whereas Vizag. can receive 100000 dwt and Madras 80000 dwt.

In view of the recession in the international steel industry and consequently in the demand of iron ore, it has become difficult for the exporting countries to maintain even the present level of exports. As freight plays an important part in the landed cost of ore at the receiving ports, buyers are keen to move the ore in as large vessels as possible to economise on the raw material cost. Competing ports. in Australia and Brazil provide for vessels in the range of 150,000 and above and are still being deepened. The receiving ports in Japan are also being improved to receive large and larger vessels and sometimes on two port discharge basis. Participation of the buyers in the development of such facilities also is not unknown. Viewed in the context of the market studies and the facilities available and being provided by competing ports, selective deepening of some of the ore export ports,

to keep our exports competitive, becomes inevitable.
Alternatives to such deepening, if economical, have
also to be thought of.

In the above context, an agreement has been reached by M.M.T.C. with Japanese Steel Mills and accordingly Madras Port is being deepened as part of the VIIth Plan scheme, under Dutch assistance to receive 130,000 dwt vessels having a loaded draft upto 16.2 m at a cost of Rs. 30 crores. MMTC have stressed the need in the context of present trend of international ore market to deepen other ports also and further deepen Madras Port for 17 m draft vessels. Accordingly a rough assessment has been made with respect to alternatives of developing port facilities for larger size ore vessels and cost estimates.

MMTC have indicated based on the discussions with Japanese Steel Mills that Visakhapatnam outer harbour may be improved to take ore vessels upto 170,000 dwt of a loaded draft of 17 m. Similarly Paradip port has been suggested to be upgraded for receiving ore vessels upto 100,000 dwt. Provision has been made in the draft plan document for the above developments. However, before final investments are made, an appraisal of available alternatives to such deepening especially at Paradip where the investments will be very substantial have to be made. The use of transhippers on the east coast does not appear prima facie economical. The possibility of participation of the buyers in the investment itself, the appropriate form being decided at the relevant stage should be explored.

In case of Mormugao, the Port can handle 60,000 dwt vessels or upto 12m draft, inside the harbour. However, larger vessels of 120/130,000 dwt are loaded at the berth upto 12m upto in mid stream by transhippers owned by private parties. Considering the more of movement of ore to the port from the mines, such uotopping by transhippers at Mormugao has been found to be satisfactory to buyers. In view of the very high cost involved in further deepening of the port, consequent on hard material having to be dredged for such deepening, the transhipper arrangement will have to continue at the port and an additional transhipper has been proposed to be added by the port in the seventh plan.

2.3.2 P.O.L.

In the international tanker fleet, tankers in size group 60,000 - 160,000 dwt accounts for 45% of total dwt as against 9.8% of V.L.C.C. and U.L.C.Cs. The future outlook would be increased deployment of tankers in the group 80,000 - 150,000 dwt.

In the Indian fleet, there are 55 vessels operating in this trade viz. 2 of 276,800 dwt each, 22 in the range of 87,000 - 125,000 dwt, 7 in 41,000 - 65,000 dwt, 20 in 16,000 - 32,000 dwt (all are product tankers). 26 more tankers are likely to be added shortly which are in the range of 25,300 - 62,500 dwt. Hence the trend in the vessel size would be limited to 150,000 dwt in case of crude tankers and 35,000 dwt in case of product tankers and facilities planning in the VII Plan has been done accordingly.

An important factor to be noted is the source of the crude for the Indian refineries. Considering the distances over which such crude has to move, the benefit of sea freight consequent on deploying large tankers is inappreciable. Consequently planning for the above ranges of vessels for crude and products in our ports would seem to be quite adequate. One area where utilisation of facilities could be maximised is by improving pumping rates all through from ships to installations. This has greater relevance in the case of product tankers. The ship acquisition and the capacity of the pipelines to be laid/renewed by the oil industry need special attention during the plan.

The position at the crude oil handling ports are as under :-

Bombay can now receive 125,000 dwt tankers short loaded upto draft 12.7 m.

Cochin on completion of the on-going project can receive 115,000 dwt tankers shortloaded upto a draft of 10.70 m.

Madras at present can receive 88,000 dwt tankers. Recently, an additional berth with related facilities have been sanctioned and taken up for execution in the context of refinery expansion. These facilities can receive 150,000 dwt tankers loaded to 15.3 m.

Visakhapatnam is handling large size crude tankers at the mooring berth in the outer harbour with cargo transfer through daughter ship arrangement. As part of the refinery expansion, an oil berth with related facilities is under execution in the outer harbour to receive upto 200,000 dwt vessels eventually.

Initially the facility is being made suitable for tankers upto 150,000 dwt.

At Haldia, the Second oil jetty when taken up for implementation is intended to cater for short loaded 150,000 dwt tankers to suit the draft restrictions in the Hooghly river.

It would thus be seen that facilities recently commissioned and under execution or consideration take note of the requirements of the vessels that would be deployed for the carriage of crude oil and products.

2.3.3 Fertilisers:

Rock phosphate and sulphur are the major bulk raw materials in the international trade. The main exporting countries are Africa, America and Middle East.

The sizes of ships carrying rock phosphate range from 18,000 to 60,000 dwt. Bulk of the trade is carried by ships in the group 18,000 to 40,000 dwt. Ports of the exporting countries have facilities to handle ships of sizes ranging from 25,000 to 50,000 dwt. Future trend of ships is likely to be in the range of 60,000 dwt.

In case of sulphur, the preference is for ship sizes ranging between 10,000 and 25,000 dwt because of lack of handling facilities at the unloading ports, even though loading ports can handle ships of 50,000 to 100,000 dwt.

Captive facilities for handling

metres?
Dwt.?
fertiliser exist at the ports of Kandla, Cochin, Madras and Haldia. Madras can receive ships of size upto 36' draft whereas other ports can receive ships upto 30' loaded draft consequent on draft restrictions. However, at Paradip, new facilities are being created to handle fertiliser raw materials in ships sizes upto 40,000 dwt. Ports of Madras and Cochin can receive ships of draft upto 10.70 m. In case of Haldia and Kandla, the size would be about 20,000 dwt because of the prevailing draft of 9.14 m only.

However, with the anticipated improvement in the draft situation in the Hooghly after completion of river training works under execution, vessels upto a loaded draft of 10.14 m will be possible to be taken.

The new port at Nhava Sheva which is under execution will be provided with the latest modern mechanical handling facilities to handle both raw and finished fertilisers. Berthing facilities are being designed to accommodate ships of sizes 60,000 - 80,000 dwt.

In the Seventh Plan development of another port at or near Vadinar to handle bulk cargo is being planned. The port will have a natural draft of minimum 12.0 m and will provide berthing facilities for ships of size 60,000 dwt carrying fertiliser raw materials.

2.3.4 General Cargo:

The existing port facilities can take ships of draft of 9.14 m and the new facilities created during the Sixth Plan can handle cargo ships having drafts upto 10.70 m. There is not much significant change in the size of ships carrying break bulk cargo.

Therefore additional berths planned at some of the ports during Seventh Plan need be only planned for these drafts.

2.3.5 Containers:

Container ships are generally classified into "generation" i.e. as having characteristics typical of certain stages in container development and container ship building. These are shown in the table below:-

	<u>Container capacity</u>	<u>DWT</u>	<u>LOA (m)</u>	<u>Width (m)</u>	<u>Draught (m)</u>
First generation	750	14,000	180	25	9.0
Second generation	1500	30,000	225	29	11.5
<u>Third generation</u>	<u>2500-3000</u>	<u>40,000</u>	275	32	<u>12.5</u>

Operation costs of these ships are considerably large. Hence these large ships will call at such specified ports where specialised container terminal facilities exists to keep operating cost to a minimum. Feeder ships of capacities upto 300 TEUs would operate between other ports and to the port of call of mothership.

The recently completed container terminal at Madras has been provided with modern container handling facilities which can serve Third generation vessels.

The new port at Nhava Sheva has been also planned to provide most modern container handling facilities to service third generation container vessels.

The ports of Cochin, Bombay and Calcutta are being equipped with container handling facilities to service combination and first generation container ship. At other ports basic infrastructure facilities to handle container are being contemplated.

2.4 To the extent possible the traffic forecasts made by the user agencies - Governmental and non-Governmental have been tested, modified or improved upon in the light of current developments in the region, particularly the neighbouring countries, and after discussions with port authorities.

2.5 - The short-fall in capacity with reference to the traffic projections for captive as well as other cargoes is proposed to be met by resort to the measures for optimizing resources such as -

- (1) Maximising productivity
- (2) Development of managerial effectiveness
- (3) Inculcation of skills in the labour force and
- (4) Modernization programmes.

Where, as a result of the above measures, projected demand with a cushion to meet unexpected changes in traffic volumes and intensity was seen to exceed the supply of port facilities, creation of new capacities has been proposed.

2.6 In the allocation of traffic as projected and the port capacity required to handle it efficiently, care has been taken to ensure that apart from matching demand and supply requirements at the aggregate level there is no mismatch even at individual port levels and proper note taken on the port demand which is location specific.

2.7 The approach evolved to determine the level of facilities required for handling break bulk cargo is based on the following factors :-

(i) Against the present level of containerisation nearly 15% of the total general cargo exports, during the Seventh Five Year Plan containerisation should account for at least 50% of the General Cargoes against 70 - 80% internationally accepted as technically feasible and economically viable in the specially designated container ports of Bombay, Cochin, Madras and Calcutta.

(ii) The traditional general cargo package is more and more being broken up into a number of specialized packages of larger and larger units. Though the speed of unitization cannot be foreseen the process is irreversible. The major ports must be geared therefore to handle adequately increasing unit load traffic. No additional special facilities for the present to handle such unit load traffic are considered necessary. A positive move forward towards the concept of multi-purpose terminals is required. It offers several advantages over conventional break bulk berths and also enables port authorities to easily blend modern cargo handling techniques with conventional cargo operations and also respond to future

change in cargo mixes speedily and effectively. The handling costs in a berth offering multi-purpose facilities are comparatively lower than that of conventional operations, understandably; because higher degree of mechanization of such berths demands relatively lower labour and staff inputs and leads to increase in handling productivity.

- (iii) The projects and schemes proposed under the Seventh Plan must in the interest of efficiency and economic viability of the Ports be oriented towards greater productivity and ensure quick return on investment. It is no longer possible, still less desirable, to rely on port pricing mechanisms to achieve economic viability.
- (iv) There is little possibility of finding a satisfactory solution to the problem of labour surplusage in the wake of technological changes. The measures to be adopted by the port managements to improve efficiency must reflect awareness of this constraint. Periodic review of datums and manning scales may help in weakening the adverse consequences.
- (v) A well considered and comprehensive policy of costing and pricing of port facilities and cargo handling should be evolved.
- (vi) Schemes for Manpower Planning should be evolved. Manpower, unless it is skilled,

cannot become a resource - an asset - as important as capital or labour in any industry. Proper strategy to professionalize port managements, impart skills and motivate the labour force require to be drawn up.

- (vii) At the stage of planning for development of new facilities or for upgradation of existing facilities, their likely impact on various sub-systems comprising the total transportation chain should be closely studied and an agreed approach evolved to optimise resources of all the sub-systems comprising the transport chain. An institutional arrangement should be devised for close monitoring at operational levels. If the systems performance is viewed as a whole, the constraints operating in any sub-system can be clearly identified and remedial measures devised to facilitate smooth and rapid flow of cargoes from consignors to consignees across the Continents.

CHAPTER - III

SUMMARY OF INVESTMENTS PLANNED

3.1 For the development of the Major Ports, Dredging Corporation of India, Andamans Lakshadweep Harbour Works and Minor Ports Survey Organisation falling under the Ports Sector, an overall outlay of Rs. 1648 crores has been suggested as indicated below:-

(Rs. in Crores)

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-			
Port/Organisation	Outlay Proposed		
	Continuing Schemes	New Schemes	Total
(1)	(2)	(3)	(4)

1(a) Calcutta	12.40	62.60	75
(b) Haldia Docks	34.05	42.95	77
(c) BHRTW	34.00	--	34
2. Bombay	44.00	116.00	160
3. Madras	31.70	76.30	108
4. Cochin	25.50	45.50	71
5. Visakhapatnam	10.20	55.80	66
6. Kandla	4.60	80.40	85
7. Mormugao	1.30	70.70	72
8. Paradip	19.90	87.10	107
9. Tuticorin	4.75	44.25	49
10. New Mangalore	16.60	75.40	92
11. Nhava Sheva	470.00	--	470

(1) (2) (3) (4)

12. Upgradation of 2 Intermediate ports as Major Ports.	--	25	25
Total Major Ports:	709.17	790.83	1500
13. Sethusamudram Shipping Canal Project.	--	10.00	10
14. Dredging Corporation of India	19.64	110.36	130
15. Andamans Lakshadweep Harbour Works	4.97	31.03	36
16. Central Assistance for Minor Ports.	--	100.00	100
17. MPSO	0.46	4.54	5
Grand Total:(Ports Sector)	734.24	1046.76	1781

3.2 The financing of the Seventh Plan Outlay is planned as below:-

	Internal Resources	External Aid	Budgetary Support	Total Outlay
<u>Major Ports</u>	625.00	256.00	<u>585.00</u>	1466
<u>Port Management Institute</u>	--	--	<u>6.00</u>	6
<u>R&D Schemes (Ports)</u>	--	--	<u>1.00</u>	1
<u>New Port Technology</u>	--	--	<u>2.00</u>	2
Upgradation of 2 Intermediate ports as Major Ports.	--	--	25.00	25
<u>Dredging Corporation of India</u>	30.00	--	<u>100.00</u>	130.00
ALHW	--	--	36.00	36.00
MPSO	--	--	5.00	5.00
Central assistance to minor ports.	--	--	100.00	100.00
Sethusamudram Project.	--	--	10.00	10.00
	655.00	256.00	870.00	1781.00

4.1 The Traffic as projected by the Working Group for VI Five Year Plan (1980-85) and actual traffic handled by the major ports upto 1983-84 are given below:-

(Figures in million Tonnes)

No.	dity.	Pro.	Act.	Pro.	Act.	Pro.	Act.	Pro.	Act.	Pro	Revi- sed. Pro.
1.	P.O.L.	30.30	33.58	35.10	34.20	42.59	46.25	46.30	47.47	51.00	50.00
2.	Iron Ore	27.20	27.20	31.00	25.10	33.00	22.23	34.00	21.85	37.00	25.00
3.	Fertili- ser(fini- shed)	3.91	3.78	4.47	2.81	5.30	1.45	6.10		6.40	
4.	Fertili- ser(raw)	3.00	2.43	3.50	2.59	3.79	2.32	4.04		4.29	
5.	Food- grains	0.78	0.90	0.82	2.19	1.07	2.14	1.09	3.30	1.13	*
6.	Coal	2.58	1.37	3.61	2.16	4.11	4.88	4.31	4.20	4.41	6.15
7.	Other general cargo	18.78	16.65	20.26	18.68	21.63	17.11	23.92	19.59	26.67	26.30
Total:		87.05	81.54	98.76	87.66	111.40	96.34	119.76	100.04	130.90	115.00

*Included in other general cargo.

4.2 Commoditywise traffic projections vis-a-vis available port capacity by the end of Sixth Plan (31.3.1985), after reassessment is indicated below:-

Contd.....

(In million tonnes)

Commodity	Capacity on 31.3.80	Port capacity by 31.3.85	Revised Traffic Projections 1984-85
1. P.O.L.	38.50	59.25	50.00
2. Iron Ore	37.00	41.50	25.00
3. Coal	3.00	6.25	6.15
4. Fertiliser	2.10	3.90	7.55
5. Containers	*	3.48	3.40
6. General Cargo	20.71	22.35	22.90
Total:	101.31	136.73	115.00

* Handled conventionally.

4.3 The Table below gives commodity-wise abstract position regarding capacity as on 31.3.1985, projected traffic in 1989-90, capacity planned in VII Plan period and likely capacity at the end of the VII Plan :-

(In million tonnes)

S.No.	Commodity	Capacity as on 31.3.85	Projected traffic 1989-90	Capacity additions during VII Plan.	Capacity as on 31-3-1990
1.	P.O.L.	59.25	76.12	20.50	79.75
2.	Iron-ore	41.50	36.05	—	41.50
3.	Fertilisers (raw & finished)	3.90	8.47	4.10	8.00
4.	Coal	6.25	10.55	2.20	8.45
5.	Other Break Bulk Cargo.	22.35	21.65	1.30	23.65
6.	Containers	3.48	11.01	5.82	9.30
	Total:	136.73	163.85	33.92	170.65

Port-wise and commodity-wise traffic projections and capacities planned during VII Plan period are given in the Statements following.

Contd.....

Portwise projections of Traffic for the Five Year
Plan 1985-90 and port capacities during 1985-90.

Commodity: P.O.L.

(Figures in Million Tonnes)

Sl. Name of Port in 1985-90
No. the Port. 1985-86 1986-87 1987-88 1988-89 1989-90
Capacity in VII Plan Period (Both
Crude and Products)

As on Accruing Expected
31-3- as a to be
1985 result of achieved
scheme by new
already schemes
sanction- to be
ed get- taken up
ting com- in 7th
pleted. plan.

Pr. C. Pr. C. Pr. C. Pr. C. Pr. C.
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16.

1a) Calcutta
0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 -- 0.50 --

b) Haldia
1.97 2.25 2.33 2.25 2.00 2.25 2.55 2.25 1.54 3.87 3.50 *4.00 -- -- 0.50 -- 7.50 --

2. Paradip
-- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --

3. Visakhapatnam
1.57 3.79 1.68 4.10 1.61 4.10 2.10 4.10 1.86 4.10 6.00 -- -- 6.00 -- 8.00 --

4. Madras
1.60 5.20 1.50 5.20 1.36 5.20 1.40 5.20 1.60 5.20 4.00 4.00 -- -- 1.00 -- 4.50 --

5. Tuticorin
0.59 -- 0.62 -- 0.66 -- 0.71 -- 0.75 -- 1.00 -- -- -- -- -- -- 1.00 -- 4.50 --

6. Cochin
1.40 4.20 1.30 4.20 1.30 4.20 1.50 4.20 1.60 4.20 4.50 -- -- 8.00 -- 9.00 --

7. New Mangalore
0.49 -- 0.52 -- 0.56 -- 0.60 -- 1.64 6.00 1.00 -- -- 8.00 -- 1.50 --

8. Mormugao
0.66 -- 0.67 -- 0.69 -- 0.72 -- 0.74 -- 1.50 -- -- -- -- 1.50 --

Contd...

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|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------|------|-------|-------|-----|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. |
| ----- | | | | | | | | | | | | | | | |
| 9. Bombay | 3.20 | 16.50 | 3.20 | 16.50 | 2.90 | 16.50 | 2.90 | 16.50 | 2.80 | 19.70 | 19.25 | -- | 1.50 | 20.75 | |
| 10.a) Kan-
da | 3.56 | -- | 4.30 | -- | 5.39 | -- | 5.85 | -- | 4.39 | -- | 3.00 | -- | -- | 3.00 | |
| b) Vadi-
nar | 1.10 | 9.40 | 1.80 | 9.40 | 1.80 | 9.40 | 3.30 | 9.40 | 2.30 | 12.70 | 15.00(C) | -- | 3.00 | 18.00 | |
| ----- | | | | | | | | | | | | | | | |
| Total: | 16.64 | 41.34 | 18.42 | 41.65 | 18.77 | 41.65 | 22.82 | 41.65 | 20.35 | 55.77 | 59.25 | 8.00 | 12.50 | 79.75 | |
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* To be sanctioned
Pr. indicates Products.
C indicates Crude.

Portwise projections of Traffic for the Five Year Plan 1985-90
and port capacities during 1985-90

Commodity: Iron Ore

(Figures in Million Tonnes)

| Sl. No. | Name of the Port. | 1985-86 | 1986-87 | 1987-88 | 1988-89 | 1989-90 | As on 31.3.85. | Accruing as a result of scheme already sanctioned getting completed. | Expected to be achieved by new schemes to be taken up in 7th plan | Expected capacity at end of VIIIth Plan. |
|---------|-------------------|---------|---------|---------|---------|---------|----------------|--|---|--|
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. |
| 1.a) | Calcutta | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| b) | Haldia | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 2. | Paradip | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 4.00 | -- | -- | 4.00 |
| 3. | Visakhapatnam | 6.00 | 6.00 | 6.00 | 6.00 | 8.00 | 8.00 | -- | -- | 8.00 |
| 4. | Madras | 3.85 | 4.00 | 4.00 | 4.00 | 7.00 | 8.00 | -- | -- | 8.00 |
| 5. | Tuticorin | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 6. | Cochin | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 7. | New Mangalore | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 7.50 | -- | -- | 7.50 |
| 8. | Mormugao | 14.05 | 14.55 | 15.05 | 15.55 | 15.05 | 14.00** | -- | -- | 14.00 |
| 9. | Bombay | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 10.a) | Kandla | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| b) | Vadinar | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| TOTAL: | | 28.90 | 30.55 | 31.05 | 31.55 | 36.05 | 41.50 | -- | -- | 41.50 |

* Facilities for Iron Ore being converted for handling Coal. ** Includes 6 million tonnes of handling by private facilities.

Portwise projections of Traffic for the Five Year Plan
1985-90 and port capacities during 1985-90

| Commodity: Coal | | | | | | | | | | | |
|-----------------------------|--|--|--|--|--|--|--|--|--|--|--|
| (Figures in Million Tonnes) | | | | | | | | | | | |
| Sl. No. Name of Port. | | Capacity in VII Plan Period | | | | | | | | | |
| No. the port. | | As on 31-3-85 | | | | | | | | | |
| | | Accruing as a result of scheme already sanctioned getting completed. | | | | | | | | | |
| | | Expected to be achieved by new schemes to be taken up in 7th Plan. | | | | | | | | | |
| | | Expected capacity at end of VII Plan. | | | | | | | | | |
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** Relates to import of Coking Coal for Vizag. Steel Plant. Mechanised facilities will have to be provided by user Agency to handle this traffic.

* Pertains to thermal/industrial coal moved coastally.

(Figures in Million Tonnes)

| Sl. Name of Project | | 1985-86 | | 1986-87 | | 1987-88 | | 1988-89 | | 1989-90 | | Capacity in VII Plan Period | | | |
|---------------------|---------------|---------|------|---------|------|---------|------|---------|------|---------|------|-----------------------------|--|---------------------------------------|------|
| | | R | F | R | F | R | F | R | F | R | F | As on 31.3.85 | Expected to be achieved by new schemes to be taken up in 7th Plan. | Expected capacity at end of VII Plan. | |
| 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. |
| | a) Calcutta | 0.36 | 0.40 | 0.58 | 0.40 | 0.71 | 0.40 | 0.85 | 0.40 | 0.85 | 0.40 | 0.40 | -- | -- | -- |
| | b) Haldia | 0.50 | 0.50 | 0.58 | 0.58 | 0.58 | 0.60 | 0.62 | 0.62 | 0.62 | 0.50 | 1.80 | -- | -- | 1.80 |
| 2. | Paradip | -- | -- | 0.06 | 0.10 | 0.49 | 0.40 | 0.68 | 0.40 | 0.78 | 0.40 | 0.40 | 1.20 | -- | 1.20 |
| 3. | Visakhapatnam | 0.43 | 0.20 | 0.50 | 0.10 | 0.57 | -- | 0.63 | -- | 0.63 | 0.43 | 0.30 | -- | -- | 0.30 |
| 4. | Madras | 0.27 | 0.50 | 0.27 | 0.50 | 0.27 | 0.50 | 0.27 | 0.60 | 0.27 | 0.54 | 0.60 | -- | -- | 0.60 |
| 5. | Tuticorin | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.34 | 0.37 | 0.34 | 0.53 | -- | -- | -- | -- |
| 6. | Cochin | 0.66 | 0.15 | 0.63 | 0.15 | 0.69 | 0.15 | 0.69 | 0.15 | 0.69 | 0.15 | 0.60 | -- | -- | 0.60 |
| 7. | New Mangalore | 0.04 | 0.15 | 0.06 | 0.15 | 0.09 | 0.15 | 0.09 | 0.15 | 0.09 | 0.15 | -- | -- | -- | -- |
| 8. | Mormugao | 0.04 | 0.20 | 0.08 | 0.20 | 0.10 | 0.20 | 0.10 | 0.20 | 0.10 | 0.20 | -- | -- | -- | -- |
| 9. | Bombay | 0.79 | x | 0.88 | x | NS | NS | NS | NS | NS | NS | -- | -- | -- | -- |

Contd...

| | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | 11. | 12. | 13. | 14. | 15. | 16. |
|--------------|------|------|------|------|------|------|---------|------|------|------|------|------|-----|-----|-----|------|
| 10.a) Kandla | 0.91 | 0.25 | 0.18 | 0.30 | 1.22 | 0.35 | 1.26 | 0.40 | 1.34 | 0.65 | 0.60 | -- | -- | -- | -- | 0.60 |
| b) Vadi- | | | | | | | | | | | | | | | | |
| nar | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| 11. Nhava | | | | | | | | | | | | | | | | |
| Sheva | | | | | | | 1.90 to | 2.25 | 1.70 | 0.55 | -- | 2.90 | -- | -- | -- | 2.90 |
| Total: | 3.84 | 4.50 | 4.63 | 4.50 | 4.48 | 4.50 | 4.91 | 4.50 | 6.79 | 4.50 | 3.90 | 4.10 | -- | -- | -- | 8.00 |

Note: - "R" indicates Raw materials.

"F" indicates finished Fertilizers.

x Capacities indicated are dedicated capacities whereas additional traffic will be handled in general cargo berths.

Traffic Projection - General Break-bulk Cargo to be handled conventionally

| Commodity: Break Bulk Cargo | | | | | | | | | | (In Million Tonnes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|--|--|--|--|--|--|--|--|--|----------------------------------|--|--|--|--|--|--|--|--|--|-----------|--|--|--|--|--|--|--|--|--|--------|--|--|--|--|--|--|--|--|--|--------------------|--|--|--|--|--|--|--|--|--|----------------------|--|--|--|--|--|--|--|--|--|
| Port | | | | | | | | | | Capacity/Break Bulk Conventional | | | | | | | | | | Remarks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Projected Traffic | | | | | | | | | | Planned | | | | | | | | | | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| General Cargo | | | | | | | | | | As on | | | | | | | | | | Addition | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| including | | | | | | | | | | 31.3. | | | | | | | | | | during | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| to be handled | | | | | | | | | | a result of | | | | | | | | | | 1939-90 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| in container | | | | | | | | | | 35 | | | | | | | | | | VII Plan. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1989-90 | | | | | | | | | | schemes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| assuming 5% | | | | | | | | | | sanctioned | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| annual com- | | | | | | | | | | or being | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pounded | | | | | | | | | | sanctioned | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| growth. | | | | | | | | | | in VI Plan. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. | | | | | | | | | | 5. | | | | | | | | | | 7. | | | | | | | | | | 8. | | | | | | | | | | 9. | | | | | | | | | | | | | | | | | | | |
| 2. | | | | | | | | | | 6. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.a) Cal- | | | | | | | | | | 4.00 | | | | | | | | | | -- | | | | | | | | | | 3.60* | | | | | | | | | | *After transfer | | | | | | | | | | | | | | | | | | | |
| cutta | | | | | | | | | | 3.14 | | | | | | | | | | -- | | | | | | | | | | 0.25 | | | | | | | | | | 0.45 | | | | | | | | | | of 0.40 Million | | | | | | | | | |
| b) Haldia | | | | | | | | | | 0.55 | | | | | | | | | | 0.20 | | | | | | | | | | 0.25 | | | | | | | | | | 0.45 | | | | | | | | | | Tonnes capacity | | | | | | | | | |
| | | | | | | | | | | 0.72 | | | | | | | | | | -- | | | | | | | | | | 0.25 | | | | | | | | | | 0.45(A) | | | | | | | | | | for container | | | | | | | | | |
| | | | | | | | | | | 1.26 | | | | | | | | | | 4.20 | | | | | | | | | | 0.25 | | | | | | | | | | 4.05(A) | | | | | | | | | | berth. | | | | | | | | | |
| | | | | | | | | | | 0.90 | | | | | | | | | | 0.95 | | | | | | | | | | -- | | | | | | | | | | 0.95 | | | | | | | | | | | | | | | | | | | |
| 2. Paradip | | | | | | | | | | 2.10 | | | | | | | | | | 2.40 | | | | | | | | | | -- | | | | | | | | | | 2.40 | | | | | | | | | | | | | | | | | | | |
| 3. Visakh- | | | | | | | | | | 4.10 | | | | | | | | | | 2.95 | | | | | | | | | | 0.20+ | | | | | | | | | | 3.05 | | | | | | | | | | | | | | | | | | | |
| apatnam | | | | | | | | | | 1.92 | | | | | | | | | | -- | | | | | | | | | | 2.20 | | | | | | | | | | 2.20 | | | | | | | | | | | | | | | | | | | |
| 4. Madras | | | | | | | | | | 2.00 | | | | | | | | | | -- | | | | | | | | | | -- | | | | | | | | | | 1.65 | | | | | | | | | | (-) After reducing | | | | | | | | | |
| 5. Tuticorin | | | | | | | | | | 1.10 | | | | | | | | | | 1.65(-) | | | | | | | | | | -- | | | | | | | | | | 0.20 M.T. capacity | | | | | | | | | | for container berth. | | | | | | | | | |
| 6. Cochin | | | | | | | | | | 0.96 | | | | | | | | | | 0.14 | | | | | | | | | | 1.05 | | | | | | | | | | 0.60(B) | | | | | | | | | | | | | | | | | | | |
| 7. New Mangal- | | | | | | | | | | 1.80 | | | | | | | | | | 0.80 | | | | | | | | | | 0.25 | | | | | | | | | | 5.20 | | | | | | | | | | **After transfer of | | | | | | | | | |
| lore | | | | | | | | | | 1.00 | | | | | | | | | | 1.00 | | | | | | | | | | -- | | | | | | | | | | 0.3 M.T. capacity | | | | | | | | | | for container berth. | | | | | | | | | |
| 8. Mormugao | | | | | | | | | | 6.60 | | | | | | | | | | 3.94 | | | | | | | | | | 5.20** | | | | | | | | | | 5.20(C) | | | | | | | | | | | | | | | | | | | |
| 9. Bombay | | | | | | | | | | 2.50 | | | | | | | | | | 3.00 | | | | | | | | | | -- | | | | | | | | | | 1.60 | | | | | | | | | | | | | | | | | | | |
| 10. Nhava | | | | | | | | | | 2.10 | | | | | | | | | | 5.16 | | | | | | | | | | -- | | | | | | | | | | 1.00 | | | | | | | | | | | | | | | | | | | |
| 11. a) Kandla | | | | | | | | | | 2.90 | | | | | | | | | | 2.90 | | | | | | | | | | 1.60 | | | | | | | | | | 1.00 | | | | | | | | | | | | | | | | | | | |
| b) Vadinar | | | | | | | | | | 1.00 | | | | | | | | | | 1.00 | | | | | | | | | | 1.00 | | | | | | | | | | 1.00(D) | | | | | | | | | | | | | | | | | | | |
| Total | | | | | | | | | | 9.30 | | | | | | | | | | 21.65 | | | | | | | | | | 22.35 | | | | | | | | | | 23.65 | | | | | | | | | | | | | | | | | | | |

Traffic projection and Capacities - Containerised Cargo

(In Million Tonnes. TEU=12T)

| Port | Projected Containerised Cargo Traffic 1989-90. | Capacities | | | | Imbalance in Million Tonnes. |
|----------------|--|-------------------|--|---|------------------------|------------------------------|
| | | As on 31-3-85 | Resulting from Schemes already sanctioned getting completed. | Expected to achieve by new schemes during VII Plan. | Total capacity 1989-90 | |
| <hr/> | | | | | | |
| | Tonnes million 12T/TEUs | Tonn-TEUs Million | Tonnes TEUS Million | Tonnes TEUS Million | Tonnes TEUS Million | |
| 1. | 2. | 3. | 4. | 5. | 6. | 7. |
| 1.a) Calcutta | -- | -- | Nil | 0.54 | 45000 | Nil |
| b) Haldia | 2.20 | 193330 | 0.36 | 30000 | Nil | 0.36 |
| | 2.20 | 193330 | 0.36 | 30000 | 0.54 | 45000 |
| 2. Madras | 2.05 | 170830 | 0.96 | 80000 | -- | -- |
| 3. Cochin | 0.96 (95%) | 80000 | 0.36 | 30000 | -- | -- |
| 4. Bombay | 3.30 | 275000 | 1.8 | 150000 | -- | -- |
| 5. Nhava Sheva | 2.50 (100%) | 209330 | Nil | Nil | 3.00 | 250000 |
| | 5.80 | 483330 | 1.8 | 150000 | 3.00 | 250000 |
| | | | | | 0.36 | 30000 |
| | | | | | 5.16 | 430000 |
| | | | | | | 0.64 C |

* This imbalance cargo of 1.71 Million will be handled in break-bulk/conventional manner and has been reflected in break-bulk general cargo projections.

4.4 The basis of the traffic projections indicated by the Working Group for the various commodities are as follows :-

(i) General Cargo:

As per guidelines of the Planning Commission, 5% growth per annum compounded on the actuals of 1983-84, has been assessed for working out the traffic projection. This comes to the order of 30.95 million tonnes in 1989-90. However, after segregation of containerised cargo of 9.3 million tonnes that will be moved in containers, the projected break bulk cargo would be 21.65 million tonnes.

(ii) Containerised cargo:

Containerisation in the transportation of cargo by rail, road and sea has revolutionised the concept of freight traffic with significant improvements in handling techniques and marketing and packaging pattern of products. It holds great promise for progress and profit in international transport of goods. It combines major advantages like speed, faster transit, lower operational costs, minimisation of time loss in rail switching, protection against climatic hazards, integration of different modes of transport, decrease in the use of man-power, near elimination of losses due to thefts and pilferages, minimisation of damage during transit and overall improvement in quality of service with reduction in transport charges.

Container Traffic during Sixth Plan

In India 'Import and Export' traffic started moving in containers during the last 5-6 years and

their quantum has been increasing very fast over the years. This is evident from the actual container traffic handled by the ports during the Sixth Plan as in the table below :-

(In terms of TEUs)

| | A c t u a l | | | | |
|-------------|-------------|----------|----------|----------|-------------------|
| | 1980-81 | 1981-82 | 1982-83 | 1983-84 | Upto July 1984-85 |
| Bombay | 80,790 | 1,17,000 | 1,17,500 | 1,36,325 | 46,667 |
| Calcutta | 13,770 | 18,680 | 23,130 | 25,949 | 8,382 |
| Haldia | -- | -- | -- | 6,693 | 2,704 |
| Madras | 8,200 | 14,100 | 18,500 | 28,127 | 11,240 |
| Cochin | 13,850 | 14,710 | 16,540 | 32,546 | 11,937 |
| Nhava Sheva | -- | -- | -- | -- | -- |

Traffic Projections for Seventh Plan

While computing containerised cargo during the Seventh Five Year Plan, the Working Group has considered General Cargo projections of the 5 ports viz. Calcutta/Haldia, Madras, Cochin, Bombay and Nhava Sheva only. Having regard to the rapid change over to containerisation, 50% of general cargo has been considered as target for containerisation during the Seventh Plan period. For Nhava Sheva and Cochin Ports containerisation of general cargo has been assumed as 100% and 95% respectively.

(iii) P. O. L.

Oil Co-ordination Committee has furnished traffic projections for each major port, vide Annex I, the same has been adopted for all the ports.

(iv) Iron-Ore

The traffic projections in iron-ore are based on the data furnished by the M.M.T.C. and the port managements.

(v) Fertilizer:

The projections in respect of fertilizers (raw-materials) as furnished by the Department of Chemicals and Fertilizers have been adopted.

Projections in regard to finished fertilizers are based on the traffic projections furnished by the Ministry of Agriculture.

(vi) Coal

Projections in respect of coal has been furnished by the Ministry of Energy (Deptt. of Coal).

4.5 As a result of the continuing schemes and the new schemes envisaged in the 7th Plan, the port capacities will increase as indicated below:-

| | | <u>Capacity</u>
(In million tonnes) |
|-------------------------|-------------------------------------|--|
| a) <u>GENERAL CARGO</u> | | |
| <u>Haldia</u> | Additional berth | 0.25 |
| <u>Madras</u> | Modification of existing berth | 0.20 |
| <u>Kandla</u> | Bulk handling Facilities at Vadinar | 1.00 |
| <u>New Mangalore</u> | Additional General cargo berth | 0.25 |
| <u>Tuticorin</u> | Additional berth | 0.25 |
| <u>Mormugao</u> | Additional berth | 0.25 |
| Total: | | <u>2.20</u> * |

*The net addition will however be 1.80 M.Ts. in view of transfer of 0.40 M.T. capacity for container berth at Calcutta.

Contd....

✓b) CONTAINERS

| | <u>Million
Tonnes</u> | <u>(1 TEU = 12 T)
TEUs</u> |
|----------------|---------------------------|--------------------------------|
| 1. Bombay | 0.36 | 30000 |
| 2. Calcutta | 0.54 | 45000 |
| 3. Haldia | 0.36 | 30000 |
| 4. Madras | 0.96 | 80000 |
| 5. Cochin | 0.60 | 50000 |
| 6. Nhava Sheva | 3.00 | 250000 |
| Total: | <u>5.82</u> | <u>485000</u> |

✓c) P.O.L.

(Capacity in Million
Tonnes)

Haldia

Construction of 2nd oil Jetty 4.00

Bombay

Berth at Pir Pau 1.50
(Liquid Chemicals)

Madras

Construction of 2nd Oil Berth 4.00

Kandla

Facilities for handling POL
Products at Vadinar 3.00

New Mangalore

Port facilities for
proposed Refinery 8.00

Total: 20.50

✓d) COAL

Tuticorin

Additional coal jetty 1.20

Haldia

Modification to Iron-Ore
handling plant to move coal 1.00

Total: 2.20

Contd.....

(Capacity in Million Tonnes)

✓e) Fertilizer

Nhava Sheva

Fertilizer handling facilities 2.90

Paradip

Mechanical fertiliser handling facilities 1.20*

Total: 4.10

*Subject to installation of mechanised handling facilities by user Agency.

4.6 PORT CAPACITIES:

General Cargo (Break Bulk) Containerised Cargo

The total capacity of General Cargo including containerised cargo at the end of VI Plan (31.3.85) was of the order of 24.30 million tonnes. With facilities created for handling containers at specialised berths during VI Plan at some ports and further development in this direction during the VII Plan, the Working Group has attempted segregation of container berth capacities from that of general break bulk cargo to be handled conventionally. While doing so, the enhanced throughput of a container berth has also been taken into consideration. At the same time, reduction in capacity to the tune of about 0.2 million tonnes per berth for every conventional berth released for container handling has been taken into account while computing the reassessed capacity of conventional general break bulk cargo capacity. The reassessed capacities as will be available on 31.3.85 and 31.3.90 are given below:-

| As on 31.3.85 | | | | As on 31.3.90 | | |
|---------------|------------|---------|-------|---------------|----------|-------|
| Original | Reassessed | | Total | General | Contain- | Total |
| General | General | Con- | | Cargo. | erised | |
| Cargo | Cargo | tainer- | | | Cargo. | |
| | | ised | | | | |
| | | Cargo | | | | |
| 24.30 | 22.35 | 3.48 | 25.83 | 24.15 | 9.30 | 33.45 |

✓ 4.7 In brief the following is the total commodity-wise capacity planned by the end of the Seventh Plan.

(In Million Tonnes)

| Commodity | Capacity by the end of 31-3-85 | Addition during 7th Plan | Capacity as on 31.3.90 |
|------------------|--------------------------------|--------------------------|------------------------|
| 1. P.O.L. | 59.25 | 20.50 | 79.75 |
| 2. Iron Ore | 41.50 | -- | 41.50 |
| 3. Fertilizers | 3.90 | 4.10 | 8.00 |
| 4. Coal | 6.25 | 2.20 | 8.45 |
| 5. Containers | 3.48 | 5.82 | 9.30 |
| 6. General Cargo | 22.35 | 1.80 | 24.15 |
| | 136.73 | 34.42 | 171.15 |

4.8 Port-wise and commodity-wise capacities at the end of the Sixth Plan and as expected by the end of the VII Plan are furnished in the Table on next page.

PORT CAPACITIES

AS ON 31-3-85 / 31-3-90

(IN MILLION TONNES)

| S.No | COMMODITIES | CALCUTTA | HALDIA | PARADIP | VIZAG. | MADRAS | TUTICORIN | COCHIN | NEW MANGALORE | MORMUGAO | BOMBAY | KANDLA | NHAVA SHEVA | TOTAL |
|------|-----------------------------|-----------|----------|----------|-----------|-----------|-----------|-----------|---------------|---------------|-----------|----------------|-------------|--------|
| 1. | P. O. L. | | | | | | | | | | | | | |
| | i) AS ON 31-3-85 | 0.50 (1) | 3.50 (1) | — | 6.00 (3) | 4.00 (1) | 1.00 (1) | 4.50 (3) | 1.00 (1) | 1.50 (1) | 19.25 (5) | 18.00 | — | 59.25 |
| | ii) DURING 85-90 | — | 4.00 (1) | — | — | 4.00 (1) | — | — | 8.00 (1) | — | 1.50 (1) | 3.00 (1) | — | 20.50 |
| 2. | TOTAL AS ON 31-3-90 | 0.50 (1) | 7.50 (2) | — | 6.00 (3) | 8.00 (2) | 1.00 (1) | 4.50 (3) | 9.00 (2) | 1.50 (1) | 20.75 (6) | 21.00 (3+15BM) | — | 79.75 |
| | IRON ORE | | | | | | | | | | | | | |
| | i) AS ON 31-3-85 | — | — | 4.00 (1) | 8.00 (1) | 8.00 (1) | — | — | 7.50 (1) | 14.00 | — | — | — | 41.50 |
| 3. | ii) DURING 85-90 | — | — | — | — | — | — | — | — | — | — | — | — | — |
| | TOTAL AS ON 31-3-90 | — | — | 4.00 (1) | 8.00 (1) | 8.00 (1) | — | — | 7.50 (1) | 14.00 (2+5TS) | — | — | — | 41.50 |
| 4. | COAL | | | | | | | | | | | | | |
| | i) AS ON 31-3-85 | 1.00 (2) | 3.00 (1) | — | — | — | 2.25 (1) | — | — | — | — | — | — | 6.25 |
| | ii) DURING 85-90 | — | 1.00 (1) | — | — | — | 1.20 (1) | — | — | — | — | — | — | 2.20 |
| 5. | TOTAL AS ON 31-3-90 | 1.00 (2) | 4.00 (2) | — | — | — | 3.45 (2) | — | — | — | — | — | — | 8.45 |
| | FERTILIZERS | | | | | | | | | | | | | |
| | i) AS ON 31-3-85 | — | 1.80 (1) | — | 0.30 (1) | 0.60 (2) | — | 0.60 (1) | — | — | — | 0.60 (1) | — | 3.90 |
| 6. | ii) DURING 85-90 | — | — | 1.20 (1) | — | — | — | — | — | — | — | — | — | 4.10 |
| | TOTAL AS ON 31-3-90 | — | 1.80 (1) | 1.20 (1) | 0.30 (1) | 0.60 (2) | — | 0.60 (1) | — | — | — | 0.60 (1) | 2.90 (2) | 8.00 |
| 7. | Gen. Break Bulk Cargo | | | | | | | | | | | | | |
| | i) AS ON 31-3-85 | 4.00 (35) | 0.20 (1) | 0.85 (3) | 2.40 (11) | 2.85 (16) | 2.20 (6) | 1.65 (10) | 0.80 (4) | 0.50 (6) | 5.20 (46) | 1.60 (5) | — | 22.35 |
| | ii) DURING 85-90 | — | 0.25 (1) | — | — | 0.20 | 0.25 (1) | — | 0.25 (1) | 0.25 (1) | — | 1.00 (1) | — | 1.80 |
| 8. | TOTAL AS ON 31-3-90 | 3.60 (33) | 0.45 (2) | 0.85 (3) | 2.40 (11) | 3.05 (16) | 2.45 (7) | 1.65 (10) | 1.05 (5) | 0.75 (7) | 5.20 (46) | 2.60 (6) | — | 24.15 |
| | CONTAINERS | | | | | | | | | | | | | |
| | i) AS ON 31-3-85 | — | 0.36 (1) | — | — | 0.96 (1) | — | 0.36 (1) | — | — | 1.80 (4) | — | — | 3.48 |
| 9. | ii) DURING 85-90 | 0.54 (2) | 0.36 | — | — | 0.96 | — | 0.60 | — | — | 0.36 | — | 3.00 (3) | 5.82 |
| | TOTAL AS ON 31-3-90 | 0.54 (2) | 0.72 (1) | — | — | 1.92 (1) | — | 0.96 (1) | — | — | 2.16 (4) | — | 3.00 (3) | 9.30 |
| 10. | GRAND TOTAL AS ON 31-3-85 | 5.50 | 8.86 | 4.85 | 16.70 | 16.41 | 5.45 | 7.11 | 9.30 | 16.10 | 26.25 | 20.20 | — | 136.73 |
| | TOTAL ADDITION DURING 85-90 | 0.14 | 5.61 | 1.20 | — | 5.16 | 1.45 | 0.60 | 8.25 | 0.25 | 1.86 | 4.00 | 5.90 | 34.42 |
| | Grand Total As On 31-3-90 | 5.64 | 14.47 | 6.05 | 16.70 | 21.57 | 6.90 | 7.71 | 17.55 | 16.35 | 28.11 | 24.20 | 5.90 | 171.15 |

Notes

1. IRON - ORE : (a) The facilities available at Haldia are being converted for handling coal. (b) At Marmugao the capacity includes 6 million tonnes of handling by private facilities.
2. COAL : The capacities shown above relate to thermal industrial coal moved coastally.
3. General Break Bulk Cargo : (a) There will be a reduction of 0.40 million tonnes at Calcutta in two berths which will be utilised as container berths. (b) The capacity has been arrived at Cochin after reducing 0.20 million tonnes for container berth. (c) The capacity at Bombay is after reduction of 0.80 million tonnes for 4 berths handling containers.
4. CONTAINERS : The capacity has been arrived at on the basis of 1 T.E.U = 12 tonnes.

MULTI MODAL CONCEPT - ROLE OF ICDS

✓ 4.9 The container technology which the developed countries were quick to adopt in their sea ports initially and extend to hinterland key points subsequently met with some resistance initially in the developing world ports. Like other technologies, its adoption demanded difficult to find investible resources for acquiring sophisticated equipment and building up specialized infrastructural facilities. It also requires skilled man-power which was, and still continues to be, a scarce resource in the developing countries. Formidable problems also arise in the integration and internalization of technological changes from manual handling to capital intensive mechanised systems. Understandably the pace of adoption of this technology in the developing countries has been slow. The developing countries however marched relentlessly forward and achieved the objective while trading with each other, of door to door delivery of cargoes from consignors to consignees at economic costs. The shippers demanded - containerization is a buyer induced phenomenon - that transport costs should no longer be viewed in terms of any specific segment of the transport chain but as a whole and the through transport package made attractive. The multi modal concept thus assumed meaning and content. Its success depends on the ability of all agencies comprising the various elements of the total transport chain to work in closest coordination. The traditional concept of pier to pier delivery of cargoes with vessel owners exercising the choice of vessels for trade between various ports based on different cost levels lost its relevance. The maritime industry's concern for and attention to quick vessel turn round got extended to container turn round as well. The need for development of inland depots with adequate rail-road linkages between them and the gateway ports for quick, safe and efficient transfer of cargoes was thus established.

ICDS, in reality extensions of sea ports, are now playing an important role in promoting multi-

modal transport in the developed countries. These depots provide facilities for aggregation, stuffing and unstuffing of containerisable cargoes, container stacking areas, railway sidings, truck parking sites, equipment and other infrastructure, customs examination, documentation, banking and telecommunication and office accommodation for shipping/agents, freight forwarders etc.

Multimodalism, it has been established, helps reduce transport and warehousing costs, generates savings in foreign exchange, permits of effective national control over the entire transport system and ensures optimal utilization of national infrastructure.

It is pertinent to mention here that because of our somewhat guarded response to this technology in the past, induced by factors not amenable to easy solution, the potential benefits of container technology have remained largely untapped even though our ports have been handling a relatively large throughput of containers since the last decade by conventional means. The foreign flag vessels which incidentally have dominated our container trade so far, have been complaining, and not without justification, that the cost benefits flowing out of new production technologies in shipping have been counter balanced by diseconomies of Indian ports compounded by lack of infrastructural and other facilities in the hinterland.

In the interest of the Indian economy and the maritime industry generally and foreign trade particularly, India can no longer afford to react passively to the technological changes in

this area. Multimodalism has to be promoted vigorously. It follows that all agencies involved viz. ports, railways and road hauliers and shippers must work in close collaboration. It is in this context and also in line with its recommendations to increase the level of containerisation around 15% at present to 50% of the total general cargo throughput in major ports, that the Working Group endorses the proposal of the Railways to set up, during the Seventh Plan period, a net work of 21 full fledged ICDS and also for increasing the availability of unit trains to transport containers to and from the gate way ports to the hinterland centres quickly and efficiently. The proposal for setting up of export processing centres by the Ministry of Commerce as feeder centres to the ICDS is also well conceived and deserving of support. If the railways are enabled to provide a reliable service and comparable level of facilities at ICDS, container traffic from and to ICDS is bound to increase. If shippers, the bulk of whom own small industries and businesses are afforded facilities for consolidation of cargoes at inland centres and spared the expenditure on administrative overheads, they have necessarily now to incur for moving their goods from the hinterland to the coast, transport costs will come down to competitive levels in the international market.

The port industry will benefit equally in- as-much as it will enable the gate way ports to optimise the use of available facilities and increase container throughput. Improvement in vessel turn round and container turn round will exercise a healthy influence on freight rates and port costs and charges as well.

INLAND CONTAINER DEPOTS (FOR INTERNATIONAL CARGO)

4.10 It was envisaged in the Sixth Five Year Plan period that ICDs would be set up at Bangalore, Delhi and Ahmedabad. Pending establishment of regular fullfledged ICDs at Bangalore (Whitefield) Delhi (Tughlakabad), pilot ICDs have already been set up at Bangalore Cantt. (August '81) and Pragati Maidan Siding, New Delhi (March 1984). In case of Ahmedabad, the land acquisition proceedings have become sub-judice and the feasibility of selecting an alternative site in Ahmedabad area is being explored. Three other pilot ICDs have also become functional at Guntur, Anaparti (April '83) and Coimbatore (October '83). The work of setting up an ICD at Amingaon (Gauhati) has also since been included in the 1984-85 to be in readiness for dealing with tea exports commencing from the next season.

/Final
Works
Programme
of N.E.
Railway
for the
year

LOCATIONS OF REGULAR ICDS

4.11 Taking into account the reports of the various Study Groups in the past and the present pattern of movement of export/import cargo, the Sub-Group on the Container Traffic constituted in connection with formulation of Railways' Seventh Five Year Plan has come to the conclusion that during the Seventh Plan period full-fledged ICDs will have to be established at the following places linking the various ports, in the following order of priority :-

ICDs ✓

✓
Gateway Ports

1. Bangalore(Whitefield)... Madras and Cochin already linked.
Bombay will have to be linked in addition.

| <u>I C Ds</u> | | <u>Gateway Ports</u> |
|---------------------------|-----|------------------------------|
| 2. ~~Cal~~ mbatore | ... | Madras and Cochin. |
| 3. Guntur | ... | Madras |
| 4. Anaparti | ... | Madras |
| 5. Delhi (Tughlakabad)... | | Bombay, Calcutta and Madras. |
| 6. Amingaon (Gauhati)... | | Haldia/Calcutta |
| 7. Ahmedabad | ... | Bombay |
| 8. Ludhiana | ... | Bombay and Haldia/Calcutta |
| 9. Hyderabad | ... | Madras and Bombay |
| 10. Varanasi | ... | Bombay and Haldia/Calcutta |
| 11. Kanpur | ... | --do-- |
| 12. Pune | ... | Bombay |
| 13. Quilon | ... | Cochin |
| 14. Ranchi | ... | Haldia/Calcutta |
| 15. Gorakhpur | ... | --do-- |
| 16. Giridih | ... | --do-- |
| 17. New Jalpaiguri | ... | --do-- |
| 18. Moradabad | ... | Bombay |
| 19. Agra | ... | Bombay |
| 20. Jammu Tawi | ... | Bombay |
| 21. Mirzapur | ... | Haldia/Calcutta |

POL Traffic - 7th Five Year Plan

KANDLA PORT

(All in '000 tonnes/yr)

| Y e a r | MS | Naptha | ATF | SKO | HSD | LDO | FO | Total |
|---------|----|--------|-----|-----|------|-----|------|-------|
| 1985-86 | 52 | (561) | - | - | 1956 | 305 | 684 | 3558 |
| 1986-87 | - | (556) | - | 62 | 1843 | 305 | 1540 | 4306 |
| 1987-88 | - | (513) | - | 198 | 2782 | 312 | 1589 | 5394 |
| 1988-89 | - | (205) | - | 367 | 3309 | 312 | 1654 | 5847 |
| 1989-90 | - | (17) | - | - | 2614 | 258 | 1499 | 4388 |
| 1990-91 | - | (11) | - | - | 2734 | 245 | 1477 | 4467 |
| 1991-92 | - | - | - | - | 2890 | 229 | 1413 | 4532 |

NOTES: (1) Small quantities of K-60 ATF imports will continue to be received at Kandla (10 to 20 per year).

(2) Port cannot handle these levels of traffic and quantities above 2.5 mtpa need to be diverted elsewhere.

(3) This needs development of a jetty and full fledged terminal at Vadinar - to handle HSD/FO volumes of around 2.5 - 3.0 mtpa levels.

(4) Naptha figures indicate (-) exports of surplus naptha. All other products are either coastal or import receipts.

POL Traffic - 7th Five Year Plan

VADINAR PORT

(All in '000 tonnes/Yr)

| Y e a r | Crude Receipt | | | Proposed POL Receipt | | |
|---------|---------------|------|-------|----------------------|------|-------|
| | PG | BH | Total | SD | FO | Total |
| 1985-86 | 4245 | 5155 | 9400 | 400 | 684 | 1084 |
| 1986-87 | 4245 | 5155 | 9400 | 800 | 1000 | 1800 |
| 1987-88 | 4245 | 5155 | 9400 | 1600 | 1200 | 2800 |
| 1988-89 | 4245 | 5155 | 9400 | 2100 | 1200 | 3300 |
| 1989-90 | 5865 | 6775 | 12640 | 1100 | 1200 | 2300 |
| 1990-91 | 6405 | 7315 | 13720 | 1200 | 1200 | 2400 |
| 1991-92 | 6945 | 7855 | 14800 | 1300 | 1200 | 2500 |

NOTES:(1) Vadinar SBM is designed for 15 MTPA and hence no major problems are anticipated during the 7th Plan period for crude receipts. Some modifications may be needed to sustain near-design operations from 91/92 onwards.

(2) A full-fledged oil receipt/storage/rail-loading Terminal needs to be developed at Vadinar - including provision of a new jetty, docklines (1 each for white/black oils), tankage of 175000 tonnes for White Oils and 100,000 tonnes for Black Oils (30 days cover at peak load), B.G. rail linkage of 20 Kms, rail loading gantry and other facilities. Capital investment for above is estimated at Rs.37 crores by Oil Industry and around Rs.6 crores by Railways for the rail track connection.

This is vitally needed to unload Kandla and maintain supplies to NW. This Terminal is needed to be operational by 1985-86 and hence has to be constructed on top priority.

POL Traffic - 7th Five Year Plan

BOMBAY PORT

| (All in '000 Tonnes/Yr) | | | | | | | | | | | |
|-------------------------|-----------|--------|-------|------|--------------|-----|------|-------|-------|------|-------|
| Year | Crude - A | | | | Products - B | | | | A + B | | |
| | PG in | BH out | Total | MS | Nap* | ATF | SKO | HSD | LDO | FO | Total |
| 1935-86 | 3015 | 13500 | 16515 | (52) | 115 | -- | 711 | (619) | (258) | 982 | 3190 |
| m | | 8355 | 11370 | | (453) | | | | | | 19705 |
| h-m | | | | | | | | | | | 14560 |
| 1936-87 | 3015 | 13500 | 16515 | (24) | 115 | -- | 965 | (409) | (258) | 1012 | 3214 |
| m | | 8355 | 11370 | | (453) | | | | | | 19729 |
| n-m | | | | | | | | | | | 14584 |
| 1937-88 | 3015 | 13500 | 16515 | -- | (312) | -- | 1072 | (205) | (258) | 1057 | 2904 |
| m | | 8355 | 11370 | | | | | | | | 19419 |
| n-m | | | | | | | | | | | 14274 |
| 1938-89 | 3015 | 13500 | 16515 | -- | (312) | -- | 1160 | -- | (258) | 1091 | 2821 |
| m | | 8355 | 11370 | | | | | | | | 19336 |
| n-m | | | | | | | | | | | 14191 |
| 1989-90 | 3015 | 16740 | 19755 | 79 | (312) | 62 | 741 | 223 | (258) | 1136 | 2911 |
| m | | 9965 | 12980 | | | | | | | | 22566 |
| n-m | | | | | | | | | | | 15791 |
| 1990-91 | 3015 | 19440 | 22455 | 120 | (312) | 96 | 967 | 446 | (249) | 1160 | 3350 |
| m | | 12125 | 15140 | | | | | | | | 25805 |
| n-m | | | | | | | | | | | 13490 |
| 1991-92 | 3015 | 21060 | 24075 | 164 | (312) | 132 | 1125 | 684 | (233) | 1167 | 3817 |
| m | | 13205 | 16220 | | | | | | | | 27892 |
| n-m | | | | | | | | | | | 20037 |

all BH crude has to come to Uran via submarine pipelines and has to be loaded into the tankers for outward movement at Bombay Port. For these 5 months, therefore, Bombay Port traffic will be at the highest possible level. During the non-monsoon period i.e., for about 7 months of the year, the traffic will ~~be at the normal level.~~

- (2) Figures in brackets i.e. (619) etc. indicate outward movement of products. Other bracketed figures indicate product movement into Bombay.
- (3) *Bombay will need LAN inputs and HAN outputs until BPC's new Aromatic project becomes operational. Thereafter no LAN inputs would be needed into Bombay.
- (4) With four jetties being operational from 1984 onwards, the parcel size of incoming/outgoing crude cargoes will increase to 75,000/65,000 MTs respectively. A 65,000 MT crude parcel can be loaded within 24 hours at the new fourth jetty. At the existing jetties a crude parcel of around 40,000 MTs can be loaded within 24 hours. Considering this, the available facilities at Bombay Port would be able to handle the estimated crude and other product traffic satisfactorily.
- (5) BPCI's additional tankage project at Butcher Island would be operational during the 7th Plan period. With this, tanker discharge rates would be substantially increased and hence no problem is foreseen in handling the estimated product traffic of around 3.8 million tonnes for the year 1991-92.
- (6) Existing crude and product lines connecting the Butcher Island Marine Control Terminal to the Bombay Refineries/Terminals are over 28 years old. Because of the long distances involved, the discharge rates over these lines are also not satisfactory. Though the new BPCI tankage at Butcher Island will enable fastest turn around of product tankers, the conditions of the connecting lines can cause problems in transporting the products from Butcher Island to Bombay installations. It is, therefore, necessary that these lines (crude as well as product lines) are replaced with larger size lines at the earliest. Provisions of booster pumps at Butcher Island would also be necessary to ensure satisfactory pumping rates over the main line.

- (7) Bombay Port Trust have expressed some reservations regarding the capacity of the Butcher Island jetty structures to accommodate larger lines. This will have to be investigated in detail and if necessary, the structures will have to be strengthened.

Contd.....

Table No.3(Contd.)

Industry assessment of the augmentation of pipeline and other facilities at Butcher Island, as communicated to Bombay Port Trust in September 1982, is summarised below:--

- i) Additional 24" line for discharging SKO/ATF.
- ii) Replacement of W-3 flushing line by 24" dia mainline.
- iii) Provision of booster pump at Pir Pau for improving black oil discharge.
- iv) Provision of additional 36" dia crude line connecting Butcher Island to the Refineries.
- v) Provision of a booster pump of adequate capacity and shore facilities for improving the flushing tank.

(8) The Draft at Pir Pau Jetty has progressively decreased due to siltation and presently stands at around 10-13' only. Immediate steps will have to be taken to restore this Draft to the previous levels of around 23' by conducting dredging operation. In addition to this, dredging operations are also necessary to improve the Drafts on the existing 3 jetties at Butcher Island.

(9) Port Trust will also have to provide adequate capacity tugs for maintaining satisfactory operations at Butcher Island. Additional moving launches will also have to be procured by the Port Trust.

(10) Communication facilities between Butcher Island and Bombay installations have deteriorated substantially. These will have to be restored.

(11) Pipeline control facilities at Bombay Port are not adequate. These will have to be improved by provision of suitable skimmers, spill containment booms and oil collection vessels with facilities to distribute chemical dispersions.

(12) Dirty ballast receiving facilities at Butcher Island are not adequate and will need improvement via provision of larger dia ballast lines and efficient oil - water separators.

(13) A study of the estimated POL traffic at Bombay Port over the 7th Plan period indicates that incoming product traffic shows a steep increase from 1989-90 onwards. It will be seen that almost all products are deficit, Naptha/LDO being

Contd..

Table No.3(Contd.)

the only two exceptions in 1991-92. For example as much as 3.27 million tonnes of petroleum products will have to be brought into Bombay via coastal movement/imports. In the context of the above, a strong case exists for generation of additional refining capacity in or around Bombay or in the hinterland so as to replace this heavy product importation by equivalent crude importation. A new refining capacity of around 4 MTPA would eliminate the inward movement of 3.2 MTPA petroleum products.

Considering the distribution pattern of petroleum products ex-Bombay as well as geographical factors, creation of additional refining capacity at locations in Central India seems warranted. This would of course need a provision for transporting crude from Bombay to such a Refinery via the construction of a new crude pipeline. This aspect needs to be considered further so that the required action gets initiated during the 7th Plan period.

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NOTES: (1) No major problems are anticipated in handling these levels of product receipts.

(2) Port should provide night navigation to DP tankers, a flushing pump and mechanical loading arms.

POL Traffic - 7th Five Year Plan

MANGALORE PORT

(All in '000 tonnes/yr)

| Y e a r | Crude | MS | Nap. | ATF | SKO | HSD | LDO | FO | TOTAL |
|---------|-------|-------|------|-----|--------|--------|-----|-------|-------|
| 1985-86 | - | 30 | 202 | - | 53 | 140 | - | 71 | 496 |
| 1986-87 | - | 32 | 211 | - | 56 | 150 | - | 72 | 521 |
| 1987-88 | - | 35 | 227 | - | 60 | 162 | - | 73 | 557 |
| 1988-89 | - | 37 | 248 | - | 64 | 174 | - | 75 | 598 |
| 1989-90 | - | 40 | 265 | - | 69 | 187 | - | 76 | 637 |
| 1990-91 | 3240 | (95) | 30 | - | (849) | (906) | - | (323) | 5443 |
| 1991-92 | 4320 | (137) | (49) | - | (1143) | (1262) | - | (441) | 7352 |

- NOTES:(1) Figures in brackets indicate outward movements.
- (2) No problems are anticipated in handling above volumes at this port.
- (3) Actual movements during 1990/92 would be lower than above projected figures by the extent of product volumes carried by the new Mangalore-Bangalore pipeline. These quantities have yet to be determined.
- (4) Port authorities have to provide a new crude jetty and a new product jetty alongwith docklines, pollution control facilities, tugs etc. for handling the crude and other traffic anticipated from 1990/91 onwards. These investments have to be estimated and provided for by Ministry of Shipping and Transport.

POL Traffic - 7th Five Year Plan

COCHIN PORT

(All in '000 Tonnes/Yr)

| Y e a r | Crude | MS | Naptha | ATF | SKO | HSD | LDO | FO | TOTAL |
|---------|-------|------|--------|-----|-------|-------|-----|-----|-------|
| 1985-86 | 4200 | (53) | (659) | - | (526) | (140) | - | 78 | 5656 |
| 1986-87 | 4200 | (32) | (609) | - | (507) | (38) | - | 94 | 5480 |
| 1987-88 | 4200 | (35) | (587) | - | (485) | 64 | - | 129 | 5500 |
| 1988-89 | 4200 | (37) | (644) | - | (456) | 174 | - | 169 | 5680 |
| 1989-90 | 4200 | (25) | (676) | 8 | (428) | 292 | - | 206 | 5835 |
| 1990-91 | 4200 | - | (688) | 10 | (140) | 160 | - | 91 | 5289 |
| 1991-92 | 4200 | 10 | (503) | 12 | - | 191 | - | 178 | 5094 |

NOTES: (1) Figures in () indicate outward movement.

(2) No problems are anticipated in handling above volumes.

(3) 1990-91 and 1991/92 reduced volumes reflect the impact of Mangalore Refinery start up.

POL Traffic - 7th Five Year Plan

TUTICORIN PORT

(All in '000 Tonnes/Yr)

| Y e a r | Naptha | FO | Total |
|---------|--------|-----|-------|
| 1985-86 | 353 | 240 | 593 |
| 1986-87 | 370 | 252 | 622 |
| 1987-88 | 396 | 264 | 660 |
| 1988-89 | 432 | 276 | 708 |
| 1989-90 | 462 | 288 | 750 |
| 1990-91 | 469 | 294 | 763 |
| 1991-92 | 472 | 300 | 772 |

NOTES: No problems are anticipated in
handling these volumes.

POL Traffic - 7th Five Year Plan

MADRAS PORT

(All in '000 tonnes/Yr)

| Y e a r | Crude | MS | Nap. | ATF | SKO | HSD | LDO | FO | TOTAL |
|---------|-------|----|-------|-------|-------|-------|-----|-----|-------|
| 1985-86 | 5194 | - | (576) | - | (465) | (205) | - | 363 | 6803 |
| 1986-87 | 5194 | - | (564) | - | (430) | (112) | - | 381 | 6681 |
| 1987-88 | 5194 | 4 | (555) | - | (390) | (5) | - | 411 | 6559 |
| 1988-89 | 5194 | 19 | (555) | - | (305) | 118 | - | 445 | 6636 |
| 1989-90 | 5194 | 35 | (555) | (78) | (202) | 250 | - | 474 | 6788 |
| 1990-91 | 5194 | 52 | (555) | (114) | (49) | 331 | - | 517 | 6812 |
| 1991-92 | 5194 | 70 | (555) | (152) | 15 | 524 | - | 573 | 7083 |

NOTES:- (1) Figures in () indicate outward movement.

(2) No problems anticipated in handling these volumes with the facilities already planned to be provided for.

POL Traffic - 7th Five Year Plan

VIZAG PORT

(All in '000 tonnes/Yr)

| Year | Crude | MS | Nap. | ATF | SKO | HSD | LDO | FO | TOTAL |
|---------|-------|-------|-------|-----|-------|--------|------|-----|-------|
| 1985-86 | 3789 | (340) | (157) | - | (309) | (617) | (47) | 104 | 5363 |
| 1986-87 | 4108 | (399) | (159) | - | (254) | (729) | (47) | 86 | 5782 |
| 1987-88 | 4108 | (392) | (159) | - | (235) | (659) | (47) | 111 | 5711 |
| 1988-89 | 4108 | (418) | (159) | - | (362) | (1024) | (56) | 78 | 6205 |
| 1989-90 | 4108 | (344) | (246) | - | (315) | (883) | (9) | 58 | 5963 |
| 1990-91 | 4108 | (323) | (247) | - | (291) | (824) | (9) | 92 | 5894 |
| 1991-92 | 4108 | (406) | (159) | - | (264) | (760) | (9) | 139 | 5845 |

NOTES:(1) Figures in () indicate outward movement.

(2) No problems anticipated in handling above volumes with facilities already planned to be provided.

(3) Paradip terminal assumed operational in 1988-89.

POL Traffic - 7th Five Year Plan

PARADIP PORT

(All in '000 tonnes/Yr)

| -0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0- | | | | | | |
|---|----|-----|-----|-----|----|-------|
| Y e a r | MS | SKO | HSD | LDO | FO | TOTAL |
| ----- | | | | | | |
| 1988-89 | 30 | 127 | 365 | 9 | 61 | 592 |
| 1989-90 | 32 | 137 | 392 | 9 | 61 | 631 |
| 1990-91 | 35 | 148 | 420 | 9 | 61 | 672 |
| 1991-92 | 37 | 161 | 449 | 9 | 61 | 778 |
| ----- | | | | | | |

- NOTES: (1) No problems anticipated with facilities planned to be provided.
- (2) Provision of a new jetty yet to be decided upon by Port authorities.
- (3) New Terminal capital investment of around Rs. 25 crores.
-

POL Traffic - 7th Five Year Plan

HALDIA PORT

(All in '000 Tonnes/Yr)

| Y e a r | Crude | MS | Nap. | ATF | SKO | HSD | LDO | FO | TOTAL |
|---------|-------|-----|-------|-----|-----|-----|-----|-----|-------|
| 1985-86 | 2250 | - | (124) | - | 733 | 509 | - | 607 | 4223 |
| 1986-87 | 2250 | - | (118) | - | 771 | 729 | - | 730 | 4589 |
| 1987-88 | 2250 | 135 | (42) | - | 625 | 659 | - | 532 | 4243 |
| 1988-89 | 2250 | 219 | 21 | - | 794 | 898 | - | 627 | 4809 |
| 1989-90 | 3870 | 155 | 13 | - | 265 | 560 | - | 550 | 5413 |
| 1990-91 | 4410 | 189 | - | - | 192 | 645 | - | 574 | 6010 |
| 1991-92 | 4950 | 230 | (43) | - | 88 | 755 | - | 590 | 6656 |

NOTES:(1) Figures in () indicate outward movement.

(2)North-East sector LDO surplus assumed to be used so as to eliminate equivalent FO imports.

(3)With facilities planned to be provided, no problems anticipated in handling above volumes.

CHAPTER - V

DEVELOPMENT SCHEMES FOR THE MAJOR PORTS
FOR THE FIVE YEAR PLAN (1985-90)

5.1 In the Sixth Five Year Plan, an outlay of Rs. 521 crores was provided for the development schemes of the ten major ports. Based on the actual expenditure during the first three years of the Sixth Plan, revised estimates for 1983-84 and the Annual Plan allocation for 1984-85, the overall investment in Sixth Plan on major ports, excluding Nhava Sheva Port project will be about Rs. 600 crores.

5.2 The construction of a new major port at Nhava Sheva near Bombay was sanctioned in June 1983 at an estimated cost of Rs. 506 crores. Out of this, only an amount of Rs. 36 crores is expected to be spent during the Sixth Plan period. The balance amount of Rs. 470 crores will be required during the Seventh Plan.

5.3 The total outlay for spill over and new schemes for the Seventh Plan as projected by the port was of the order of Rs. 2304 crores. This included a provision of Rs. 165 crores for Sethusamudram Canal Project projected by the Tuticorin Port. The Report of Expert Committee set up to examine the economic viability of the Sethusamudram Ship Canal Project is under examination in consultation with the Ministries of Defence and External Affairs and the Planning Commission. In case it is decided to implement this Project, suitable provision in the VII Five Year Plan will have to be made.

5.4 The Development Schemes for the Seventh Plan proposed in this Report have been listed in the following order of priority :-

- (a) All the spill-over schemes to be completed during the early period of the Seventh Plan.
- (b) Replacement of cargo handling equipment and floating crafts.
- (c) Schemes envisaging improvement/modernisation of existing facilities.
- (d) Addition of berth and cargo handling equipment in the context of projected traffic and cargo mix to ensure better utilisation of port facilities.

5.5 There have been repeated demands from the State Governments and also from the Members of the National Harbour Board for the revival of the system of financial assistance to the minor ports and also upgradation of certain intermediate and minor ports into Major Ports.

As far as central assistance to the development of minor ports is concerned, the Working Group felt the need of their development in the context of its complementary role to the major ports. The Working Group recommends the grant of central assistance on 50 : 50 basis and accordingly a provision of Rs. 100 crores has been made in the 7th Plan. The respective maritime State Governments would provide matching

provision in their respective State Plan under the Port Sector. The role of minor ports and the necessity of their development has been discussed separately in chapter XI.

5.6 Considering the vast land area of the country to be served by the ports, and the time it will take to plan and develop facilities appropriate for a major port, the Working Group felt that it would be necessary to develop at least two new major ports during the 7th Plan i.e. one on the east coast and one on the west coast, apart from Nhava Sheva which is under execution. Accordingly the Working Group recommends the development of two major ports during the 7th Plan, viz. Kakinada on east coast and either Pipau in Gujarat or Karwar in Karnataka on west coast. Details of the existing facilities and their potential for further development can be seen in annexure-I.

A token provision of Rs. 25 crores has been made in the 7th Plan for conversion of these intermediate ports into major ports as suggested above. In case a decision is taken to develop any major port during the 7th Plan, additional funds will have to be provided in the Plan. In case it is decided not to develop any major port, provision of Rs. 100 crores being made for development of minor ports will have to be suitably enhanced to cover development of these ports.

5.7 Sethusamudram Project:

The need for the Sethusamudram Canal Project which envisages the cutting of a shipping canal

across Rameswaram Island to connect Gulf of Mannar and Palk Bay has been long felt (Please refer Annexure-II). Since this project will benefit the merchant navy as well as contribute to the defence preparedness of the country, it is suggested that the expenditure on this project may be shared by the Ministry of Shipping and Transport and the Ministry of Defence on 50 : 50 basis. Even though it is a shipping project and the ports do not really benefit from the project, a token provision of Rs. 10 crores for this purpose is being made in the Ports Sector.

5.8 The Working Group recommends an outlay of Rs. 1500 crores for the development schemes of the 11 major ports including upgradation of two intermediate ports as major ports; Rs. 10 crores for Sethusamudram Shipping Canal Project and Rs. 100 crores for development of minor/intermediate ports under central assistance. The portwise details of the outlay are given in the Table on next page.

OUTLAY FOR SEVENTH FIVE YEAR PLAN

(Rs. in crores)

| P o r t | New Schemes | | | | | Total
outlay
(1985-90) |
|---|----------------------------|------------------|---------------------|----------|--------|------------------------------|
| | Conti-
nuing
Schemes | Replac-
ment. | Moderni-
sation, | Addition | Total | |
| 1. | 2. | 3. | 4. | 5. | 6. | 7. |
| 1(a) Calcutta | 12.40 | 39.60 | 13.25 | 9.75 | 62.60 | 75.00 |
| (b) BHRTW | 34.00 | -- | -- | -- | -- | 34.00 |
| (c) Haldia | 34.05 | 2.00 | 12.75 | 28.20 | 42.95 | 77.00 |
| 2. Bombay | 44.00 | 9.13 | 58.37 | 48.50 | 116.00 | 160.00 |
| 3. Madras | 31.70 | 27.05 | 8.40 | 40.85 | 76.30 | 108.00 |
| 4. Cochin | 25.50 | 4.85 | 2.90 | 37.75 | 45.50 | 71.00 |
| 5. Visakhapatnam | 10.20 | 26.90 | 9.10 | 19.80 | 55.80 | 66.00 |
| 6. Kandla | 4.60 | 28.20 | 2.35 | 49.85 | 80.40 | 85.00 |
| 7. Mormugao | 1.30 | 14.75 | 4.50 | 51.45 | 70.70 | 72.00 |
| 8. Paradip | 19.90 | 20.40 | 8.15 | 58.55 | 87.10 | 107.00 |
| 9. New Mangalore | 16.60 | 1.50 | 5.65 | 68.30 | 75.40 | 92.00 |
| 10. Tuticorin | 4.75 | 3.75 | 2.15 | 38.35 | 44.25 | 49.00 |
| 11. Nhava Sheva | 470.00 | -- | -- | -- | -- | 470.00 |
| 12. Port Management Instt. | -- | -- | -- | 6.00 | 6.00 | 6.00 |
| 13. R & D Schemes | 0.17 | -- | -- | 0.83 | 0.83 | 1.00 |
| 14. New Port Technology | -- | -- | -- | 2.00 | 2.00 | 2.00 |
| 15. Upgradation of 2 intermediate ports as major Ports. | -- | -- | -- | 25.00 | 25.00 | 25.00 |
| Grand Total: | 709.17 | 178.13 | 127.57 | 485.13 | 790.83 | 1500.00 |

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(Rs. in crores)

~~-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-~~

| Port | Schemes | Updated
cost. | Expenditure
during 6th
Plan. | Spill
over to
7th Plan. |
|------|---------|------------------|------------------------------------|-------------------------------|
| 1. | 2. | 3. | 4. | 5. |

| Location | Project Description | Estimated Cost (Rs. Lakhs) | Actual Cost (Rs. Lakhs) | Percentage of Completion |
|----------|--|----------------------------|-------------------------|--------------------------|
| Calcutta | 1. <u>Development of container park, etc. Ist Phase.</u> | <u>10.36</u> | 1.26 | 9.10 |
| | 2. <u>Comprehensive scheme for improvement in Hooghly Estuary.</u> | <u>40.50</u> | 6.50 | 34.85 |
| Haldia | 1. Second Oil Jetty at Haldia with two tractor tugs. | <u>31.45</u> | 0.53 | 30.92 |
| Bombay | 1. Replacement of S.T. Arjun | 5.73 | 3.48 | 2.25 |
| | 2. Replacement of S.T. Anand | 5.70 | 3.17 | 2.53 |
| | 3. Replacement of S.T. Amar | 5.73 | 2.38 | 3.35 |
| | 4. Construction of R.C.C. trestle in replacement of existing steel trestle at Pir Pau berth. | 8.50 | 0.12 | 8.38 |
| | 5. Reconstruction of transit shed No.6 Indira Dock | 5.50 | 0.05 | 5.45 |
| Madras | 1. Outer Arm | 11.42 | 9.42 | 2.00 |
| | 2. Additional Oil Berth | 20.51 | 10.31 | 10.20 |

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-

1. 2. 3. 4. 5.

Madras (Contd) 3. Deepening of Bharati Dock 30.00 18.80 11.20

Cochin 1. Procurement of two transfer crane, two fork lifts and electrical civil works. 5.60 4.90 0.70

2. Procurement of a dredger to replace 'Lady Willington' 18.00 0.50 17.50

3. Port's share towards cost of link road and bridge. 6.00 5.30 0.70

Visakhapatnam 1. Construction of oil berth 24.10 18.80 5.30

Kandla 1. Sixth Cargo berth 17.50 17.30 0.20

Mormugao 1. Construction of multi-purpose general cargo berth. 11.41 10.66 0.75

Paradip 1. Construction of 3rd general cargo berth 13.35 11.85 1.50

2. Construction of fertiliser berth 28.75 11.00 17.75

New Mangalore 1. Construction of another additional general cargo berth 9.80 0.40 9.40

2. Procurement of 30 ton bollard pull tug and one No. 22.5 Ton Tug 9.50 3.00 6.50

Tuticorin. 1. Construction of two additional general cargo berth 12.33 12.08 0.25

2. Deepening the entrance Channel to -10.9m level. 5.40 1.77 3.63

5.10 Important New Schemes costing more than Rs. 5 crores recommended by the Working Group for being taken up in the Seventh Plan.

| | | (Rs. in crores) | | |
|----------------|--|-------------------------|------------------------------|-------------------------------|
| P o r t | S c h e m e | Estima-
ted
cost. | Outlay
during
7th Plan | Spill
over to
8th Plan. |
| 1. | 2. | 3. | 4. | 5. |
| Cal-
cutta. | 1.Replacement of one
Pilot vessel | 12.00 | 5.00 | 7.00 |
| | 2.Replacement of
despatch vessel
"NADIA" | 10.00 | 6.00 | 4.00 |
| | 3.Replacement of
swing bridge No.1 | 5.00 | 5.00 | -- |
| | 4.Container equip-
ments. | 7.50 | 3.50 | 4.00 |
| Haldia | 1.One additional
700 ft. long berth | 9.00 | 9.00 | -- |
| | 2.Residential quarters
at Chiranjibpur | 5.00 | 5.00 | |
| | 3.Container handling
facilities | 10.00 | 8.00 | 2.00 |
| Bombay | 1.Improved oil and
chemical handling
facilities at
Butcher Island &
Fir Pau including
construction of a
berth at Fir pau | 21.00 | 21.00 | -- |
| | 2.Construction of
an offshore pilot
station | 10.00 | 10.00 | -- |
| | 3.Construction of
quarter and provi-
sion of welfare
facilities | 10.00 | 10.00 | -- |

--: 90 :--

1. 2. 3. 4. 5.

| | | | | |
|--------|---|-------|-------|-------|
| | 4. Construction of warehouses of Haji Bunder Dump. | 11.00 | 11.00 | -- |
| | 5. Construction of a small boat harbour at Ballard Pier | 6.00 | 6.00 | -- |
| | 6. Container handling equipments. | 10.00 | 10.00 | -- |
| | 7. Modernisation of existing docks | 10.00 | 10.00 | -- |
| Madras | 1. Replacement of 2 Nos. tugs - PALAR & PENNAR | 11.00 | 11.00 | -- |
| | 2. Replacement of floating crane | 12.00 | 3.00 | 9.00 |
| | 3. Replacement of Dredger Cauvery | 15.00 | 3.00 | 12.00 |
| | 4. Addl. container facilities with extension of existing berth | 30.00 | 30.00 | -- |
| Cochin | 1. Procurement of container handling equipment, one gantry crane, two transfer cranes, one fixed gantry crane etc. & civil works. | 15.00 | 15.00 | -- |
| | 2. Acquisition of high power tug-30/50 HP | 5.50 | 5.50 | -- |
| Vizag. | 1. Replacement & modernisation to the iron ore loading facilities to sustain the performance | 6.00 | 6.00 | -- |
| | 2. Replacement of Locomotives with high H.P. locomotives of 6 Nos. | 8.40 | 8.40 | -- |

1. 2. 3. 4. 5.

| | 1970-71 | 1971-72 | 1972-73 |
|---|---------|---------|---------|
| 3. Procurement of a 30 tonnes bollard pull tug to replace 2 tugs 'Nagarajuna' and Dolphin | 5.50 | 5.50 | -- |
| 4. Construction of a berth in replacement of 3 Jetty berth | 5.00 | 5.00 | -- |
| 5. Upgrading Ore handling | 10.00 | 10.00 | -- |
| Kandla 1. One twin screw diesel driven kurt nozzle tug of 30-T BP Tug | 5.50 | 5.50 | -- |
| 2. One twin screw diesel driven suction hopper dredger in replacement of S.D. Kandla capacity 2500 cu.m. | 20.00 | 20.00 | -- |
| 3. VII General Cargo berth | 22.00 | 10.00 | 12.00 |
| 4. Port facilities at Vadinar | | | |
| (a) For handling POL Products. | 10.00 | 10.00 | -- |
| (b) For bulk cargo | 15.00 | 15.00 | -- |
| Mormugao 1. Replacement of tug 'Dona Paula' | 5.50 | 5.50 | -- |
| 2. Additional barge unloading Jetty including provision for one unloader with related conveyor & modification to the shipping system. | 5.50 | 5.50 | -- |
| 3. Construction of an additional cargo berth | 14.00 | 14.00 | -- |
| 4. Procurement of Transhipper | 20.00 | 20.00 | -- |
| 5. Housing for staff | 6.00 | 6.00 | -- |

1. 2. 3. 4. 5.

| Location | Item | 1950-51 | 1951-52 | 1952-53 |
|---------------|--|---------|---------|---------|
| Paradip | 1. Sand bypassing arrangements construction of island breakwater and sand trap dredging. | 10.00 | 10.00 | -- |
| | 2. Capital dredging to deepen the channel, turning circle & bulk cargo berth | 10.00 | 10.00 | -- |
| | 3. Construction of residential quarters for port Engineers A, B, C & D | 5.00 | 5.00 | -- |
| | 4. Replacement & procurement of floating craft | 10.00 | 6.00 | 4.00 |
| | 5. Mobile suction dredger | 20.00 | 15.00 | 5.00 |
| | 6. Procurement & replacement of cargo handling equipment. | 5.00 | 4.00 | 1.00 |
| | 7. Coal handling facilities | 10.00 | 10.00 | -- |
| Tuticorin | 1. Construction of one more coal berth | 11.00 | 11.00 | -- |
| | 2. Procurement of 1 No. twin screw tug of 30-T Bollard Pull | 5.50 | 5.50 | -- |
| | 3. Construction of an additional cargo berth | 8.00 | 8.00 | -- |
| New Mangalore | 1. Construction of one more general cargo berth | 12.00 | 4.00 | 8.00 |

| | | | |
|--|--------|-------|--------|
| 2. Port facilities including berth for proposed Refinery | 53.00 | 53.00 | -- |
| 3. Upgradation of 2 intermediate ports as major ports. | N.A. | 25.00 | 25.00 |
| 4. Sethu Samudram Project | 282.00 | 10.00 | 272.00 |

5.11 Justification in respect of the major new schemes recommended ^{above} for inclusion in the VII Plan is given in Annex-III.

5.12 Port-wise details of the schemes proposed for inclusion in the VII Plan are furnished in the following statement.

(Rs. in crores)

| Scheme | Estimated cost | Outlay in 7th Plan. | Foreign exchange component |
|--------|----------------|---------------------|----------------------------|
| 1. | 2. | 3. | 4. |

A. Spillover Schemes:

| | | |
|---|------|------|
| 1. Conversion of Hooper Barge
into Grab Dredger. | 2.66 | 0.35 |
| 2.a) Replacement of Hi Flux
"to do" | 2.04 | 0.40 |
| b) In house Computer | 0.40 | 0.40 |

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-1.-----2.-----3.-----4.---

| | | |
|---|-------|-------|
| 3. C.I.S.F. Quarters | 1.91 | 0.40 |
| 4. Replacement of M.L. Investigator | 0.35 | 0.25 |
| 5. Development of Container Park, etc. 1st Phase | 10.36 | 9.10 |
| 6. Replacement of outlived machinery in main workshop | 0.90 | 0.60 |
| 7. Replacement of one impounding pump | 0.96 | 0.60 |
| 8. Procurement of Eight Quay Cranes | 2.87 | 0.10 |
| 9. Hardstanding and Drainage at N.S. Dock | 0.30 | 0.20 |
| Total "A" | | 12.40 |

B. New Schemes

B(1) Replacement:

| | | |
|---|------|------|
| 1. Replacement of hydraulic engines etc. at NSD Power Station | 0.75 | 0.75 |
| 2. Replacement of machineries at South Workshop | 1.10 | 1.10 |
| 3. Replacement of 6 steam and 3 Diesel Loco by 4 Diesel locomotives | 2.00 | 2.00 |
| 4. Replacement of six 6-tonne and three 10-tonne capacity mobile cranes | 2.00 | 2.00 |
| 5. Replacement of 40 Nos. rail mounted Yard Cranes by mobile cranes | 3.00 | 3.00 |
| 6. Replacement of one 40-tonne capacity Loco Wrecking Crane | 0.50 | 0.50 |

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| | | | |
|---|-------|-------|------|
| 7. Replacement of Steam tug
"MALATI" | 2.50 | 2.50 | |
| 8. Replacement of Steam Dock
Tug "SEULI" | 2.50 | 2.50 | |
| 9. Replacement of Steam Dock
Tug "CHAMPA" | 2.50 | 2.50 | |
| 10. Replacement of Steam River
Tug "STALWART" with fire-
fighting equipment | 4.00 | 4.00 | 0.40 |
| 11. Replacement of R.S. Vessel
"Path Finder" by one vessel | 2.00 | 2.00 | 0.70 |
| 12. Replacement of one Pilot
Vessel | 12.00 | 5.00 | 0.75 |
| 13. Replacement of Despatch
Vessel "NADIA" | 10.00 | 6.00 | 0.75 |
| 14. Replacement of Light Vessel
"PLANET" | 0.75 | 0.75 | 0.10 |
| 15. Replacement of Swing
Bridge No.1 | 5.00 | 5.00 | |
| Total B(i) | | 39.60 | 2.70 |

B. (ii) Modernisation:

| | | |
|---|------|------|
| 1. Modernisation of Shipyard Sections | 2.00 | 2.00 |
| 2. Modernisation of Railway system | 3.00 | 3.00 |
| 3. Improvement of traffic circulation in and around Dock area | 1.00 | 1.00 |
| 4. Development of infrastructural facilities in and around Dock area (Water supply, Drainage, Widening entrance and exit gate, realignment of boundary wall, etc.). | 1.50 | 1.50 |

Calcutta

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-

1 2 3 4

| | | | |
|---|------|-------|------|
| 5. Development of storage facilities at K.P. Dock and N.S. Dock | 0.50 | 0.50 | |
| 6. Illumination of Dock area | 0.75 | 0.75 | |
| 7. Extension of Syledis position fixing system upto Howrah Bridge | 0.50 | 0.50 | 0.25 |
| 8. Miscellaneous capital works to be executed during 7th Plan - Lumpsum | 4.00 | 4.00 | |
| Total B(ii) | | 13.75 | 0.25 |

B(iii) Addition:

| | | | |
|---|------|------|------|
| 1. Two Nos. 40-tonne capacity Fork Lift Trucks | 1.00 | 1.00 | 0.50 |
| 2. Development of container handling facilities Phase-II | 7.50 | 3.50 | |
| 3. Residential quarters for CISF | 2.00 | 2.00 | |
| 4. Extension of mobile equipment repair shed at N.S. Dock | 1.00 | 1.00 | |
| 5. Anti Oil Pollution measure (as per MARPOL CONVENTION) | 1.50 | 1.50 | 0.15 |
| 6. Training Institute for Port and Dock Workers | 0.75 | 0.75 | |

| | | | |
|--------------|--|------|------|
| Total B(iii) | | 9.75 | 0.65 |
|--------------|--|------|------|

| | | | |
|---------|--|-------|------|
| Total B | | 62.60 | 3.60 |
|---------|--|-------|------|

| | | | |
|-------------------|--|-------|------|
| Total 'A' and 'B' | | 75.00 | 3.60 |
|-------------------|--|-------|------|

CALCUTTA

Bhagirathi Hooghly River Training Works (Continuing Scheme)

| | | | |
|--|-------|-------|------|
| 1. Comprehensive Scheme for improvement of drafts. | 40.50 | 34.00 | 6.50 |
|--|-------|-------|------|

HALDIA

(Ps. in Crores)

| S c h e m e | Estimated Outlay in F.E. Cost. | Seventh Plan. | Component. |
|-------------|--------------------------------|---------------|------------|
| (1) | (2) | (3) | (4) |

A. Spillover Schemes:

| | | |
|---|-------|-------|
| 1. Hard standing in the container yard and the backing area for new and existing one including drainage and ancillary building in the vicinity. | 1.00 | 0.25 |
| 2. Lighting arrangement in Dock and Township including coverage of additional roads. | 0.36 | 0.10 |
| 3. Second Oil Jetty at Haldia with tractor Tugs. | 31.45 | 30.92 |
| 4. Additional Workshop facilities | 0.40 | 0.40 |
| 5. Port Workers Training Schemes | 0.35 | 0.35 |
| 6. Acquisition of balance land | 0.90 | 0.85 |
| 7. Procurement of two additional Locomotives | 1.00 | 0.50 |
| 8. Providing facilities for slops | 0.70 | 0.68 |
| Total 'A' | | 34.05 |

B. New Schemes:

B(i) Replacement:

| | | |
|-----------------------------------|------|------|
| 1. Two Locomotives as replacement | 2.00 | 2.00 |
| Total B(i) | | 2.00 |

B(ii) Modernisation:

| | | |
|---------------------------------------|------|------|
| 1. Fire fighting arrangement in Dock. | 0.75 | 0.75 |
|---------------------------------------|------|------|

Haldia

(Rs. in crores)

----- (PS. III. C10195) -----

(1) (2) (3) (4)

| | | |
|--|------------------------------------|------------------------------------|
| 2. Construction of Roads inside and outside Dock | 2.00 | 2.00 |
| 3. Water supply to Dock inside and Residential areas linking the same with the State Government Scheme and Sewerage in second spine etc. | 0.90 | 0.90 |
| 4. Modification of Ore Plant for Handling Coal. | 1.00 | 1.00 |
| 5. Dust control arrangement and modification of shiploading chutes | 1.00 | 1.00 |
| 6. Increasing capacity of Railway Yards at Haldia | 1.80 | 1.80 |
| 7. Strengthening of existing Oil Jetty | ~~3.50~~
~~1.90~~ | ~~3.50~~
~~1.80~~ |
| 8. Residual work required at Fertiliser Handling System at Haldia | 1.80 | <u>1.80</u> |
| Total B(ii) | | <u>12.75</u> |

B(iii) Addition:

| | | |
|---|------|------|
| 1. Additional covered storage shed for general Cargo (40000 sq.ft.) | 1.80 | 1.80 |
| 2. Spillover and Hazardous Cargo Shed | 0.40 | 0.40 |
| 3. Second Barge Jetty on the river for P.O.L. | 0.40 | 0.40 |
| 4. Port Users Hostel-cum-Office Complex | 0.30 | 0.30 |
| 5. Additional 700 ft. length of General Cargo Berth | 9.00 | 9.00 |

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- | | | |
|--|-------|------|
| 6. Protection to River Bandh | 1.80 | 1.80 |
| 7. Residential Quarter at Chiranjibpur and Township | 5.00 | 5.00 |
| 8. Container Handling Facilities | 10.00 | 8.00 |
| 9. Improvement of infrastructural facilities like electrification, widening of entrances, realignment of boundary wall and improvement of traffic circulation. | 1.50 | 1.50 |

| | |
|-----------------|-------|
| Total 'B' (iii) | 28.20 |
|-----------------|-------|

Total "B" 42.95

| | |
|-------------------------|-------|
| Total 'A' & 'B' | 77.00 |
|-------------------------|-------|

--: 100 :--
CUTLAY FOR SEVENTH PLAN

B O M B A Y

(Rs. in crores)

| S c h e m e | Estima-
ted cost | Outlay
in 7th
Plan. | Foreign
Exchange
component |
|-------------|---------------------|---------------------------|----------------------------------|
| (1) | (2) | (3) | (4) |

A. Spillover Schemes:

| | | |
|--|------|------|
| 1. Construction of quarters for Class III & Class IV employees at various sites. Balance 60 units at Plot No.9 Sewree Fort Road. | 0.80 | 0.40 |
| 2. Procurement of 2 Dock Tugs | 3.95 | 1.16 |
| 3. Replacement of S.T.Arjun by high powered Bollard Pull Tug | 5.73 | 2.25 |
| 4. Purchase of one high powered tug in replacement of S.T. 'Anand' | 5.70 | 2.53 |
| 5. Purchase of New high powered tug in replacement of S.T. 'Amar' to be used as Tug-cum-Relief Pilot vessel | 5.73 | 3.35 |
| 6. Construction of RCC trestle in replacement of existing steel trestle at Pir Pau Berth. | 8.50 | 8.38 |
| 7. Re-construction of transit shed No.6, Indira Dock | 5.50 | 5.45 |
| 8. Construction of transit shed No. 13-A, Indira Dock | 1.16 | 0.86 |
| 9. Proposed Training Institute for Port workers. | 2.00 | 1.95 |
| 10. Measures to prevent oil pollution with skimmer facilities. | 3.17 | 2.72 |
| 11. Purchase of one new grab dredger | 4.81 | 4.25 |

Bombay

(1) (2) (3) (4)

| | | |
|--|------|------|
| 12. Construction of a building for Sr. Officers' quarters and a retiring room for Port Trust Officers at Dumanye Road, Colaba. | 1.43 | 1.13 |
| 13. Modernisation of Shed No.19 Indira Dock | 0.80 | 0.78 |
| 14. Construction of a multi-storeyed structure near Red Gate, Prince's Dock | 0.60 | 0.49 |
| 15. Construction of a multi-storeyed structure near Yantra Bhavan, Indira Dock | 0.99 | 0.80 |
| 16. Construction of combined building near Rim Bascule Bridge, Indira Dock | 0.11 | 0.09 |
| 17. Replacement of lighted gas buoys in outer main channel of Bombay Harbour according to IALA Convention | 0.80 | 0.40 |
| 18. Purchase of a new barge with hydraulic arrangements for hopper doors in replacement of Hooper Barge No.3 | 0.26 | 0.18 |
| 19. Improving illumination in West Yard 7 to 12-I.D. and P & V Docks | 0.30 | 0.28 |
| 20. Providing and electric incinerator for burning waste fish at Sasson Dock | 0.18 | 0.10 |
| 21. Improving Telecommunication system in Docks and Administrative Office | 2.00 | 1.75 |
| 22. Construction of quarters for Class III employees at Oil Tank Bunder (52 units) | 0.38 | 0.18 |

Bombay

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-

(1) (2) (3) (4)

- | | | | |
|--|------|-------|-----|
| 23. Construction of quarters for Class III and Class IV employees near Wadala Station and Brick Bunder, Sewroo | 3.00 | 2.50 | |
| 24. Providing infra-structural facilities at Ferry Wharf, RO-RO Shipping Service | 2.03 | 2.02 | |
| Total 'A' | | 44.00 | Nil |

New Scheme (i) Replacement

- | | | | |
|--|------|------|------|
| 1. Replacement of Dock Tugs
(Two Nos.) | 2.40 | 2.40 | |
| 2. Replacement of Water boat
'Nirmala' by a Water Boat-
cum-Anchor Hay | 1.00 | 1.00 | |
| 3. Replacement of Fire Float
"Sheetal" and "Sinchon" | 2.40 | 2.40 | 0.40 |
| 4. Replacement of Dredging Tug
'Karanja' | 0.60 | 0.60 | |
| 5. Reconstruction of transit
sheds at Haji Bunder: | | | |
| Shed No. A | 0.33 | 0.33 | |
| Shed No. B | 0.33 | 0.33 | |
| 6. Reconstruction of transit
sheds at Hay Bunder : | | | |
| Shed No. 1 | 0.34 | 0.34 | |
| Shed No. 2 | 0.34 | 0.34 | |
| Shed No. 3 | 0.22 | 0.22 | |
| Shed No. 4 | 0.22 | 0.22 | |
| 7. Reconstruction of godowns
at TD 52 & 53 at Cotton
Depot | 0.70 | 0.70 | |

Bombay

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-

(1) (2) (3) (4)

| | | | |
|---|------|------|------|
| 8. Replacing & updating of present equipments of Radiology Deptt. | 0.25 | 0.25 | 0.25 |
| Total: B(i) | | 9.13 | 0.65 |

B(ii) Modernisation

| | | | |
|--|-------|-------|------|
| 1. Providing RCC Tracks for Yard Crane at Manganese Ore Depot. | 0.50 | 0.50 | |
| 2. Providing RCC tracks for yard cranes at Timber Pond, Sewree. | 1.40 | 1.40 | |
| 3. RCC Paving of transtainer yard at Timber Pond, Sewree | 2.70 | 2.70 | |
| 4. Paving of additional road at Timber Pond, Sewree | 0.15 | 0.15 | |
| 5. Levelling transtainer Yard at Manganese Ore Depot | 0.25 | 0.25 | |
| 6. Modernization of the existing Docks | 10.00 | 10.00 | 0.50 |
| 7. Improved Oil and Chemical handling facilities at Butcher Island and Pir Pau: | | | |
| (a) Replacement of Pir Pau Oil Pier | 15.00 | 15.00 | 4.00 |
| (b) Laying of two additional pipelines for products at the Fourth Oil Berth, Butcher Island | 1.20 | 1.20 | |
| (c) Modernisation of communication network at Marine Oil Terminal | 2.90 | 2.90 | |
| (d) Additional Sub-station equipment at MOT Butcher Island for receiving electric power from Tata through sub-marine cables. | 1.00 | 1.00 | |

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.....(1).....(2).....(3).....(4).....

| | | | |
|--|-------|-------|------|
| (e) Procurement of an additional passenger-cum-water boat for MOT Butcher Island | 0.60 | 0.60 | |
| (f) Provision of mobile crane for M.O.T. | 0.30 | 0.30 | |
| 8. New Navigational Aids for Main Harbour Channel | 4.00 | 4.00 | 2.00 |
| 9. Procurement of modern equipment for Marine Survey | 0.50 | 0.50 | 0.15 |
| 10. Construction of an off shore Pilot Station | 10.00 | 10.00 | 0.50 |
| 11. Development of Wadala Incinerator Plot for Warehouses | 4.00 | 4.00 | |
| 12. Development of plot at Timber Depot & Construction of a warehouses. | 0.42 | 0.42 | |
| 13. Purchase of Radio-isotope scanning equipment and construction of a building for Radiology Deptt. | 0.40 | 0.40 | 0.25 |
| 14. Purchase of digital Radio-graphy equipment for Radiology Deptt. | 0.25 | 0.25 | 0.25 |
| 15. Purchase of Neuclear- Magnetic Resonance (NMR) equipment for Radiology Department | 2.00 | 2.00 | 1.60 |
| 16. Construction of a building to install NMR equipment | 0.10 | 0.10 | |
| 17. Setting up of Gardiac Ultra-Sonography Laboratory Cardiac Stress Laboratory & Tele-monitoring for Medical Deptt. | 0.70 | 0.70 | 0.70 |
| Total 'B' (ii) | | 58.37 | 9.95 |

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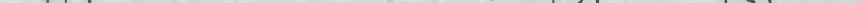
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.....(1).....(2).....(3).....(4).....

B(iii) - Additions:

- | | | | |
|---|-------|-------|------|
| 1. Procurement of additional container handling equipments | 10.00 | 10.00 | 5.00 |
| 2. Providing one additional rail track at Manganese Ore Depot | 0.30 | 0.30 | |
| 3. Construction of Shed Nos. 2 & 5 with service Blocks at Timber Pond Sewree | 1.25 | 1.25 | |
| 4. Proposed construction of two weighbridges with foundations at Timber Pond Sewree | 0.12 | 0.12 | |
| 5. Proposed building for workshop at Timber Pond Sewree | 0.30 | 0.30 | |
| 6. Construction of workshop at Manganese Ore Depot. | 0.20 | 0.20 | |
| 7. Construction of underground water storage tank at Timber Pond, Sewree | 0.10 | 0.10 | |
| 8. Construction of Administrative Office Block at Timber Road, Sewree | 0.75 | 0.75 | |
| 9. Proposed construction of one additional shed at Manganese Ore Deptt. | 0.30 | 0.30 | |
| 10. Procurement of two Hopper barges | 0.70 | 0.70 | |
| 11. Small boat harbour at Ballard Pier | 6.00 | 6.00 | |
| 12. Construction of shed at 'B' Jetha, Cotton Depot, for container handling | 0.52 | 0.52 | |
| 13. Proposed building for Motor shop. BPT Workshop, Mazagon | 0.24 | 0.24 | |

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| | | |
|--|------|------|
| 14. Construction of booking office
on Plot East of Sewree
Railway Station. | 0.24 | 0.24 |
|--|------|------|

| | | |
|---|------|------|
| 15. Raising the height of the boundary wall of open bonded warehouse at Wadala. | 0.20 | 0.20 |
|---|------|------|

| | | |
|---|------|------|
| 16. Construction of shed at open
Jetha at Hay Bunder | 0.15 | 0.15 |
|---|------|------|

| | | |
|---|-------|-------|
| 17. Construction of warehouses
at Haji Bunder Dump | 11.00 | 11.00 |
|---|-------|-------|

| | | |
|--|------|------|
| 18. Construction of additional two floors for office accommodation and Training Institute over the COS new building Bhundar Bhavan, at Muzawar Pakhadi Road, Mazagon | 0.40 | 0.40 |
|--|------|------|

19. Construction of Quarters

a. For Class III A (10 units)
at Reynolds Road, Wadala 0.13 0.13

| | | |
|--|------|------|
| b. For Class IV employees at Elphinstone Estate, Clive Road (48 units) | 0.27 | 0.27 |
|--|------|------|

| | | |
|--|------|------|
| c. For Class III C(40) units
at Roynolds Road, Wadala | 0.26 | 0.26 |
|--|------|------|

| | | |
|--|------|------|
| d. For Class III C(60) units)
at Reynolds Road, Wadala. | 0.45 | 0.45 |
|--|------|------|

| | | |
|--|-------|-------|
| 20. Construction of quarters and provision of welfare facilities | 10.00 | 10.00 |
|--|-------|-------|

| | | |
|---|------|------|
| 21. Construction of a building for Dock Master's Office at Entrance Lock, Indira Dock | 0:50 | 0.50 |
|---|------|------|

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(1) (2) (3) (4)

- | | | |
|---|--------|-------|
| 22. Providing a building for officers with ground plus three upper floors on plot bearing Nos. 1304 and 1354 Kumtha Street .
Fort Division | 0.15 | 0.15 |
| 23. Construction of building for Secondary school at Nadkarni Park, Wadala. | 0.43 | 0.43 |
| 24. Construction of Welfare Centre (ground plus two upper floors) at Reynolds Road, Wadala | 0.34 | 0.34 |
| 25. Construction of 'A' & 'B' Category booking offices, etc. at Yellow Gate, Police Station, P.D. | 0.70 | 0.70 |
| 26. Additional Reclamation at Timber Pond | 2.50 | 2.50 |
| | | <hr/> |
| Total B(iii) | 48.50 | 5.00 |
| | | <hr/> |
| Total 'B' (New Schemes) | 116.00 | 15.60 |
| | | <hr/> |
| Grand Total: | 160.00 | 15.60 |

CUTLAY FOR SEVENTH PLAN

M A D R A S

(Rs. in crores)

| S c h e m e | Estima-
ted cost | Cutlay in
Seventh
Plan. | FE
compo-
nent. |
|-------------|---------------------|-------------------------------|-----------------------|
| ----- | ----- | ----- | ----- |
| (1) | (2) | (3) | (4) |

A. Spillover Schemes

| | | | |
|---|-------|-------|------|
| 1. Construction of Outer Arm | 11.42 | 2.00 | |
| 2. Construction of Officers
quarters | 0.70 | 0.20 | |
| 3. Contenary Multi-storeyed
building | 2.30 | 1.00 | |
| 4. Additional Oil Berth | 20.51 | 10.20 | 1.50 |
| 5. Acquisition of a grab
dredger | 7.20 | 7.00 | |
| 6. Deepening of Bharathi Dock | 30.00 | 11.20 | 3.00 |
| 7. Container handling Stage II | | 0.10 | |
| Total 'A' | | 31.70 | 4.50 |

B. New Schemes

(1) Replacement

| | | | |
|--|-------|-------|------|
| 1. 2 Nos. Tugs-Replacement of
PALAR and PENAR | 11.00 | 11.00 | 5.00 |
| 2. 3 Nos. Pilot Launches - All
replacement | 0.90 | 0.90 | |
| 3. 2 Nos. Mobile Cranes-
Replacement | 0.50 | 0.50 | |
| 4. Survey Launch-Replacement | 0.25 | 0.25 | |
| 5. Sea Fix Equipment-Replacement | 0.80 | 0.80 | 0.50 |
| 6. 56 Nos. Fork Lift Trucks-
Replacement | 3.10 | 3.10 | |

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Total: 'B' (1) 27.05 8.50

B(ii) Modernisation

Total: B(ii): 8.40 2.70

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| | | | |
|---|-------|--------|-------|
| 1. Container handling equipments and extension to container berth | 30.00 | 30.00 | 12.70 |
| 2. International Trade Centre | 0.80 | 0.80 | |
| 3. Antipollution measures | 1.10 | 1.10 | |
| 4. 2 Nos. Transfer Cranes | 3.50 | 3.50 | 1.30 |
| 5. 2 Nos. 8 Ton Forklift Trucks | 0.25 | 0.25 | |
| 6. 12 Nos. Tractor Heads | 0.40 | 0.40 | |
| 7. 12 Nos. Trailers | 0.30 | 0.30 | |
| 8. 2 Nos. 10 Ton Mobile Cranes | 0.50 | 0.50 | |
| 9. Training Institute | 0.60 | 0.60 | 0.05 |
| 10. 2 Nos. 20 Ton Mobile Cranes | 0.65 | 0.65 | |
| 11. 1 No. Pusher Tug | 0.70 | 0.70 | 0.50 |
| 12. Standby Generators | 0.75 | 0.75 | |
| 13. Housing Schemes | 1.00 | 1.00 | |
| 14. Second Slipway | 2.30 | 0.30 | |
| Total 'B' (iii) | | 40.85 | 14.55 |
| Total 'B' | | 76.30 | 25.75 |
| Grand Total A+B | | 108.00 | 30.25 |

OUTLAY FOR SEVENTH PLAN

C O C H I N

(Rs. in crores)

| S c h e m e | Estima-
ted cost | Outlay 7th
Plan. | F.E.
Compo-
nent. |
|-------------|---------------------|---------------------|-------------------------|
| (1) | (2) | (3) | (4) |

A. Spillover Schemes:

| | | | |
|--|-------|-------|-------|
| 1. Procurement of two transfer cranes two forklifts and electrical, civil works. | 5.60 | 2.70 | |
| 2. Procurement of a dredger to replace 'Lady Willingdon'. | 18.00 | 17.50 | 10.00 |
| 3. Port's share towards cost of link road and bridge. | 6.00 | 5.30 | |
| Total 'A' | | 25.50 | 10.00 |

B. New Schemes:

B(i) Replacement

| | | | |
|---|------|------|-----|
| 1. Replacement of forklift trucks and mobile cranes | 1.00 | 1.00 | |
| 2. Replacement of water barge 'Tapaj' | 1.00 | 1.00 | |
| 3. Replacement of pilot launch 'Darshan' | 0.30 | 0.30 | |
| 4. Replacement of mooring buoys and mooring equipment | 1.80 | 1.80 | |
| 5. Reconstruction of overflow shed | 0.75 | 0.75 | |
| Total 'B'(i) | | 4.85 | Nil |

B(ii) Modernisation

| | | | |
|--|------|------|--|
| 1. Improvement to firefighting system. | 1.00 | 1.00 | |
| 2. Modernisation of Port's workshop | 0.70 | 0.70 | |

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.....(1).....(2).....(3).....(4).....

| | | | |
|--|------|------|-----|
| 3. Improvement to Q-9 berth
for heavy lifts | 0.75 | 0.75 | |
| 4. Improvement to Port Hospital | 0.25 | 0.25 | |
| 5. Data Processing Centre | 0.20 | 0.20 | |
| Total 'B' (ii) | | 2.90 | Nil |

B.(iii) Additions:

| | | | |
|--|-------|-------|------|
| 1. Procurement of container
handling equipment - one gantry
crane, two transfer cranes,
one fixed gantry crane etc.
and civil works. | 15.00 | 15.00 | 1.00 |
| 2. Procurement of 3 FACT cranes
at book value | 1.00 | 1.00 | |
| 3. Mooring Tender | 1.00 | 1.00 | |
| 4. One dumb barge for 'poclain'
excavator. | 0.25 | 0.25 | |
| 5. Payment towards acquisition
of Cochin Shipyard Tug | 2.80 | 2.80 | |
| 6. Acquisition of high power
Tug 30/35 Bollard Pull | 5.50 | 5.50 | 2.50 |
| 7. Pollution control equipment | 1.00 | 1.00 | 0.40 |
| 8. Provision of 1000 KVA
generating set | 1.50 | 1.50 | |
| 9. Increasing the capacity
of power supply arrangements
to meet additional load
requirement | 1.00 | 1.00 | |
| 10. Provision of deballasting
facilities | 1.00 | 1.00 | |
| 11. Stores complex | 0.50 | 0.50 | |

Cochin

(1) (2) (3) (4)

| | | |
|--|-------|-------|
| 12. Diaphram Wall for Mattenchery wharf | 2.00 | 2.00 |
| 13. Construction of berthing facilities for tugs, floating craft and control tower | 1.50 | 1.50 |
| 14. Development of Vallarpadam Area | 1.00 | 1.00 |
| 15. Procurement of Survey equipment | 0.50 | 0.50 |
| 16. Housing for Port Staff | 1.00 | 1.00 |
| 17. Family Quarters for CISF | 0.70 | 0.70 |
| 18. Training Institute for Ports and Dock Workers and Staff | 0.50 | 0.50 |
| Total: 'B' (iii) | 37.75 | 3.90 |
| Total 'B' (New Schemes) | 45.50 | 3.90 |
| Grand Total: | 71.00 | 13.90 |

(Rs. in crores)

| | | | |
|-----|-----|-----|-----|
| (1) | (2) | (3) | (4) |
|-----|-----|-----|-----|

| | | |
|--|-------|--------------|
| 1. Construction of Oil Berth | 24.10 | 5.30 |
| 2. Construction of Quarters
for Port employees and CISF | 0.70 | 0.45 |
| 3. Institute for Port and Dock
workers. | 0.75 | 0.70 |
| 4. Facilities to combat pollu-
tion under MARPOL CONVENTION | 1.93 | 1.50 |
| 5. Construction of two ware-
houses | 2.12 | 1.20 |
| 6. Procurement of Hopper
Suction dredger | 6.27 | 0.15 |
| 7. Procurement of two 10-Ton
Electric Wharf Cranes | 1.93 | 0.20 |
| 8. Stepping up power supply
lines from 11 KVA to
132 KVA | 0.73 | 0.70 |
| Total 'A' | | <u>10.20</u> |

B.(i) Replacement:

- | | | |
|---|------|------|
| 1. Replacement and modernisation to the iron ore loading facilities to sustain the performance. | 6.00 | 6.00 |
| 2. Replacement of locomotives with high H.P. Locomotives of 6 Nos. | 8.40 | 8.40 |

Visakhapatnam

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.....(1).....(2).....(3).....(4).....

| | | |
|--|------|--------------|
| 3. Procurement of electric wharf cranes 4 Nos. of 10/15 tonnes capacity to replace 7 Nos. of 3 tonnes capacity. | 4.00 | 4.00 |
| 4. Procurement of tyre mounted heavy duty mobile cranes - 3 Nos. of 25/45 tonnes capacity to replace 3 Nos. of 10/25 tonnes capacity of M.C.10,11, and 15. | 2.50 | 2.50 |
| 5. Procurement of multipurpose diesel hydraulic mobile crane with telescopic jib of 40 tonnes capacity to replace M.C. 14 | 0.50 | 0.50 |
| 6. Procurement of 30 tonnes BP shipping tug to replace tugs 'Nagarjuna' and 'Dolphin'. | 5.50 | 5.50 |
| Total 'B' (1) | | <u>26.90</u> |

B(ii) Modernisation:

| | | |
|---|------|------|
| 1. Modernisation and rationalisation of Port craft | 2.50 | 1.50 |
| 2. Capital repairs to dredger S.D. VISAKHA | 1.50 | 1.50 |
| 3. Establishment of integrated modern workshop | 1.50 | 0.50 |
| 4. Development of modern ORS Complex | 1.00 | 1.00 |
| 5. Widening of entrance channel of Inner Harbour | 0.55 | 0.55 |
| 6. Extension and improvement to the Port railway system | 1.25 | 1.25 |
| 7. Development of roads. | 1.00 | 1.00 |

Vi sakhapatnam

(1) (2) (3) (4)

.....

| | | |
|--|------|-------|
| 8. Provision of modern communication facilities | 0.30 | 0.30 |
| 9. Enlargement of existing dock area to provide additional backup space for East Quay Berths | 1.50 | 1.50 |
| | | <hr/> |
| Total B(ii) | | 9.10 |

B(iii) Additions:

| | | |
|--|-------|-------|
| 1. Extension of Port Hospital to provide 300 beds | 1.50 | 1.50 |
| 2. Construction of quarters for port employees | 3.00 | 3.00 |
| 3. Construction of security wall from flyover bridge to drive house H-7 and parallel to conveyor upto AP Fishing Jetty | 0.20 | 0.20 |
| 4. Replacement and development of land at North and North-East of Northern Arm | 1.50 | 1.50 |
| 5. Construction of Coal berth | 1.50 | 1.50 |
| 6. Construction of a jetty in outer harbour for handling liquid ammonia for Godavari Fertilisers | 0.60 | 0.60 |
| 7. Construction of a berth in place of 3-Jetties | 5.00 | 0.50 |
| 8. Improvement to water supply | 1.00 | 1.00 |
| 9. Upgrading iron ore handling facilities to handle 170,000 DWT vessels | 10.00 | 10.00 |
| Total B(iii) | | 19.80 |

Total 'B' New Schemes: 55.80

Grand Total A+B: 66.00

OUTLAY FOR SEVENTH PLAN

K A N D L A

(Rs. in crores)

| S c h e m e | Estima-
ted cost | Outlay F.E.
in 7th compo-
Plan. nent. |
|-------------|---------------------|---|
| (1) | (2) | (3) |
| (4) | | |

A. Spillover Schemes:

| | | | |
|--|------|------|------|
| 1. Purchase of 15 ton B.P. Tug
in replacement of S.T.
'Rukmani' | 3.00 | 1.20 | 0.40 |
| 2. Replacement of 14" dia oil
pipeline with 20" dia pipeline | 2.30 | 1.10 | |
| 3. Construction of transit shed
for Vith Cargo Berth | 1.80 | 1.70 | |
| 4. Shore facilities for receiv-
ing dirty ballast from oil
tankers | 0.25 | 0.20 | |
| 5. Electrification in cargo
jetty area | 0.80 | 0.20 | |
| 6. Sixth Cargo berths | | 0.20 | |
| Total 'A' | 7.35 | 4.60 | 0.40 |

B. New Schemes:

B(i) Replacement:

| | | | |
|---|-------|-------|------|
| 1. One twin screw diesel driven
suction hopper dredger in
replacement of SD Kandla
capacity 2500 cu.m. | 20.00 | 20.00 | 6.00 |
| 2. Procurement of a pillot-
cum-survey launch in
replacement of M.L. Sara | 0.70 | 0.70 | |
| 3. One fire float with snorkel
in replacement of F.F.
'Agnishanti' | 3.00 | 3.00 | |
| 4. Replacement of 12" dia
pipeline | 2.00 | 0.50 | |

Kandla

 (1) (2) (3) (4)

| | | | |
|--|-------|-------|------|
| 5. Additional 15-ton B.P. Tug
in replacement S.T. Roopavati | 4.00 | 4.00 | |
| Total: B(i) | 29.70 | 28.20 | 6.00 |

B(ii) Modernisation:

| | | | |
|---|------|------|-----|
| 1. Remote control monitor for
oil jetty | 0.60 | 0.60 | |
| 2. Night Navigation facilities
at Kandla | 0.30 | 0.30 | |
| 3. Lighted buoys for marking
near S.B.M. | 0.30 | 0.30 | |
| 4. Communication facilities at
Kandla. | 0.30 | 0.30 | |
| 5. Garage & repair shop for
mobile handling equipment at
Kandla | 0.60 | 0.60 | |
| 6. Development of open plots
for stacking ground behind
cargo jetty | 0.25 | 0.25 | |
| Total B(ii) | | 2.35 | Nil |

B.(iii) Additions:

| | | | |
|---|------|------|------|
| 1. Residential quarters | 1.50 | 1.50 | |
| 2. One twin screw diesel driven
kork nozzle tug of 30-ton B.P. | 5.50 | 5.50 | 0.40 |
| 3. Development of Gandhidham
Township Stage-III | 1.80 | 1.80 | |
| 4. Construction of multi-
purpose hall G. Puri | 0.30 | 0.30 | |
| 5. One twin screw diesel driven
pilot survey launch | 0.45 | 0.45 | |

Kandla

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| | | | |
|--|-------|-------|------|
| 6. One twin screw diesel driven general purpose launch 20 mtrs. in length-steel hull for OOT | 0.60 | 0.60 | |
| 7. Oil pollution measures at Vadinar and Kandla | 3.00 | 3.00 | |
| 8. One port tower crane 40-T capacity | 0.60 | 0.60 | |
| 9. Construction of office building for port users | 0.60 | 0.60 | |
| 10. Construction of VII cargo berth | 22.00 | 10.00 | 0.20 |
| 11. Port facilities at Vadinar:- | | | |
| (a) for handling POL products. | 10.00 | 10.00 | |
| (b) for handling bulk cargo | 15.00 | 15.00 | |
| 12. Unforeseen works | 1.00 | 1.00 | |
| Total B(iii) | | 49.85 | 0.60 |
| Total 'B' New Schemes | | 80.40 | 6.60 |
| Grand Total A+B | | 85.00 | 7.00 |

OUTLAY FOR SEVENTH PLAN

M O R M U G A O

(Rs. in crores)

| S c h e m e | Estima-
ted cost | Outlay
in 7th compo-
Plan. | F.E.
nent. |
|-------------|---------------------|----------------------------------|---------------|
| (1) | (2) | (3) | (4) |

A. Spillover Schemes:

| | | | |
|--|-------|------|-----|
| 1. Construction of Multipurpose General Cargo Berth, Capital Dredging, Reclamation Bund and Reclamation. | 11.41 | 0.75 | |
| 2. Construction of Secondary School Building Phase I | 0.50 | 0.35 | |
| 3. Expansion of Port Hospital Complex Phase II | 0.50 | 0.20 | |
| Total 'A' | | 1.30 | Nil |

B. New Schemes:

B(1) Replacement:

| | | | |
|--|------|-------|------|
| 1. Reconstruction of F.G.H.& K Sheds | 2.50 | 2.50 | |
| 2. Replacement of 4 Nos. old launches | 1.50 | 1.50 | |
| 3. Replacement of 9 Nos. electric wharf cranes with 3 Nos. of 10 tons capacity and 1 No. of 20 tons capacity electric wharf cranes | 4.00 | 4.00 | |
| 4. Replacement of 6 Nos. fork-lifts. | 0.35 | 0.35 | |
| 5. Replacement of 13 Tons mobile crane | 0.40 | 0.40 | |
| 6. Replacement of 30 ton mobile crane | 0.50 | 0.50 | |
| 7. Replacement of Tug "Donapaula" | 5.50 | 5.50 | 2.00 |
| Total: B(1) | | 14.75 | 2.00 |

Mormugao

 (1) (2) (3) (4)

B(ii) Modernisation:

| | | | |
|--|------|------|------|
| 1. Improvement to handling facilities at Berth No.8 | 0.50 | 0.50 | 0.40 |
| 2. Development of Road net work connecting port area to National Highway | 3.00 | 3.00 | |
| 3. Modernisation of workshop facilities | 1.00 | 1.00 | |
| Total B(ii) | | 4.50 | 0.40 |

B(iii) Additions

| | | | |
|--|-------|-------|-------|
| 1. Additional barge unloading jetty including provision for ore unloaders with related conveyors and modifications to the shipping system. | 5.50 | 5.50 | 1.00 |
| 2. Acquisition of Transhioper | 20.00 | 20.00 | 15.00 |
| 3. Acquisition of antipollution equipment | 0.50 | 0.50 | 0.40 |
| 4. Capital dredging in D4 area | 1.25 | 1.25 | |
| 5. Acquisition of fire fighting equipment | 0.55 | 0.55 | |
| 6. Construction of overflow shed with related facilities | 1.75 | 1.75 | |
| 7. Construction of repair berth | 1.75 | 1.75 | |
| 8. Construction of Secondary School Phase II | 0.15 | 0.15 | |
| 9. Additional General Cargo berth | 14.00 | 14.00 | |
| 10. Housing for staff | 6.00 | 6.00 | |
| Total B(iii) | | 51.45 | 16.40 |

Total 'B' New Schemes 70.70 18.80

Grand Total A + B: 72.00 18.80

OUTLAY FOR SEVENTH PLAN

P A R A D I P

(Rs. in crores)

| Scheme | Estimated cost | Outlay F.E. in 7th component. |
|--------|----------------|-------------------------------|
| (1) | (2) | (3) |

A. Spillover Schemes:

| | | | |
|--|-------|-------|------|
| 1. Construction of 3rd General Cargo Berth. | 13.35 | 1.50 | |
| 2. Additional Warehouse and open stacking yard | 1.00 | 0.65 | |
| 3. Construction of fertiliser berth. | 28.75 | 17.75 | 0.30 |
| Total 'A' | | 19.90 | 0.30 |

B. New Schemes:

B.(i) Replacement:

| | | | |
|---|-------|-------|-------|
| 1. Replacement of cargo handling equipment. | 5.00 | 4.00 | 1.00 |
| 2. Replacement of floating crafts | 10.00 | 6.40 | 4.00 |
| 3. Sand by passing arrangements- Construction of Island Breakwater and Sand Trap dredging | 10.00 | 10.00 | 5.00 |
| Total B(i) | | 20.40 | 10.00 |

B(ii) Modernisation:

| | | | |
|---|------|------|------|
| 1. Improvement & Modification to Iron Ore Berth | 3.00 | 3.00 | 0.30 |
| 2. Development of Sewage disposal and drainage system | 0.50 | 0.50 | |

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| | | | |
|---|------|------|------|
| 3. Expansion of water treatment plant-Construction of over-head tank and ancillary works. | 1.00 | 0.40 | |
| 4. Opening of creek system within port area for effective drainage and flood control. | 0.25 | 0.25 | |
| 5. Construction of centralised workshop building and procurement of machinery | 1.00 | 1.00 | |
| 6. Electrical installation inside port area. | 2.00 | 2.00 | |
| 7. Modification of Slipway and expansion to slipway workshop | 3.00 | 3.00 | 0.10 |
| Total B(ii) | | 8.15 | 0.40 |

B(iii) Additions:

| | | | |
|--|-------|-------|--|
| 1. Extension of Wet Basin | 2.00 | 2.00 | |
| 2. Capital dredging to deepen the channel, turning circle and bulk cargo berth | 10.00 | 10.00 | |
| 3. Construction of port operation building inside dock area. | 1.00 | 1.00 | |
| 4. Construction of Warehouses, Transit sheds and open stacking yards | 2.50 | 2.50 | |
| 5. Provision of essential amenities for the cargo handling workers | 0.50 | 0.50 | |
| 6. Construction of Central Stores godowns | 0.80 | 0.80 | |

Paradijs

| | (1) | (2) | (3) | (4) |
|--|-------|--------|-------|-----|
| 7. Construction of Residential quarters for port employees- A, B. C & D | 5.00 | 5.00 | | |
| 8. Construction of Roads and Culverts | 1.00 | 1.00 | | |
| 9. Construction of Bridge over Railway Lines | 0.50 | 0.50 | | |
| 10. Construction of Bridge over Atharbanki | 0.50 | 0.50 | | |
| 11. Providing essential facilities for cargo handling and dock workers in the residential area | 0.50 | 0.50 | | |
| 12. Reclamation of 100 acres of land for development works. | 1.00 | 1.00 | | |
| 13. Providing civic amenities in the port Township for port workers & trade | 1.00 | 1.00 | | |
| 14. Providing health and education centres inside the housing complex for port employees. | 0.75 | 0.75 | | |
| 15. Oil reception facilities | 2.00 | 1.00 | 0.20 | |
| 16. Fire service Station and equipment. | -- | 0.50 | | |
| 17. Mobile Suction Dredger | 20.00 | 20.00 | 10.00 | |
| 18. Coal handling facilities | 10.00 | 10.00 | | |
| | | <hr/> | <hr/> | |
| Total B(iii) | | 48.55 | 10.20 | |
| | | <hr/> | <hr/> | |
| Total 'B' New Schemes | | 87.10 | 20.60 | |
| | | <hr/> | <hr/> | |
| Grand Total A + B: | | 107.00 | 20.90 | |

OUTLAY FOR SEVENTH PLAN

TUTICORIN

(Rs. in crores)

| -0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0- | | | |
|---|----------------|-------------|-------------|
| Scheme | Estimated cost | Outlay F.E. | Plan. ment. |
| (1) | (2) | (3) | (4) |

A. Spillover Schemes:

| | | | |
|--|-------|------|-----|
| 1. Deepening the approach channel to - 10.98 m level | 5.40 | 3.22 | |
| 2. Construction of two additional general cargo berth. | 12.33 | 1.48 | |
| 3. Procurement of one 30-T B.P. Tug | | 0.05 | |
| | | 4.75 | Nil |

B. New Schemes:

B.(i) Replacement:

| | | | |
|---|------|------|------|
| 1. Replacement of 2 Nos. mooring boats and water barges | 0.35 | 0.35 | |
| 2. Replacement of 6 Nos. Forklift trucks of 3T capacity for handling general cargo | 0.25 | 0.25 | |
| 3. Replacement of 2 Nos. Front end Loaders | 0.25 | 0.25 | |
| 4. Replacement of the existing diving equipment and procurement of air compressor accessories | 0.10 | 0.10 | 0.05 |
| 5. Replacement of the weigh-bridges fitted with printing arrangement including platforms | 0.15 | 0.15 | |
| 6. Replacement of existing water supply and sewerage arrangements at Tuticorin Port. | 1.70 | 1.70 | |

Tuticorin

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---(1)---(2)---(3)---(4)---

| | | | |
|--|------|------|------|
| 7. Replacement of the existing Metre Gauge Railway line by Broad gauge railway line within Port limit. | 0.75 | 0.75 | |
| 8. Replacement of lighting arrangement along VOC road leading to the wharf. | 0.20 | 0.20 | |
| Total B(i) | | 3.75 | 0.05 |

B(ii) Modernisation

| | | | |
|--|------|------|------|
| 1. Providing grab attachments for the 2 Nos. existing 6 T wharf cranes | 0.20 | 0.20 | |
| 2. Providing major workshop there- by improving the existing Field Workshop with all facilities | 0.75 | 0.75 | |
| 3. Expansion and modernisation of the workshop at Extension Port (Zone B) | 0.10 | 0.10 | |
| 4. Providing repairs and testing yard for mobile cargo handling equipment inside the security limit. | 0.40 | 0.40 | 0.05 |
| 5. Construction of Store Complex close to the vicinity of operation at Tuticorin Port | 0.50 | 0.50 | |
| 6. Improving the shopping facilities in Tuticorin Port | 0.10 | 0.10 | |
| 7. Upgradation of singal stations at Zone A, Zone B and Hare Islands by providing additional equipment and accommodation for the same. | 0.10 | 0.10 | |
| Total B(ii) | | 2.15 | 0.05 |

Tuticorin

 (1) (2) (3) (4)

B(111) Addition:

| | | | |
|---|-------|-------|------|
| 1. Procurement of 1 No. twin tug of 30 T Bollard Pull | 5.50 | 5.50 | 1.25 |
| 2. Procurement of additional equipment for port Fire Service according to the norms laid down by the Fire Adviser (Govt. of India) and the guidelines issued by the Ministry of Shipping and Transport. | 0.50 | 0.50 | |
| 3. Setting up a Marine Workshop at Zone 'A' | 0.10 | 0.10 | |
| 4. Setting up a hydrographic survey unit | 1.00 | 1.00 | 0.50 |
| 5. Construction of one more coal jetty at Tuticorin | 11.00 | 11.00 | |
| 6. Provision of facilities for the prevention and control of pollution on 'MARPOL' Convention | 1.50 | 1.50 | 0.65 |
| 7. Provision of slipway facilities for port crafts | 3.00 | 3.00 | |
| 8. Construction of additional school building for Higher Secondary School with all facilities | 0.15 | 0.15 | |
| 9. Construction of additional floor over the Administrative building | 0.30 | 0.30 | |
| 10. Expansion of Port Trust Hospital | 0.30 | 0.30 | |
| 11. Construction of additional staff quarters with ancillary facilities | 1.90 | 1.90 | |

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| | | |
|--|-------|------|
| 12.Container handling equipment
such as tractor, trailers,
Forklift trucks (5 T capacity
for handling empty containers
etc.) | 0.40 | 0.40 |
| 13.Construction of commercial
buildings | 0.70 | 0.70 |
| 14.Dredging the boat channel
and basin in Zone B at
Tuticorin Port. | 4.00 | 4.00 |
| 15.Construction of an additional
cargo berths. | 8.00 | 8.00 |
| Total B(iii) | 38.35 | 2.40 |
| Total 'B' New Schemes | 44.25 | 2.50 |
| Total 'A'+'B' | 49.00 | 2.50 |

OUTLAY FOR SEVENTH PLAN
NEW MANGALORE

(Rs. in crores)

| Scheme | Estimated cost | Outlay in 7th Plan. | F.E. Component. |
|--------|----------------|---------------------|-----------------|
| (1) | (2) | (3) | (4) |

A. Spillover Schemes:

| | | | |
|--|------|-------|------|
| 1. Construction of another additional General cargo berth. | 9.80 | 9.40 | 0.15 |
| 2. Procurement of one 30 T B.P. Tug and 22.5 T Bollard Pull Tug. | 9.50 | 6.50 | |
| 3. Construction of staff quarters | 1.31 | 0.70 | |
| Total 'A' | | 16.60 | 0.15 |

B. New Schemes:

B.(i) Replacement:

| | | | |
|--|------|------|-----|
| 1. Procurement of self propelled water barge of 250 Tonne capacity | 1.50 | 1.50 | |
| Total B(i) | | 1.50 | Nil |

B.(ii) Modernisation:

| | | | |
|---|------|------|--|
| 1. Development and improvement of road network system | 2.00 | 2.00 | |
| 2. Procurement of self propelled mooring buoy laying tender | 1.50 | 1.50 | |
| 3. Improvement to Sewage and drainage arrangements | 0.40 | 0.40 | |
| 4. Construction of a storage shed near iron ore berths | 1.25 | 1.25 | |

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| | | | |
|-------|-------|-------|-------|
| (1) | (2) | (3) | (4) |
| ----- | ----- | ----- | ----- |

| | | | |
|---|------|------|-----|
| 5. Improvement and extension of lighting arrangements | 0.50 | 0.50 | |
| Total B(i1) | | 5.65 | Nil |

B(iii) Additions

| | | | |
|---|-------|------|------|
| 1. Providing infrastructural facilities for container handling facilities | 0.75 | 0.75 | 0.40 |
| 2. Rock dredging in the existing dock arm | 1.00 | 1.50 | |
| 3. Procurement of additional fire fighting equipment. | 0.30 | 0.30 | |
| 4. Oil pollution control measures as per "Marpol" convention. | 0.50 | 0.50 | 0.15 |
| 5. Procurement of 30 T Mobile Crane with proper arrangements. | 0.75 | 0.75 | 0.75 |
| 6. Procurement of Twin Screw Pilot launch | 0.30 | 0.30 | |
| 7. Protection to the entrance of the lagoon | 1.70 | 1.70 | |
| 8. Extension to security compound wall into sea | 0.25 | 0.25 | |
| 9. Procurement of 300 KVA generator. | 0.30 | 0.30 | |
| 10. Construction of multi-storeyed office building for user agencies in the commercial layout | 0.75 | 0.75 | |
| 11. Slipway and repair complex | 4.40 | 3.00 | |
| 12. Construction of one more additional general cargo berth. | 12.00 | 4.00 | 0.15 |

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|---|-------|-------|-------|
| (1) | (2) | (3) | (4) |
| ----- | | | |
| 13.Port facilities for Ro-Ro | 0.40 | 0.40 | |
| 14.Construction of additional
staff quarters. | 0.80 | 0.80 | |
| 15.Port facilities for proposed
Refinery at Mangalore. | 53.00 | 53.00 | 10.00 |
| | | ----- | ----- |
| Total B(iii) | | 68.30 | 11.45 |
| | | ----- | ----- |
| Total 'B' New Schemes | | 75.40 | 11.45 |
| | | ----- | ----- |
| Grand Total A+B: | | 92.00 | 11.60 |
| | | ===== | ===== |

Upgradation of two intermediate ports as
Major Ports

1. Kakinada Port:

LOCATION:

This is an all weather lighterage port developed in a naturally sheltered bay known as Kakinada Bay in Andhra Pradesh. The port is situated between 2 major ports of Visakhapatnam and Madras which are located 129 km. to the north and 596 km to the south respectively.

TRAFFIC:

The Port has handled above 1 million tonnes of cargo like agricultural products, rice, tobacco, fertilisers, cement, etc.

COMMUNICATION:

The port is connected to B.G. railway through a branch line from Kakinada which connects the main B.G. line between Madras and Hubli at Sambalpur 16 km. away.

The port is also connected to NH No.5. Further the port is connected by inland waterway system.

PRESENT DEVELOPMENT:

The existing port facilities have been developed all along the bank of the commercial canal. The canal is 61 m width and has a depth of 2.7 m.

To relieve congestion in the commercial canal and to separate the fisheries activities, a fisheries harbour is under construction, with the World Bank assistance. The harbour provides for the construction of a breakwater of 880 m long with 200 m long spur. The harbour provides berthing jetties to accommodate mechanised boats as well as deep sea fishing trawlers.

NECESSITY FOR FURTHER DEVELOPMENT:

The Kakinada Port has a very rich hinterland where minerals and metals like iron ore, lime stone,

cooper, cement, bauxite, etc. are available in abundance. Several fertiliser and sugar factories and many rice mills are existing besides a large paper mill at Rajamahendry. The State Government had made an assessment of traffic of about 2.50 million tonnes which comprises of 1.0 million tonnes of raw materials of fertiliser factories and about 1.30 million tonnes additional traffic in general cargo.

2. Karwar Port

The port of Karwar is situated on the east coast in Karnataka State. This is a lighterage port which provides alongside berthing facilities for lighters located in the sheltered Karwar Bay.

LOCATION

The port at present is handling iron ore and manganese ore amounting to about 1.0 - 1.3 million tonnes and general cargo of about 5 lakh tonnes.

TRAFFIC

The port is connected with a net work of road system and national highway No.17 passes close to the port. A state highway Karwar-Hubli connects the national highway No.4 at Hubli. The port is not connected with railway link but the nearest railway head is Hubli which is 165 km. from Karwar.

COMMUNI- CATION

The State Government is developing this port providing direct berthing facilities for general cargo ships requiring a draft upto 9.14 m. The facilities comprising of construction of a general cargo berth of 355m long, break-water of length 250 m, wharf cranes and a

DEVELOP- MENT.

transit shed for handling general cargo. The cargo berth is nearing completion and only dredging is to be completed.

FUTURE
DEVELOP-
MENT.

The State Government is planning to develop further to provide alongside berthing facilities for ore carriers upto 40,000 dwt and instal faster ore loading system so as to handle an annual traffic of 2 to 3 million tonnes of iron ore from Bellari-Hospet area. In the ultimate stage, it is contemplated to develop facilities to accommodate ore vessels upto 60,000 dwt and handle 5 to 6 million tonnes of iron ore annually.

3. Pipavav Port

LOCATION

Pipavav is located on the south coast of Saurashtra in Gujarat. The site provides sheltered and deep waters and free from siltation where a port could be developed economically and conveniently. At present no port/harbour facilities exists at this place.

The Gujarat Government had appointed M/s. Engineers India Ltd. in 1975 to carry out techno-economic feasibility study for development of Pipavav Port. The consultants after detailed study had recommended development of a direct berthing all weather port at Pipavav. This was examined by the Gujarat Maritime Board in the context of traffic potential and favoured the proposal. The Board had assessed a traffic of 5.50 lakh tonnes immediately after the commissioning and also indicated bright prospects of future traffic of about 4 - 5 million tonnes in the light of the industrial potential exists in its immediate hinterland.

COMMUNI-
CATION

A coastal highway connecting Bhavnagar-Okha passes near Pipavav necessitating a link of about 14 km. There is no rail connection at present but the nearest rail head (meter gauge) is Dunger Junction which is about 10 km. The nearest B.G. rail head is at Surendar Nagar which is on Viramgaon - Okha main B.G. line. Surendar Nagar is about 267 km. from the proposed port at Pipavav.

PRESENT
STATUS

The State Government have plans to develop a number of ports during the 7th Plan, and Pipavav is one of the port contemplated. The proposal is to provide a steam berth of about 525 m long and a draft of about 10 m. The berth would be equipped with necessary handling equipments. The proposal provides for harbour crafts and other related facilities. The total cost of the proposal as estimated by the State Government is about Rs. 25 crores.

NECES-
SITY FOR
DEVELOP-
MENT.

A number of committees and experts who examined the necessity of developing modern port facilities along the south coast of Saurashtra have recommended favourably to develop Pipavav into a direct berthing port. In view of the rich hinterland, consisting of a number of industries and also availability of the mineral resources, the port after its development can expect a traffic of about 4.0 - 5.0 million tonnes ultimately.

SETHUSAMUDRAM SHIP CANAL PROJECT

Brief History

Sethusamudram Canal Project envisages cutting of ship canal below Pamban so that the ships need not go around Sri Lanka. This will save 300 to 350 miles of sailing for ships moving between East and West Coasts. The Canal was planned to cater for 30' draught in the initial stages.

2. Between 1860 and 1962, as many as nine proposals were made for cutting a ship canal across the narrow strip of land to connect the Gulf of Mannar and Palk Bay.

3. In 1955, the Committee appointed under the Chairmanship of Shri A. Ramaswamy Mudaliar expressed the view that the project was feasible and would be of benefit to shipping. In 1965 a Chief Engineer was appointed by the Central Govt. to carry out the investigations and prepare detailed estimates. The Chief Engineer submitted the project report in May 1968 in which he concluded that the project was feasible and would be of benefit to shipping. The Chief Engineer submitted the project report in May 1969 in which he concluded that the project is technically feasible and the cheapest alignment will be by the Rameswaram crossing. The cost of the project was estimated at Rs. 37.50 crores with a foreign exchange component of Rs. 10.56 crores. The Development Adviser in the Ministry reviewed the cost in 1971 and updated it to Rs. 53.00 crores. The time needed for completion of the project was 5 years from the date of sanction.

4. The cost estimates were again reviewed in

1974 at the time of considering the alignment of the Charnel based on the Agreement of the boundary line between the two countries - India and Sri Lanka. The alignment had to be altered so that it would be wholly in Indian waters. In view of this the cost had to be further revised to Rs. 72.00 crores at December 1974 prices.

Constitution of Committee:

5. This matter came up for detailed consideration at the meeting of the Consultative Committee of Parliament of this Ministry held on 15th December, 1980. The members emphasised that in as much as the project was technically feasible, there should be no hesitation to have it sanctioned at an early date. After some discussion it was agreed that a small Committee of officers might be set-up to study the investigations so far made in this respect and submit their report as early as possible with their recommendations as to the economic viability of the project.

6. In pursuance of the above decision, a committee was set up on 29th January, 1981 under the chairmanship of Development Adviser (Ports) with the following composition :

1. Shri H.R. Laxminarayan,
Development Adviser,
Ministry of Shipping and Transport,
New Delhi. Chairman
2. Shri S.D. Batra, Principal Officer,
Mercantile Marine Department,
Madras - Nominee of Director
General of Shipping. Member

3. Shri V. Nilakantan, Manager,
Passenger Services, Shipping
Corporation of India, Bombay Member.
4. Shri V. Sundaram, Chairman,
Tuticorin Port Trust. Member.
5. Shri P. Sivalingam,
Ex-Vice-Chancellor of Pararignar
Anna University of Technology,
Madras. Member.
6. Commandore M.P. Wadhavan, NM, VSM,
Chief of Staff Headquarters,
Southern Naval Command,
C/o RMO Cochin-Representative
of the Ministry of Defence Member.

The Committee submitted its report to
Government on 30 April, 1983.

Recommendations of the Committee

7. The recommendations of the Committee are as
follows :-

(a) Economic viability is the primary criterion
for the sanction of any development project. As far
as Sethusamudram Project is concerned, this is rather
difficult to quantify in an exact manner as certain
factors contributing to the economic assessment of
the Project are based on a number of probabilities.
It has been possible to assess the factors like the
utility of the Canal by the Shipping Industry with
reference to available records and the project is
estimated to yield a return of 4.72% keeping the
revenue and expenditure constant, 7.51% if revenue
and expenditure escalate by 5% each year and 11.93%
if revenue increases by 10% and expenditure by 5%
in the first 25 years of its existence. Though it
may not compare favourably with the return normally
adopted for a development project, the Committee

is of opinion that the proposal could be implemented in view of certain other factors which come into play.

(b) To start with the cost of the project was estimated at Rs. 37.50 crores in 1969 and today the same project would cost Rs. 282 crores. The increase in the cost is due to escalation and changes in the canal parameters. The Project has been declared to be technically feasible right through. It has been possible to quantify the direct benefits amounting to Rs. 20.75 crores accruing to the canal authority, shippers, shipping companies, foreign exchange gains, etc., to a great extent; but, the indirect economic benefits to the Nation and the social benefits likely to be conferred by this Project on the people of this region cannot be quantified. It is also a fact that the canal will be of considerable benefit for the defence of the country.

(c) Though the Internal Rate of Return on the cost of the Project is rather low, the utility of the Project can be enhanced and justified by taking the invisible benefits into account. It must also be emphasised that the crux of the benefit lies in the time gained by the ships in their voyage time, as a result of passing through the canal. This time has to be minimised for the results to be exemplary, by providing an efficient and effective management of the Canal. Only with such management the canal will attract sufficient traffic even though an alternative is available.

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(d) In conclusion, the Committee recommends that the Project could be implemented early based on the above premises of National interest, Development of Trade and Commerce, regional development, etc. In order to ensure financial and economic viability; concessions like treating the investment on the Project as grant or providing a moratorium on the repayment of loans and interest, may be extended. The Committee is also of the view that the Sethusamudram Project can be implemented through an Agency under the control of the Central Government.

SALIENT FEATURES OF THE PROJECT:

8. The salient features of the project are -
- (i) Dredging of 67 million M³ in sand and loose materials along the alignment of the canal. The dredging has been proposed to be got done through the Dredging Corporation of India, who would procure the necessary dredger.
 - (ii) Procurement of floating crafts like 4 Nos. tugs, 3 Nos. Pilot launches, 3 Nos. mooring launches, 1 No. survey-cum-lighting vessel and 1 No. despatch vessel.
 - (iii) Provision of a lock of size 293 mx 38 m in the land portion of the canal connecting south and north approach channels.
 - (iv) Construction of breakwater of length 350 m at either end of the land canal.
 - (v) Installation of navigational aids along the waterways.

(vi) Shore facilities like jetties at either end of the land canal for floating crafts, slipway repair facilities, workshop and buoy yard.

(vii) Office buildings, operational buildings, residential quarters for operational staff.

COST ESTIMATES:

9. According to the Committee of the Experts the project is estimated to cost Rs. 282 crores (with a foreign exchange component of Rs. 3 crores) based on February 1983 prices. The capital estimates are framed following the K-alignment of the canal system.

BENEFITS FROM THE PROJECT:

10. The important benefits to the nation indicated by the Committee in its report are -

(i) Implementation of Sethusamudram Canal will provide a continuous navigable sea route around its peninsular coast, 3554 nautical miles in length, running within her territorial waters. Sethusamudram Canal will establish a link to the National water way similar to the national highway.

(ii) The traffic through the canal in 1989-90 has been estimated at NRT 230 lakhs (3000 transits). Consequent on the reduction in voyage distance, each vessel passing through the canal will effect a fuel savings of about 20-T per transit (or) Rs. 70,000 (or) Rs. 21.00 crores in a year for all the vessels. Presently, India is importing large

quantities of crude and savings in fuel means conservancy of Foreign Exchange to the extent of Rs. 7 crores corresponding to Indian vessels alone.

- (iii) The Sethusamudram Canal will give better sheltered sea route from Tuticorin to various ports on the East Coast with the saving in distance of around 400 nautical miles. Correspondingly there will be a saving in voyage time of about 16 hrs. (average). Because of the saving in distance and voyage time there will be considerable saving in fuel and operating cost of the extent of Rs. 70,000/- per sailing through the canal. This savings will initially accrue to the shipping companies.
- (iv) Because of the saving in distance the ships could gain by approximately 20% in voyage time in the case of coastal shipping. With the given shipping fleet it would be possible to make more-number of trips and thereby increasing the capacity of the fleet.

Justification in respect of major new schemes costing over Rs. 5.0 crores

ANNEXURE-III

1. Calcutta Port

1. Replacement of one Pilot vessel, and one despatch vessel 'Nadia'.

Cost: Rs. 12 crores.

The existing pilot vessel was built in 1963. Vessels remain at sea for six months in a year being subjected to adverse weather conditions including monsoon. This necessitate periodical extensive repairs to the hull. It is therefore proposed to replace one pilot vessel for which a provision of Rs. 5 crores has been made.

2. Replacement of despatch vessel 'Nadia', cost Rs. 10 crores.

The despatch vessel 'Nadia' besides its normal despatch operation also does the duties of a river tug. This is a steam vessel and it has become uneconomical due to heavy consumption of furnace, oil. The vessel has been built in 1951 and has outlived its life. The vessel has to attend to many emergency works in the long navigational channel of 126 miles. It is therefore proposed to replace it during 7th Plan for which a provision of Rs. 6 crores has been made.

3. Project: Replacement of Swing bridge No.I

Cost: Rs. 600 lakhs.

The existing swing bridge was constructed in 1889 and is about 94 years old. During this period, extensive repair replacements have been done. However, due to its condition, it is not in a position to withstand the present intensity and load of traffic. In

fact in view of its poor condition, the traffic is being regulated allowing only light vehicles, and with severe load restrictions. Any further delay in replacement of this may cause accidents resulting in complete stoppage of ship movements to KP docks No. 1 and 2 as well as totally dislocating the road traffic along Garden Reach Road. The total cost of the bridge is about Rs. 12 crores and the cost to be shared by Calcutta Metropolitan Development Authority and the Port. Accordingly a provision of Rs. 6 crores have been made.

4. Project: Development of Container Handling Facilities Phase II.

Cost : Rs. 7.50 crores.

Even though there are no proper container handling facilities; the traffic in containers is growing very fast from year to year. As a first phase, a proposal to provide yard cranes, parking yard, CFS, net work of roads and other facilities costing about Rs. 10.50 crores is under consideration of the Govt. for approval. These facilities contemplate to rationalise the movement of container traffic and also reduce turn round time of containers. With the provision of this, the traffic would go up from the present 30000 TEUs p.a. to 45000 TEUs which is its capacity. Beyond this, it would be necessary to provide additional yard cranes, extension of container freight station, extension of parking yard, CFS rail terminal, extension of the berth in NS Dock etc. Since the investment on these is quite considerable, it is planned to augment Phase I facilities with minimum facilities like additional yard cranes, expansion of parking yard, and freight

station to cater to a traffic beyond 45000 TEUS. This proposal is in accordance with the recommendations made by the UK consultants engaged by the Port.

5. Project:- Replacement of steam tugs 'Malati', 'Sauli', 'Champa' and 'Stalwart'.

C o s t : Rs. 11.50 crores.

The above existing tugs have been procured earlier to 1958 and they have become old and obsolete and are steam driven. Moreover boiler and engines of these crafts are being subjected to frequent breakdowns and has become uneconomical for repairs and maintenance. In view of this, it is proposed to replace these tugs during the 7th Plan.

HALDIA DOCK COMPLEX

1. Project: Construction of additional 700 ft. length for general cargo berth.

C o s t : Rs. 9.0 crores.

At present, the Haldia Dock has continuous quay face of 1440 ft. which can accommodate normally 2 ships. Berth occupancy of this general cargo cum container berth has increased from 68% during 82-83 to 84% in the year 83-84 upto July, 1983. There is a steady growth for handling of containers which is expected with the introduction of Russian container lines at Haldia in addition to other lines like French lines, India Steamship Co. and CGM (French line) which are already calling. The container traffic would get an impetus after setting up of a ICS at Gauhati for movement of tea through Haldia. During

the last 2 years, there has been considerable extent of ships waiting for general cargo berths. Considering the high berth occupancy and steady growth in the container traffic, it has become necessary to provide an additional general cargo berth to cater for the projected traffic. Accordingly full provision of Rs. 9.0 crores has been made in the 7th Plan for construction of an additional berth.

2. Project: Container handling equipments.
Cost: Rs. 10 crores.

At present the container handling facilities consist of one 30-ton portainer and one 30 ton transtainer at the general cargo cum container berth. Recently enquiries have been received from various shipping lines for using the container handling facilities at Haldia. Normally gearless vessels are shy of visiting Haldia as the existing handling equipment is considered inadequate. This has resulted in underutilisation of the facilities. The minimum equipment for the container berth are 2 portainers, 4 transtainers and other related equipments. In order to ensure that there is no avoidable underutilisation of the existing facilities, it is proposed to procure one portainer crane and at least one transtainer crane for which a provision of Rs. 8.0 crores has been made in the 7th Plan.

3. Project: Residential quarters at Chiranjibpur township.

Cost : Rs. 800 lakhs.

At present, there are 1647 quarters

of various types at Haldia. The present strength of Haldia dock is about 3300.

CISF personnel who are looking after the safety of the port, jetty and other vulnerable areas, need about 354 quarters. Besides, the crew of the 5 tugs who are based at Calcutta are to be shifted to Haldia for which 200 quarters are needed. Considering the accommodation already provided for the employees of Haldia, CISF etc. there is a need to provide about 1120 quarters. Accordingly a provision of Rs. 5.0 crores has been made in the 7th Plan.

2. Bombay Port

1. Improved Oil and Chemical handling facilities at Butcher Island and Pir Pau

Total Cost: Rs. 21.0 crores

(a) Improvement of facilities for handling oil products and liquid chemicals at Pir Pau

The establishment of 2 oil refineries at Trombay in the early 1950's has been followed by a large increase in petrochemical and fertiliser industries in the vicinity of the refineries. The sea-berth traffic in oil products such as LPG, Lube oils, special products etc. and liquid chemicals like Ammonia, acids, benzens, and various other grades of chemicals is handled at the existing jetty at Pir Pau.

Over the last decade there has been a rapid growth in the chemical industries at Trombay. Terminals

have been established for receiving, storing and distribution of sophisticated bulk chemicals and these facilities are being expanded. The import of hazardous chemicals at the Pir Pau Jetty has increased from 17,000 tonnes in 1977-78 to 75,000 tonnes in 1982-83 excluding Ammonia for the Rashtriya Chemical Fertilisers, and a future growth rate of 20 to 25% per annum has been projected by the trade. The refining of BH crude at a Trombay refineries will give rise to new products like L.S.H.S. which is proposed to be exported through the Pir Pau jetty, L.S.H.S. is required to be transported in a heated condition. The oil trade has also projected increases in traffic of LPG, Lube Oils and other petroleum products through Pir Pau.

The oil and chemical industries have been approaching the B.P.T. to improve and expand the facilities at Pir Pau. They desire berthing facilities for longer and deeper drafted vessels, a larger pipe network, night navigation facilities, improved bunker and fresh water facilities, more space at the jetty for loading/unloading arms or equipment, motorable road, safer working conditions, improved telecommunication facilities etc. In view of the above, it is essential to provide improved and enlarged facilities at Pir Pau. In this connection, it is stated that the study of modernisation and improvements to the existing Bombay Port has been entrusted to M/s Bertlin & Partners, British Consultants. After a visit of the Port by their senior partner in November, 1983, the Consultants have intimated their quick reaction

to the effect that apart from the new Nhava-Sheva Port, the modernisation of the Pir Pau berth, including the development of a new berth for chemical and oil products is likely to be a most significant project in the Bombay Harbour in the next 10 to 15 years.

The existing jetty at Pir Pau was constructed in 1922 and can normally handle vessels upto 525' length. The berth was originally deepend to -32' and to be maintained to -29', and a 600' wide access channel was provided, deepend to -10' and to be maintained to -18'. The rate of siltation in the area is very high and it has not been possible to maintain the designed depths. Approach to the berth is tidal and night navigation facilities are not available. The scope for expanding and improving the existing berth is also limited due to the proximity of cooling water intakes of the refineries and power stations and submarine pipelines. It is, therefore, proposed to construct a new jetty about 1.6 km south-east of the existing jetty, and to the north-west of the explosive anchorage. The natural depth of water at this location is about 7 to 7.5 metres, and the maintenance dredging problems which are attendant at the existing berth will be largely eliminated. The jetty head is proposed to accommodate two vessels, and it will be connected to land by a piled approach. The cost of the berth and approach is likely to be of the order of Rs. 15 crores.

- (b) Laying of two additional pipelines for products at the Fourth Oil Berth, Butcher Island

One 910 mm. dia. pipeline is being provided from ONGC Mainfold at Trombay to the Fourth Oil Berth for

loading of Bombay High Crude. The oil Co-ordination Committee has projected the requirement of pipelines for handling products at the Fourth Oil Berth to improve operational flexibility and better utilisation of the berth. It is proposed to provide 2 Nos. 610 mm. dia. pipelines, one for black oil and the other for white oil, from the valve station at Butcher Island to the Fourth Oil Berth in the Seventh Five year Plan.

Estimated Cost: Rs. 1.20 crores.

(c) Modernisation of communication network in Marine Oil Terminal.

Two submarine 28 pair cables were laid between Pir Pau and Butcher Island to provide communication. The cables have failed and at present, the communication is maintained by V.H.F. telephone link and V.H.F. sets. The Post & Telegraph Department have been entrusted with the work of providing micro-wave telephone link between Bombay and Butcher Island via the Bombay Telephone net work. Apart from the above, it is essential to have internal communication facilities between the existing jetties, Fourth Oil Berth, Pir Pau and the refineries and the oil installations. This can be provided only by means of separate communication cables to be laid between Pir Pau and Butcher Island.

Bharat Petroleum Corporation Ltd., are proposing to lay submarine power cables between Trombay and Butcher Island in connection with their tankage project and have offered to lay submarine communication cables also, if required. If the power cables and the submarine cables are laid at the

same time, there will be substantial savings in the mobilisation cost and the total cost of the facility can be shared between the BPT and the Oil companies. It is, therefore, proposed to have the submarine communication cables laid along with the power cable.

Estimated cost: Rs. 2.90 crores.

- (d) Additional submarine equipments at MOT Butcher Island for receiving electric power from Tata through submarine cables.

B.P.C.L. are proposing to install product tankage at Butcher Island. Pumps will be provided by them for transfer of the products from the tanks to their installations at Bombay. They are planning to take electric supply from Tata's receiving station at Trombay and lay submarine power cables from Trombay to Butcher Island and provide a 2.2 kv/3.3 kv substation in their Tank Farm. BPCL has agreed to meet the electric supply requirements upto 1000 KW of this Port Trust from their above installation. The BPT will have to share the total cost of the installation.

It is expected that the BPT's share will be about Rs. 100 lakhs. The arrangement will be financially viable, taking into account the annual consumption and the fixed operating costs.

Estimated Cost: Rs. 1.0 crores.

- (e) Procurement of an additional passenger-cum-water boat for the M.O.T. Butcher Island

At present, two launches 'Kumkum' and 'Kavita' are used to transport employees, numbering about 500 to and from Butcher Island. On commissioning of the Fourth Oil Berth, additional staff will have to be transported for operating and maintaining the new

facilities. For this purpose, it is proposed to procure an additional launch of similar capacity as Kumkum/Kavita. The launch will be equipped to carry water for supply to ships in addition to carrying passengers.

Estimated Cost : Rs. 0.6 crores.

(f) Provision of a Mobile Crane for Marine Oil Terminal.

At present there is no facility of crane at Butcher Island to handle heavy materials at different sites in the Island. It is therefore proposed to provide a mobile crane of suitable capacity which will be able to travel to different work sites and handle loads as required.

Estimated Cost: 0.3 crores.

2. Construction of an offshore Pilot Station

Cost: Rs. 10 crores.

The existing pilot vessel 'Venu' was procured in 1961 and will be outliving her useful life towards the end of the Seventh Five Year Plan. Instead of replacing 'Venu' by another pilot vessel, it is proposed to construct an offshore Pilot Station which will have an helipad and accommodation for pilots and other personnel. With this type of installation the high annual recurring cost of operating and maintaining a pilot vessel can be avoided without detriment to the operating facility of a pilot station. Full provision has been made in the Plan.

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3. Construction of Staff Quarters

Cost : Rs. 10 crores.

As against the target of housing at least 40% of the BPT employees in staff quarters, it has been possible to provide housing for about 20% of the staff only so far. The State Government have been approached to allot land to the BPT at Vikhroli and elsewhere from land declared surplus under the Urban Lands Ceiling Act. A provision of Rs. 10 crores is accordingly proposed in the Seventh Plan for constructing staff quarters. This also covers possible extension of welfare activities by providing stadium, swimming pool and a guest house.

4. Construction of warehouses at Wadala Incinerator Plot and Haji Bunder Dump.

Cost : Rs. 15.0 crores.

This port is experiencing acute paucity of land for providing covered space for uncleared cargo. A piece of land at the incinerator plot to be released by the Punjab Export Corporation is proposed to be developed for storing uncleared cargo. A warehouse with ground + two upper floors is proposed to be constructed at this plot. The area to be paved will be approximately 10,000 m². The area is proposed to be paved with asphaltic surface as the plot is recently reclaimed and will be subjected to settlement. Similar facilities are proposed to be provided at Haji Bunder Dump by constructing warehouses which will provide an additional covered warehousing area admeasuring 50,000 m². Full provision for both the schemes has been made in the plan.

5. Small Boat Harbour south of Ballard Pier Extension.

Most of the Port Department Flotilla, especially

Further, the number of crafts owned by the Port Trust have doubled since 1974. Today, the Port has about 34 crafts amongst which there are some newly acquired Fibreglass launches which are delicate and which need to be looked after properly. The south face of Ballard Pier Extension from where the pilots proceed to Pilot Station or other ships, is very rough during monsoon weather and it is essential that protection is given to these launches and tugs from the monsoon. The amount of damage to these crafts and maintenance, repairs etc. will be considerably saved, if only a small Boat Harbour protection is given to these launches and tugs.

In view of the foregoing facts, it is proposed to construct a small Boat Harbour to the south of Ballard Pier Extension, the estimated cost of which would be in the region of Rs. 600 lakhs.

6. Container handling Equipment:

At present report has already acquired 3 Rubber Tyre Yard Cranes with the capacity 35.5 tonnes and 5 top lift trucks two with a capacity of 35 tonnes each and 3 with a capacity of 25 tonnes. These equipments has been procured to handle the present level of traffic of 1,50,000 TEUs. During the Seventh plan a traffic of 1,80,000 TEUs. has been projected in order to handle this additional traffic it is necessary to procure Additional container handling equipment such as Yard trains, Trailers etc. Accordingly a provision of Rs. 10 crores has been made for the plan.

7. Modernisation of existing Docks:

Cost : Rs. 10.0 crores.

After the commissioning of the new port at Nhava-Sheva which is targetted to be completed by 1987,

bulk cargo and the major portion of container traffic will be shifted from the existing docks and the facilities will have to be adopted to handle the balance traffic which, in the D.P.R. for the Nhava-Sheva Port has been estimated to be of the order of 6.24 million tonnes by 1987-88, 6.85 million tonnes by 1992-93, and 7.07 million tonnes by 1995-96 (excluding POL traffic). The existing dock are proposed to be improved and modernised and a study in this regard has been entrusted to M/s. Bertlin & Partners. The exact scope of improvements and modernisation will be indentified after completion of the study by about March, 1984. However the said study will also cover improvement of vehicular transportation.

3. Madras Port:

1. Project: Second container berth with container handling facilities.

Cost: Rs. 30 crores.

During 1982-83 after installation of only two transfer cranes the port handled 18,500 TEUs. After recent commissioning of container terminal the port is handling 3500 TEUs per month. Port now is receiving enquiries from SCI, A.P.L., SEALAND etc. shipping lines for taking containers from the ports of Calcutta, Chittagong for transshipment at Madras. With the new container terminal, the traffic by 1984-85 would be 60-70,000 TEUs which is the capacity of the new terminal.

The consultants viz M/s EIL has forecast a throughput of 300,000 TEUs by 1990.

With the present annual growth of 6% in general cargo the traffic would increase from 2.8 million tonnes to 4.84 million tonnes by 1990-91. The containerisable cargo would be 2.7 million tonnes. Taking 50% of this, the traffic in containers would be about 1.30 million tonnes or 130,000 TEUs.

Calcutta has drawn up a scheme to modernise the container handling system, which would help in the growth of container traffic from the present 30,000 TEUs to 45,000 TEUs in the first instance and upto 100,000 TEUs subsequently.

Madras is the only port on east coast which can berth 3rd generation cellular container ships and obviously this would be the port for transshipment cargo from Calcutta, Chittagong etc. Thus the total container traffic by 1990-91 at Madras could be of the order to 1.5-2.0 million tonnes of 150,000-200,000 TEUs. The present new container terminal can handle about 70,000 TEUs with marginal increase upto 80,000 TEUs. Therefore there is a need to provide one more berth of length 240M with associated container handling facilities. With the addition of this berth, the total quay line berth would be 620 M which is required to handle 2 large size cellular vessels simultaneously.

2. Project: Floating Crane.

Cost : Rs. 12 crores.

The existing floating crane 'Vagai' of 120 T capacity is 21 years old and becomes due for replacement during 7th Plan period. The floating crane is used for unloading heavy packages at the moorings and berths and also deployed for project works. Considering its usage in the past it is necessary to replace the same. A provision of Rs. 3.0 crores is only made during 7th Plan so that procurement could be effected during the early

period of 8th Plan.

3. Project: Acquisition of a new dredger in replacement of Cauvery.

C o s t: Rs. 15 crores.

The dredger Cauvery is built in 1961. She is deployed at the approaches to the harbour, outside the southern and eastern breakwater and inside the harbour. She can dredge upto 13.7 M depth. Its life is 25 years. Moreover it is a steam dredger and about Rs. 50 lakhs/year is being spent on furnace oil every year, compared to Rs. 15 lakhs/year spent on diesel dredger 'Coleroon'. In view of the deepening of Bharathi Dock, port maintenance dredging has increased both in depths and in quantity. Hence it is proposed to initiate action for replacement during 7th Plan so that procurement could be completed in the 8th Plan period. Accordingly a provision of Rs. 3.0 crores has been proposed in the 7th Plan.

4. Project: Replacement of Two number Tugs "PALAR" & "PENNAR".

C o s t: Rs. 10 crores.

At present the port has six number Tugs out of which Tugs "PALAR" & "PENNAR" were built in 1963 and due for replacement in 1983. After commissioning of the container berth and second Oil Jetty and deepening of the Harbour the port would receive ships of size upto 1,40,000 DWT. In view of this, at any time the port has to provide four Tugs to attend, a vessel. To ensure this a minimum fleet of 6 Tugs is required. As two tugs mentioned above are of lower Bollard Pull and due for replacement in 1983 it is proposed to procure two tugs of higher bollard pull during the Seventh Plan.

4. Cochin Port:

1. Project: Procurement of container handling equipments.

C o s t: Rs. 15 crores.

As phase I recently, the scheme costing Rs. 510.2 lakhs has been sanctioned. This scheme envisages provision of yard cranes, forklifts truck and GFS and other related facilities. With this, it is possible to handle about 32,000 TEUs p.a. Considering the growth of traffic in container at this port, it is expected that this traffic would grow about 90,000 TEUs by the end of the 7th Plan. In order to meet the traffic demand, it has become necessary to augment the container handling facilities by providing one gantry crane and two transfer cranes and procurement of 3 FACT cranes at book value and other related civil works. Full provision has been made in the plan.

2. Project: Acquisition of high power tug -
30/35 ton B.P.

C o s t: Rs. 5.50 crores.

The port has three tugs procured during 1957, 1968 and 1976. One of these tugs is being replaced by a modern tug of 30 ton bollard pull. Secondly the port is also taking over the Cochin Shipyard tug with due modifications. With the commissioning of I.D.P., it has become necessary to provide adequate tugs to handle large tankers and fertiliser ships. The minimum requirement would be 5 tugs so that at least 4 tugs would be available at a time for shipping operations. In view of this, it is proposed to acquire one more tug for which full provision has been made.

5. Visakhapatnam Port:

1. Project: Replacement and modernisation of iron ore loading facilities to sustain the performance.

Cost: Rs. 6.0 crores.

In order to sustain the performance at the desired level, it has become necessary to carry out modifications/replacement of the existing system. These would involve procurement of 3 Nos. high power locos, replacement of circuit breakers, cable and renewal fixtures, procurement and installation of one bucket wheel reclaimer. The total cost of these replacements and modernisation is estimated at Rs. 6.0 crores, and full provision has been made.

2. Project: Replacement of locomotives with high horse power of 6 Nos.

C o s t: Rs. 8.40 crores.

At present the port is loading about 350 wagons including 150 petroleum and oil tanker wagons. Even in the existing volume of traffic, the average loading should be about 500 wagons per day but for the constraint in the availability of wagons. In view of the refinery expansion and also due to steel plant, the rail traffic would go up considerably. At present there are locos which were procured during 1969-72 and of lower capacity. The existing fleet of locos are not adequate to cope up even with the present work load. In order to haul more wagons in a single operation it has become necessary to procure 6 Nos. high horse power locos. Full provision has been made in the plan.

3. Project: Procurement of 30 ton bollard pull tug to replace 2 tugs "Nagarjuna" and "Dolphin"

C o s t: Rs. 5.50 crores.

The tugs "Nagarjuna" and "Dolphin" were procured earlier to 68 and were of low power. Due to continuous usage, their life has been considerably reduced. It is therefore, proposed to replace these two tugs by high power tug during the plan.

4. Project: Construction of a quay berth in place of 3 jetty berths.

C o s t: Rs. 5.00 crores

The existing 3 jetty berths in the inner harbour were constructed in 1950. These berths have become outdated and also outlived their life. In view of the continuous increase in the traffic both bulk and breakbulk and also likely increase in the coal traffic through this port, it would be necessary to augment the port capacity by construction of one berth by dismantling the existing 3 berths. Accordingly a provision of Rs. 500 lakhs has been made in the Plan.

5. Project: Upgrading ore handling facilities to handle 170,000 DWT ore vessels.

C o s t: Rs. 10 crores.

Due to ^{ent}persist demand from buyers of Iron Ore for deep draft facilities, it is proposed to deeper the harbour to receive vessels of 170,000 DWT and upto a draf of 17.0 M.

6. Kandla Port:

1. Project: One twin screw diesel driven tug of 30 ton BP.

Cost: Rs. 5.50 crores.

The existing 15 ton bollard pull tug "Rupavati" is 19 years old and needs to be replaced during the 7th Plan. Since bigger size of ships are calling at the port, it is proposed to replace this tug by a higher bollard pull tug of 30 ton. A provision of Rs. 5.50 crores has been made in the plan.

2. Project: One suction hopper barge in replacement of "S.D. Kandla" of capacity of 2500 cu.m.

Cost: Rs. 20 crores.

The existing dredger "S.D. Kandla" is 21 years old. It is due for replacement within a period of 3 years. Since the maintenance dredging is much more than the dredging capacity available with the port, it is proposed to procure a dredger with a hopper capacity of 2500 cu.m. in place of the existing dredger "S.D. Kandla" of 800 cu.m. of hopper capacity. Full provision of Rs. 20 crores has been made in the plan.

3. Project: Construction of VII Cargo berth.

Cost: Rs. 22 crores.

With the completion of the 5th cargo berth, the total capacity of the port in general cargo would be 16 lakh tonnes. The traffic as projected would be of the order of 29.0 lakh tonnes in 1989-90. Thus there would be a gap of 13.0 lakh tonnes by the end of the 7th Plan. It is therefore,

proposed to take up the construction of one additional general cargo berth at an estimated cost of Rs. 22 crores. The scheme would be taken up during 1987-88 so that the capacity would be created during the beginning of the 8th Plan to meet the demand in cargo traffic. A provision of Rs. 10.00 crores only has been made during the plan.

4. Project: Port facilities at Vadinar.

C o s t: Rs. 25 crores.

The present port of Kandla has draft limitations and at present cater to the ships of draft upto 30'. Due to heavy siltation in the navigational channel, it has not been possible to deepen further and maintain the channel so as to accommodate bigger size of ships. Kandla Port being the only port which would cater the entire northwest region, the necessity of creating deeper berthing facilities has been felt. At Vadinar, necessary infrastructure has been developed to cater to the existing SBM for handling large crude oil tankers. The hinterland is rich in bulk commodities like lime stone, bauxite, oil cakes, salt etc. Secondly the OCC has requested for facilities for a product tanker terminal at Vadinar during the 7th Plan. Considering the potential for export of the above bulk cargo, the requirement of OCC for an oil product terminal and also the port has to serve large area in northwest region, it might be necessary to create deep berthing facilities at or near Kandla. Since as mentioned above, Vadinar has been provided with infrastructure facilities for the existing oil terminal and the location is free from both capital and maintenance dredging, it may be desirable to develop deep berthing facilities at Vadinar. Accordingly an ad hoc provision of Rs. 25 crores has been made in the

, Vadinar

Plan. However, before taking up this project, it would be necessary that detailed feasibility studies are to be conducted to establish traffic potential and the economic of handling bulk commodities through the proposed port and also its impact on neighbouring minor ports as well as port at Kandla.

7. Marmugao Port:

1. Project: Replacement of tug "Donapaula".

Cost: Rs. 5.50 crores.

The tug "Donapaula" is 22 years old and become due for replacement during the 7th Plan. The present condition of the tug is so poor and beyond repairs. Hence it is proposed to replace it by a higher capacity tug of 30 B.P. ton. Accordingly full provision has been made in the Plan.

2. Project: Additional barge unloading jetty for iron ore unloaders with related conveyors and modifications to the shipping system.

Cost: Rs. 5.50 crores.

The export of iron ore at this port would be reaching a level of 16 million tonnes shortly. Out of this, the share of the ports economical ore handling plant will increase from the present 8 million tonnes to 9-10 million tonnes. Though it would be possible to meet this demand on the shipping system by marginal improvements, existing capacity of the receiving system need to be augmented. Hence provision has been made for the additional barge berth, barge unloading equipment and necessary modifications needed to integrate with the existing plant.

3. Project: Acquisition of transhipper.

Cost: Rs. 20 crores.

At present the ship nominated by Japan is in the range of 150000 dwt with deep draft of 16 to 18 m for full loading, whereas the present depth is only 13m. The deepening of the harbour to accommodate such size of vessel need a very large investment of the order of Rs. 50 crores. The other alternative would be to acquire a captive trans-shipper so that such big vessels could be loaded at the berth upto a permissible draft and uptopping them in midstream of ports own transhipper. The private owned transhipper is committed to loading those vessels which have been nominated by Japanese buyers who have financed their berths at an exclusive/priority basis. The shippers who are not owning transhippers, are also receiving large size vessels for loading at berth No.9. These shippers do not have ready access to the private transhippers. With the increased export of iron ore, the present transshipment capacity would be inadequate. Permitting the private exporters to acquire new ^{*}transhipper owning shipments. It is therefore proposed to acquire one transhipper at an estimated cost of Rs. 20 crores.

4. Project: Additional general cargo berth.

Cost: Rs. 14 crores.

After the commissioning of the multi purpose cargo berth, the port capacity in general cargo is about 6 lakh tonnes. As per the traffic projection, the port has to handle 10.0 lakh tonnes in 1989-90. It is, therefore, proposed to take up construction of general cargo berth during the 7th Plan so that the facilities could be commissioned during the plan itself. Therefore full provision has been made in the Plan.

| ^{*}/transhipper would be detrimental to the port as well as non-

5. Project: Housing for staff.

Cost: Rs. 6 crores.

The total number of residential units under construction would be 1111 by 1985 as against a staff strength of 6450. This works out to a percentage satisfaction of 30%. It is, therefore, proposed to construct about 1209 additional units mainly to cater for lower category staff of port. Provision also includes improvement to the existing water supply, sewerage plant and appertinent facilities.

8. Paradip Port:

1. Project: Sand By-passing arrangement and construction of Island Breakwater and Sand Trap Dredging.

Cost: Rs. 10.0 crores.

The siltation problem at Paradip in the shipping channel is of perennial nature. After the construction of breakwater, the bulk of the littoral drift deposited on the back side of the southern breakwater and consequently there is erosion on the southern sea shore. This necessitates dredging on one hand from the shipping channel and the back side of the southern breakwater and by-passing the same sand to the extent of 6 lakh Cu. M. per annum for beach nourishment on the northern sea shore. For effective trapping of the bulk of the littoral drift on the Southern side of the channel, a sand trap was created. The original sand by-passing system consisted of a shore based sand pump installed on a teestle to intercept sand on its way to sand trap and by-pass the

same through floating pipe line across the lagoon to the northern side. The Port had a suction dredger which was deployed for dredging the sand trap as well as the shipping channel. The Port dredger 'Konarka' got grounded in 1979 and the shore based sand pump dredger was damaged during the cyclone of 1982. Since then, the Port could not effectively by-pass the sand required for essential beach nourishment of the northern shore and the sand trap got completely filled-up in the process spilling the incoming sand into the shipping channel itself.

Detailed studies were carried out successively by Consulting Engineering Services along with M/s. RPT of London and by CWPRS. Considering the present deep water control, the location of the sand trap has been relocated. It is necessary to recreate the sand trap and device effective ways and means to dredge the same ~~trap and device effective ways and means to dredge the same~~ over a period and by-pass the necessary sand to the northern shore for beach nourishment. The present proposal envisage creation of sand trap, provide facilities for effective removal of sand from the same and create a suitable island breakwater to provide leeway for necessary tranquility of the area.

2. Project: Capital dredging to deepen the channel, turning circle, and bulk cargo berth.

C o s t: Rs. 10 crores.

Paradip port is virtually a mono-commodity port which handles about 1 million tonnes of iron ore in a total traffic of about 1.5 - 1.6 million tonnes. With the existing ore handling facilities, the port can handle facilities upto 60000 dwt only. The iron ore buyers are

demanding port facilities to accommodate vessels of 1 lakh dwt and above as, such bigger size of ships gives an advantage in ocean freight. In view of the limitation of the facilities at Paradip, the traffic in iron ore has declined from about 2 million tonnes in 1980-81 to 1 million tonnes in 1982-83. In order to sustain the present levels of export, it would be necessary to deepen the harbour to accommodate ships of size at least upto 1 lakh dwt by dredging the channel, turning circle etc.

3. Project: Construction of residential quarters for port employees.

C o s t: Rs. 5.00 crores.

The present strength of the port is 3326. At present there are about 1950 quarters of types ranging from A to D. These include temporary quarters which were constructed during the construction of the port. Since the port is situated 100 km. away from the nearest town, there is no possibility of hiring accommodation by the port's staff. It is therefore proposed to construct requisite number of quarters for which full amount has been provided in the 7th Plan.

4. Project: Replacement and procurement of floating crafts.

C o s t: Rs. 10 crores.

Most of the floating crafts like launches and barges would have outlived their life by 1985-86 and would need replacement during the 7th Plan period. In order to replace/modernise the existing floating crafts, it is proposed to

replace the existing 4 launches, one tug "Sarla". In addition it is proposed to procure one water barge, one launch, one patrol rescue launch. The total provision required would be Rs. 6.0 crores.

5. Project: Procurement of mobile suction dredger.

Cost: Rs. 20 crores.

The port dredger "Konarka" got grounded in 1979. The existing shore based sand pump dredger was badly damaged during the cyclone of 1982. Since then the port was not in a position to tackle the littoral drift and also nourishment of the beach. At present the maintenance dredging is being carried out by DCI to maintain the requisite depths. Effective nourishment virtually is not being done. It is therefore necessary to procure the dredger for not only maintaining the navigational channel but also to nourish the beach. It is therefore proposed to procure the dredger for which a provision of Rs. 15 crores has been made. Dredger would be commissioned during the beginning of 8th Plan.

6. Project: Procurement and replacement of cargo handling equipment.

Cost: Rs. 5.00 crores.

Most of the cargo handling equipments that are under operation have been purchased in 75-76 and the life of these plants are about 10 years and would be due for replacement by 1985-86. The port also is handling heavy packages and increased traffic. Therefore, it is proposed to procure high capacity wharf cranes besides replacing the existing cranes in a phased manner. Accordingly a provision of Rs. 4.0 crores has been made.

7. Project: Coal handling facilities

Cost: Rs. 10 crores.

With the commissioning of 2nd and 3rd general cargo

berths, the port capacity would be adequate to handle the projected traffic during the 7th Plan. However, the port has been called upon to handle about 6.5 lakh tonnes of coal annually for TNEB. Besides it is proposed to export a minimum of 5 lakh tonnes coal through Paradip. In view of this the capacity would fall short of the projected traffic during the later part of the 7th Plan period. Accordingly provision has been made for providing coal handling facilities so that these facilities berth could be commissioned during the plan itself.

9. Tuticorin Port:

1. Project: Construction of one more additional cargo berth.

C o s t: Rs. 8.0 crores.

The port capacity in general cargo with the construction of 2 additional general cargo berths taken up during 6th Plan is 12 lakh tonnes. The traffic projected is 16.60 lakh tonnes in 85-86 increasing to 13.80 lakh tonnes by 89-90 thus resulting in a gap of 4-6 lakh tonnes. At present the port is handling general cargo at a very high rate of occupancy which is above 85%. During the last 6 months, this has increased as high as 93%. Considering the steady growth of traffic and also very high berth occupancy, the necessity of one more additional general cargo berth has been felt and accordingly full provision has been made in the plan.

Contd....

2. Project: One tug of 130 ton bollard pull.

Cost: Rs. 550 lakhs.

At present the port has only two tugs. Considering the ships calling at the port, this is not considered adequate. Moreover, the tugs are to be dry docked annually which takes 2 to 3 months for each vessel. Therefore it is necessary that the port should acquire at least 2 more tugs so that at any time, a minimum of 3 tugs are available round the year. However, in view of the resources constraint, it is proposed only to procure one tug during the 7th Plan.

3. Project: Construction of one more coal jetty.

Cost: Rs. 11.0 crores.

At present, there is one coal jetty which is catered to existing 3 units of 210 MW for the Tuticorin Thermal Power Station. The total coal intake of the station is about 1.8 million tonnes. The port is meeting its requirements by handling coal not only at the coal jetty but also at the general cargo berths. There are plans to further expand the thermal power stations by adding two units of 210 MW and the total requirement of the coal would go up from the present 1.8 million tonnes to 3.0 million tonnes.

At present TNEB is experiencing difficulties in discharging coal by using ships gear and through of the jetty has been of the order of 1 million tonnes. After expansion of the power station, the existing coal jetty and also by using general cargo berths, it would not be possible to meet the requirement of 3.50 million tonnes including coal for industries. It is therefore proposed to provide one more coal jetty to meet the coal requirements. This is considered necessary in view of the large amount of coal need to be handled at the port.

10. New Mangalore Port:

1. Project: Construction of one more additional cargo berth

Cost: Rs. 12 crores.

M.D.L. has established a base at New Mangalore Port. In connection with ONGC, they are importing pipes which are being processed and are being sent to ONGC. The present traffic is of the order of 2-3 lakh tonnes. MDL has indicated to the port that the traffic during the 7th Plan would be of the order of 5 lakh tonnes annually. Accordingly a provision of Rs. 4.0 crores has been made in the 7th Plan.

Crude oil handling facilities at New Mangalore Port for the proposed Oil Refinery.

1.1 The Government of India has accepted in principle the installation of two grass-root petroleum products and reduce import of deficit petroleum products. A Site Selection Committee, appointed by the Department of Petroleum, reviewed a number of sites for locating the two new refineries. It recommended the location of one refinery in the North-West at Karnal in Haryana and the other in South-West near Mangalore in Karnataka. This recommendation was further reviewed in an investment planning analysis which confirmed the selection of these two locations and also established that the size of these two new

refineries should be 6 Million Tonnes per annum each.

1.2 Hindustan Petroleum Corporation Limited (HPCL) prepared a feasibility Report on Mangalore Refinery in September 1982 and submitted the same in April 1983 to the Department of Petroleum. The project proposal of the refinery envisages installation facilities to process 6 MT of crude per annum with equal mix of Bombay High (BH) and imported crudes. The plant will also have the flexibility to process the neat BH crude as well. The Refinery, which in full operation, is likely to produce 4 million Tonnes of products per annum, of which over 2 Million Tonnes is likely to be shipped out by sea through New Mangalore Port.

1.3 The estimated cost of the Refinery is about Rs. 1142 crores (March 1983 prices).

1.4 The investment proposals for the proposed Karnal and Mangalore Refineries were considered by the Public Investment Board (PIB) in the meeting held on 21st June, 1984. The PIB decided to recommend the proposal for Karnal Refinery for the consideration of the Cabinet. As regards the Refinery at Mangalore, the decision of the PIB was as follows :-

"As far as the proposal for Mangalore Refinery is concerned, the work may be confined to preliminaries such as land acquisition, soil studies, updating and confirming of cost including the cost of associated works such as augmentation of capacity in the Mangalore Harbour and cost of infrastructure for crude and product movements."

2.1 Presently, there is an oil jetty at New Mangalore Port which mainly handles POL Products. The jetty is

designed for 30,000 DWT vessels but has a provision to be extended/strengthened to receive fully loaded 1,00,000 DWT tankers.

2.2 New Mangalore Port Trust commissioned in August 1983, M/s. Consulting Engineering Services (India) Private Limited to prepare a Project Report on port facilities for handling crude and POL Products. The Consultants submitted a draft final report in March 1984 which is under examination in consultation with the Department of Petroleum.

3.1 After considering the techno-economic merits of the various alternatives, the Consultants have recommended the Inner Harbour oil jetty proposals for 1,20,000 DWT for implementation. They have further recommended that immediately dredging may be limited to that required for 60,000 DWT tankers and the dredging for 1,20,000 DWT vessels can be carried out as and when required later. A second product berth may have to be provided at a later stage.

3.2 The capital cost of the alternatives recommended by the Consultants (For 60,000 DWT size) is Rs. 53.0 crores. The main components of the proposals are :-

- i) upgrading of the existing oil jetty for 1,20,000 DWT size to receive crude tankers;
- ii) Construction of one new product berth, designed for 60,000 DWT size;
- iii) Capital dredging; and
- iv) extension of the breakwaters.

CHAPTER - VI

NATIONAL INSTITUTE OF PORT MANAGEMENT

At present there are 10 Major Ports in the country having about 2,800 middle and senior level managerial personnel. When the new Port of Nhava-Sheva becomes operational by the end of 1987 this number will go up further. In order to provide training and orientation to port managerial personnel at the middle and senior level to achieve continuous improvements in port operations and management, it has been decided to set up a National Institute of Port Management (NIPM) at Madras, at an estimated capital cost of Rs.6 crores.

2. The Institute is being set up based on a feasibility study undertaken with UNDP assistance through 2 UNDP Experts. It will be managed by a registered society to be headed by Secretary (Shipping & Transport and with the following composition:

- | | | | |
|-----|--|-----|--------|
| (1) | Additional Secretary,
Ministry of Shipping & Transport | ... | Member |
| (2) | Financial Adviser,
Ministry of Shipping & Transport | ... | Member |
| (3) | Chairman,
Indian Ports Association | ... | Member |
| (4) | Chairman,
Calcutta Port Trust | ... | Member |
| (5) | Chairman,
Madras Port Trust | ... | Member |
| (6) | Representative of the
Planning Commission | ... | Member |
| (7) | Representatives of the Indian
Institute of Management,
Bangalore | ... | Member |
| (8) | Representative of the
Shipping Corporation of India
Ltd. | ... | Member |

(9) Director of the Institute - Member

3. The capital cost of the proposed institute for the purpose of separate building complex and other permanent facilities will be borne by Government. The recurring costs for running the institute will be borne by the Indian Ports Association through contributions from major ports.

4. UNDP assistance for the Institute has been agreed to in principle in the following areas:-

- (1) Provision of inter-national staff for training the prospective staff of the Institute;
- (2) Undertaking of study tours and group training which includes travel and subsistence cost outside India of the Institute staff and training materials; and
- (3) Assistance in drawing up schedule of training equipments. The equipment to be provided by the UNDP will be either for photographic re-production, micro processing or recording performances for use in the class rooms.

5. It will take 3 to 4 years before the institute acquires its own full-fledged building complex and other related facilities. In the meantime a beginning is being made in one of the buildings of the Madras Port Trust. A provision of Rs. 45 lakhs has been included in the Annual Plan 1984-85 for payment of a grant to the Institute to meet its initial expenses on land acquisition, etc.

CHAPTER - VII

RESEARCH AND DEVELOPMENT SCHEMES

7.1 The National Committee on Science & Technology (NCST) set up a number of panels in 1972 to formulate a National Science and Technology Plan for the various sectors of the economy. One such panel was on Marine Resources. One of the planning groups of this panel on 'Coastal Zone' headed by Development Adviser (Ports), identified certain topics for Research under the R&D Programme in its report. The basic objective in identifying the broad areas were to achieve more economical coastal structures, optimal alignments and reduce silting in channels and harbours, cheaper and more effective methods of countering erosion etc. and finally an integrated development of the entire coastal zone.

7.2 In December, 1973, the Department of Science and Technology indicated to this Ministry that the transportation panel had drawn up S&T Plan for shipping and transport (including Roads, Shipping including Shipbuilding, Ports, Inland Water Transport etc.) and had also thereafter identified the portion for incorporation in the plan of the Ministry of Shipping and Transport.

7.3 The Department of Science and Technology indicated in the above communication that a tentative allocation of Rs. 400 lakhs had been made by the Planning Commission for the ports in the Fifth Five Year Plan.

The following are some of the areas identified for R & D Schemes by the panel on coastal zone :-

- (1). Generation of basic data for the coastal areas of India.
- (2) Erosion and siltation.
- (3) Pollution control and abatement.
- (4) Design of coastal structures.
- (5) New material for construction and use in ports and harbours.
- (6) Offshore structures including floating breakwaters.

A Research Committee was constituted in this Ministry to identify the broad areas for research, scrutinise the schemes proposed, also the acquisition of capital equipment, screen the requests for funds and monitor the progress on the schemes and evaluate them. Committee is also to advise on the method of dissemination of results to the user agencies. The Committee had two representatives of the user agencies, namely, Port Trusts on the Committee. Department of Science & Technology is also represented on the Committee alongwith the representatives of the Research Agencies.

7.4 Later it was felt necessary to bring the whole Water Transport Sector under the purview of this Research Committee and as such, alongwith the ports sector, the Lighthouses and Lightships, IWT and Shipping & Shipbuilding Sector were also included in this group and the Research Committee was enlarged to include a representative each from IWT, Lighthouses and Lightships and the Shipping & Shipbuilding Sectors.

7.5 The following broad principles were

kept in view while selecting the schemes:-

- a) Emphasis is to be mainly on study of problems being faced rather on basic research.
- b) The problem should have a wider application and not a one time problem or confined to a single situation.
- c) The studies should be of short duration so that the benefits become available within a reasonable time.
- d) Make use of available resources to the maximum extent possible thereby avoiding duplication of efforts and investments.

7.6 Fifteen schemes estimated to cost Rs. 64.30 lakhs were selected for study during the period 1974-75 to 1984-85 and funds to the tune of Rs.36.213 lakhs were released. Implementing agencies, estimated costs, funds released and the progress on these schemes are as follows:-

| (Rs. in lakhs) | | | | | |
|---|------------------------------|-------------------------|--|--|---------------------------------|
| Schemes | Imple-
menting
agency. | Estima-
ted
Cost. | Funds
relea-
sed upto
1983-84 | Funds
pro-
posed
for
1984-85 | Spill
over
to VI
Plan. |
| | (1) | (2) | (3) | (4) | (5) |
| 1. Investigation
for the main-
tenance of arti-
ficially developed
shipping channels. | CWRPRS | 5.00 | 4.05 | 0.25 | 0.50 |

Progress: Four interim reports have been received.

 (1) (2) (3) (4) (5)

2. Assessment of silta- CPT
 tion in artificially Cal-
 developed shipping cutta
 channels in estuaries
 in the Eastern Coast. 2.80 2.80 -- --

Progress: The study is almost complete.
 The final report is under preparation.

3. Stabilisation of CWRPRS
 entrance and bars Pune
 at the mouth of
 creeks and tidal
 inlets. 4.25 2.55 -- 1.70

Progress: Three interim reports have already
 been received.

4. Floating Break- I.I.T.
 waters. Madras 0.83 0.83 -- --

Progress: Study completed. Final report received.

5. Development of CPT
 System analysis in Cal-
 soace and time for cutta. 2.54 2.54 -- --
 evolving.

Progress:- The study is completed. The final
 report is under preparation on
 Analogue model while on Mathematical
 Model, it has already been received.

6. Assessment of forces CWR
 on marine structures PRS
 for evolving economi-
 cal design criteria. 15.00 6.24 6.00 2.76

Progress: Data collection and analysis is
 continuing.

7. Installing of tele- CWR
 metered wave height PRS
 recorders and analy- Pune
 sis of wave climate
 along the coast of 19.00 11.00 2.00 6.00
 India.

Progress: Three interim reports have been received.
 Field Data is being collected and analysed.

(1) (2) (3) (4) (5)

8. Evolution of Port HIPL 0.75 0.375 -- 0.375
layouts water front New
structures like Delhi.
wharves, jetties,
breakwaters, slipways
etc. reference work.

Progress: Interim report on four major ports have been received.

| | | | | | |
|--|------|------|------|------|------|
| 9. Coastal erosion & protection along the West Coast of India, Investigation of affected areas and development of suitable design. | KREC | 2.20 | 1.50 | 0.10 | 0.60 |
|--|------|------|------|------|------|

Progress:- Final report is under preparation.

10. Flume studies for CW&PRS
testing the formula Pune. 0.084 0.084 -- --
for weight of
armour units.

Progress: Final report is under preparation.

| | | | | | |
|---|------|------|-------|---|-------|
| 11. Use of Polymeric Flocculating agents in dredging and reclamation operation. | Pune | 1.00 | 0.388 | — | 0.612 |
|---|------|------|-------|---|-------|

Progress: Draft final report is received and is under scrutiny in the Ministry.

| | | | | |
|--|------|------|------|----|
| 12. Investigation on KREC
corrosion of iron Surath-
steel and RCC kal
structures & protec-
tive measures
thereof. | 3.08 | 2.90 | 0.18 | -- |
|--|------|------|------|----|

Progress: Project is nearing completion.

| | | | | |
|--|------|------|------|------|
| 13. Simulation of the CPT dispersion process Cal-
in a Tidal approach cutta
channel. | 6.82 | 0.40 | 2.50 | 3.92 |
|--|------|------|------|------|

Progress: Much progress could not be achieved due to shortage of staff.

7.11 New Port Technology:

Port and Shipping technologies are changing rapidly. For harnessing new technologies the two basic requirements are capital and skilled manpower. Developed World Ports advantageously placed as they are in both these areas, face relatively fewer problems in responding to technological changes and exploiting their potential benefits. The traditional general cargo package is broken up in a number of specialised packages of larger and larger units - containers, RO-RO. The process of unitization appears irreversible. Mechanisation is gradually replacing manual handling, stacking, transfer and storage of cargoes.

Though the container revolution came to India in early seventies, our ports till quite recently have been handling increasing volumes of container throughout by conventional means. Though we perceived the benefits of containerisation and watched its growth in the developed world ports closely, we responded to it till lately somewhat passively. This thinking changed when it was realized that any further delay in adopting this technology would not be conducive to the development of our export/import trade. Likewise there are several other technological innovations at different stages of assimilation, absorption and adoption in various ports, except our own.

To enable our ports to remain competitive it is important for the port managements to remain fully abreast of technological changes and innovations and examine and test speedily their long and short term impact on traffic operations with or without modifications in design etc. to suit local needs and requirements.

This is possible only if the port managements are allowed a certain measure of freedom and flexibility to adopt and integrate these technological changes into their systems. The proposed provision of Rs. 2 crores is suggested to meet this requirement. Its utilisation will, however, be subject to the satisfaction and control of the Ministry. It will obviate the need to secure piecemeal approval of the Planning Commission or deferment of proposals for adoption of new or upgradation of existing technologies, however, urgent for consideration till the subsequent Five Year Plan.

CHAPTER - VIII

FINANCING OF THE PLAN - MAJOR PORTS

8.1 At the time of the formulation of the Sixth Plan (1980-85) it was envisaged that the ports of Bombay, Kandla and Madras would be in a position to finance their Sixth Plan Schemes in toto. It was also envisaged that the ports of Cochin, Visakhapatnam, Mormugao, Tuticorin and New Mangalore will be able to find some internal resources to finance their Schemes. In all it was assessed that out of the total Sixth Plan outlay of Rs. 521 crores for the 10 major ports, excluding Nhava Sheva Port Project, the internal resources would be Rs. 181 crores and the balance Rs. 340 crores will be by way of budgetary support.

8.2 The revised outlay for the Sixth Plan is now assessed at Rs. 568 crores, out of which the internal resources will be to the tune of Rs. 255 crores as against Rs. 181 crores envisaged earlier. The balance Rs. 313 crores (including Rs. 24 crores for Madras Port for deepening of Bharati Docks being financed by Netherlands Govt.), will be met through budgetary support as against original estimate of Rs. 340 crores. As regards Nhava Sheva Port Project only a sum of Rs. 5 crores has been given as loan to the Port Trust. During the remaining period of the Sixth Plan, the project will be financed by taking loan from the Bombay Port Trust.

8.3 An analysis of the financial status of the major ports has shown (vide Annexe I) that during the Seventh Plan period, only the ports of Bombay and Kandla will be able to finance their schemes fully out of their internal resources. The ports of

Paradip and Tuticorin will have no internal resources for financing Plan Schemes. The other ports will be able to finance their 7th Plan Schemes only partly. In all, it is estimated that against a total Plan outlay of Rs.1500 crores, the financing pattern will be as follows:-

| <u>Rs. in crores</u> | |
|------------------------|-------------|
| (a) Internal resources | 625 |
| (b) External Aid | 256 |
| (c) Budgetary support | 619 |
| Total: | <u>1500</u> |

8.4 Port-wise details are given in the Statement following.

FINANCING

| <u>(Rs. in crores)</u> | | | | |
|------------------------|---|--------------------------------------|-------------------------------|------------------------------|
| <u>P o r t</u> | <u>Proposed
7th Plan
Outlay</u> | <u>Internal
Resour-
ces.</u> | <u>Exter-
nal
Aid</u> | <u>Budgetary
Support</u> |
| <u>(1)</u> | <u>(2)</u> | <u>(3)</u> | <u>(4)</u> | <u>(5)</u> |
| 1.a) Calcutta | 75 | -- | -- | 75 |
| b) Haldia
Docks | 77 | 50 | -- | 27 |
| c) BHRTW | 34 | -- | -- | 34 |
| 2. Bombay | 160 | 160 | -- | -- |
| 3. Madras | 108 | 35 | 6* | 67 |
| 4. Cochin | 71 | 10 | -- | 61 |
| 5. Visakha-
patnam | 66 | 20 | -- | 46 |
| 6. Kandla | 85 | 85 | -- | -- |
| 7. Mormugao | 72 | 35 | -- | 37 |
| 8. Paradip | 107 | -- | -- | 107 |
| 9. Tuticorin | 49 | -- | -- | 49 |

| -0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0- | | | | |
|---|------|-------|--------|-----|
| (1) | (2) | (3) | (4) | (5) |
| ----- | | | | |
| 10. New Mangalore | 92 | 10 | -- | 82 |
| 11. Nhava Sheva | 470 | 220** | 250*** | -- |
| 12. Training Instt. for Port Workers | 6 | -- | -- | 6 |
| 13. R&D Schemes | 1 | -- | -- | 1 |
| 14. Port New Technology | 2 | -- | -- | 2 |
| 15. Upgradation of 2 int. ports as major ports | 25 | -- | -- | 25 |
| ----- | | | | |
| Total: | 1500 | 625 | 256 | 619 |
| ----- | | | | |

* Dutch Aid for deepening Bharati Docks.

** Loans from Bombay Port Trust.

*** World Bank Loans.

8.5 Pooling of Resources:

The Planning Commission in their Approach Paper to the Seventh Five Year Plan has recommended pooling of resources of all the ports for the optimum development of ports sector. As will be seen from the analysis of financial status of major ports made in para 8.3, it is evident that after taking into account Rs. 625 crores being assumed as internal resources to be made available by the ports in the Seventh Plan, there will be hardly any funds left with

any port. Bombay Port Trust funds are already being utilised for Nhava Sheva Port and Madras Port. At the end of the Seventh Plan, Bombay Port Trust also may not have sufficient surplus funds. As such pooling of resources of ports is not being contemplated for the time being.

8.6 World Bank Assistance:

The requirements in the VII Plan period for Nhava Sheva Project have been assessed at Rs. 470 crores, which are planned to be financed through BPT loans (Rs. 220 crores) and World Bank loans (Rs. 250 crores).

8.7 Asian Development Bank Financing (ADB):

The Schemes for container handling facilities for the ports of Bombay, Calcutta, Cochin and Madras, oil jetties at Haldia, New Mangalore Port and Vadinar (Kandla) and purchase of dredgers by the ports and the Dredging Corporation of India have been suggested to the Department of Economic Affairs for A.D.B. Financing. The A.D.B. delegation which was recently here showed interest in financing container handling facilities (estimated cost Rs. 65 crores) and oil handling facilities for the proposed refinery at New Mangalore Port (Rs. 116 crores). As such there is possibility of some external aid being provided by the Asian Development Bank.

FINANCIAL STATUS OF MAJOR PORTS - INTERNAL RESOURCES

| Name of Port. | (Rs. in crores) | | | | | | | |
|---------------|------------------------------|---|--|---|------------------------|---|--|--|
| | Outlay proposed in 7th plan. | Gross Internal resources excluding depreciation but including balance (1985-90) resources as on 1-4-85. | Anticipated generation during 7th plan | Repayment of loan including interest payment. | Depreciation (1985-90) | Total Internal resources (1985-90) including depreciation and balance as on 1-4-85. | Total Internal resources assumed to be available for financing the 7th Plan Project. | |
| Bombay | 160.00 | 369.67 | 126.88 | -- | 40.73 | 410.40 | 160.00 | |
| Calcutta | 75.00 | (-) 24.39 | 14.38 | 49.24 | 26.60 (-) | 71.10 | -- | |
| Haldia | 111.00 | (-) 105.87 | 117.55 | 46.28 | 27.05 | 44.22 | 50.00 | |
| Madras | 108.00 | 24.37 | 21.81 | 17.50 | 33.75 | 25.55 | 35.00 | |
| Cochin | 71.00 | (-) 12.00 | 17.00 | 35.00 | 5.00 | 10.00 | 10.00 | |
| Visakhapatnam | 66.00 | 122.97 | 19.27 | 88.92 | 27.45 | 34.05 | 20.00 | |
| Kandla | 85.00 | 110.32 | 78.10 | 18.46 | 12.00 | 103.86 | 85.00 | |
| Mormugao | 72.00 | 52.80 | 48.91 | 44.34 | 28.36 | 36.82 | 35.00 | |
| Paradip | 107.00 | (-) 54.23 | -- | 78.34 | 9.70 (-) | 29.93 | Nil | |
| New Mangalore | 92.00 | 3.84 | 5.90 | 21.81 | 7.72 | 11.56 | 10.00 | |
| Tuticorin | 40.00 | 0.05 | 11.70 | 34.92 | 8.46 (-) | 14.71 | Nil | |
| Nhava Sheva | 470.00 | -- | -- | -- | -- | -- | 220.00* | |
| | 1468.00 | 487.55 | 461.50 | 434.81 | 226.82 | 560.72 | 625.00 | |

* Rs. 220 crores to be given as loans to Nhava Sheva.

CHAPTER - IX

DREDGING CORPORATION OF INDIA

9.1 Dredging is one of the basic operations in the development and maintenance of Ports and Harbours. In most Ports, dredging is a continuing process to maintain the requisite depth of water in approach channels, inner channels, turning basins and alongside wharves. For the development of new and better facilities and creation of new Ports, capital dredging is often necessary to have the planned depths.

9.2 A Central Dredging Organisation was set up in the Ministry in 1966 by the acquisition of two small dredgers with the main aim of providing dredging assistance to minor ports. By 1971, two more large and sophisticated dredgers were required to cater to capital dredging requirements of major ports. However, expansion was sanctioned in 1973. Some additional ancillary equipment was acquired during the subsequent years.

9.3 At first, the existing fleet was operated departmentally by the Ministry. On 1st May, 1968, the Shipping Corporation of India was entrusted with the task on an agency basis. The further growth in the size of the fleet and the tremendous increase in SCI's own operations made it necessary to review the arrangements and evolve a separate organisation exclusively for dredging.

9.4 Accordingly, the Dredging Corporation of India Limited was registered as a wholly owned Government Company on March 29, 1976 under the Companies Act, 1956 with its Registered Office at New Delhi. The D.C.I., started its operations from April 1, 1977 with their Headquarters at Visakhapatnam, Andhra Pradesh. The main

objective of the D.C.I. is to provide integrated dredging services to major and minor ports and in Inland Waters. The authorised capital of the Corporation is Rs. 30 crores and the paid-up capital is Rs. 28 crores.

9.5 At the time of its formation, the D.C.I. had the following craft^s:-

4 trailer suction dredgers, 4 cutter suction dredgers, 4 tugs, 3 hopper barges, 2 each of survey and mooring launches.

SIXTH PLAN

9.6 The Sixth Plan contained a provision of Rs. 20 crores for the Corporation out of which Rs. 15 crores was to come from internal resources and the remaining Rs. 5 crores through budgetary support. However, due to the substantial payments to be made for the two dredgers to be acquired by D.C.I. during the 6th Plan, the outlay for D.C.I. has been stepped up to Rs. 30 crores. The following important schemes of the Corporation have since been sanctioned:-

| <u>SCHEME</u> | <u>SANCTIONED COST</u>
<u>(Rs. in crores)</u> |
|--|--|
| 1. Acquisition of Hopper Trailer Suction Dredger of 4,500 cum. capacity. | 20.50 |
| 2. Acquisition of Hopper Trailer Suction Dredger of 3,000 cum. capacity | 16.50 |

9.7 The DCI has already procured the dredger of the higher capacity from M/s IHC Simit. B.V. partly under Government to

Government aid programme. Out of the basic price of the dredger amounting to DG 43.9 millions (Rs.15.61 crores), DG 25 millions (Rs. 8.73 crores) was provided as grant assistance. The remaining amount of DG 18.9 million will be repayable in 17 semi-annual instalments from the date of delivery of the dredger (March,1984). The total cost of the dredger inclusive of Customs Duty (if payable) is estimated to be Rs. 29.86 crores.

9.8 The question of procurement of the second dredger of 3000 cum. capacity by the DCI is under consideration. In this regard, keeping in view the present unfulfilled demand gap and also for commercial reasons, there is a proposal also to enhance the capacity of the second dredger to be acquired to 4,500 cu.m. capacity instead of 3,000 cu.m. capacity proposed initially.

9.9 The final Sixth Plan requirements of DCI are as shown in the table below :-

(Rupees in lakhs)

| -0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0- | | | | | |
|---|---|---|--|--|-----|
| SI. Particulars
No. of scheme. | Actual ex-
penditure
upto 31.3.
83(Provl.) | Antici-
pated
expen-
diture
during
1983-84 | Estimated
expendi-
ture
during
1984-85 | Total
VI Plan
Provi-
sion
(Col.3+
4+5). | |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1. Administrative | | | | | |
| Office Building | 29.10 | 55.40 | 5.50 | 90.00 | |
| 2. Portable Cutter | | | | | |
| Suction Dredger | | | | | |
| 400 HP with | | | | | |
| ancillary | | | | | |
| equipment | 26.25 | 118.74 | -- | 145.00 | |

--: 193 :--

| (1) | (2) | (3) | (4) | (5) | (6) |
|--|-----|---------|---------|-----------------------|---------|
| 3. Portable
Dredger-700 HP | -- | 5.00 | 40.00 | 45.00 | |
| 4. Trailer Suction
Dredger 3000M ³
capacity. | -- | 140.00 | 180.00 | 320.00 | |
| 5. Trailer Suction
Dredger 4500 M ³
capacity. | -- | 2030.00 | 39.00 | 2069.00 | |
| 6. Purchase of initial
spares and stores
for Trailer Suction
Dredger 4500M ³
capacity | -- | 328.00 | -- | 328.00 | |
| Total:- | | 55.35 | 2677.14 | 264.50 | 2997.00 |
| | | | | or say Rs. 30 crores) | |

9.10 The performance of the Dredging Corporation of India, ever since its inception in 1976, has been quite satisfactory. It has made profits every year so far. The D.C.I. completed the dredging of 14.34 million cu.m. during the year 1982-83 as compared to 15.67 million cu.m. in 1981-82 and 13.31 million cu.m. in 1980-81. The capacity utilisation of the dredging fleet deployed was 92% in 1982-83 as against 100.86% in 1981-82 and 85.42% in 1980-81. The capacity utilisation during the year 1983-84 was 93.16% and the total quantity of material dredged was 14.44 million cubic metres.

Seventh Plan

9.11 Based on the projections of annual dredging requirement by various major ports, Indian Navy and other customers of the D.C.I., the average annual maintenance dredging requirement to be met by DCI during the Seventh Plan period are

assessed at 260 lakhs cu.m. and the average capital dredging requirements are assessed at 100 lakhs cu.m. per annum. These projected requirements have been adopted for the purpose of planning additional dredgers during the Seventh Plan.

9.12 As against the average projected requirement of 360 lakh cu.m. per annum during the seventh plan, the net capacity at the end of the 7th Plan is expected to be about 352 lakh cu.m. per annum. (Keeping in view the expected decommissioning of MOT Dredge I, II & III due to obsolescence) as indicated below :-

| <u>6TH PLAN PERIOD</u> | <u>In lakh cu.m.
Per annum</u> |
|--|------------------------------------|
| Capacity at the beginning of the 6th Plan. | 155.00 |
| Additions already accrued during 6th Plan. | <u>30.00</u> |
| Total: | 185.00 |
| Derating during the 6th Plan | <u>15.00</u> |
| Net available capacity at the end of the 6th Plan. | <u>170.00</u> |

7TH PLAN PERIOD

Proposed additions during 7th Plan:-

| | |
|------------------------------------|---------------------------|
| Trailer suction dredgers - 4 Nos.* | 200.00 (including dredger |
| /second | included in |
| Outter suction dredger - 1 No. | 15.00 (6th Plan). |
| Total: | <u>385.00</u> |

*One dredger of 3,000 cu.m. capacity envisaged for the 6th Plan is expected to be upgraded to 45,000 cu.m. capacity. This would enhance DCI's capacity by 30 lakh cu.m. per annum instead of 20 lakh cu.m. for 3,000 cu.m. dredger, whereas the order for this dredger is likely to be placed in the 6th Plan period, the dredger would be commissioned for service only during the 7th Plan period.

--: 195 :--

Less capacity expected to be decommissioned:

| | | |
|---|-------|--------|
| Trailer Suction dredger MOT
Dredge-III - 1 No. | 20.00 | |
| Cutter Suction dredgers MOT
Dredge I & II - 2 Nos. | 12.80 | |
| Total capacity decommissioned: | 32.80 | 32.80 |
| Net available capacity at the end of
the 7th Plan | | 352.20 |

Say 352 lakh cubic metres per annum.

9.13 Coastal Dredging Requirements: Keeping in view the projected demand of 360 lakh cu.m. per annum of coastal dredging capacity and also that three dredgers may have to be de-commissioned (of total capacity 32.8 lakh cu.m. per annum), the Corporation proposes the acquisition of 5 high power dredgers with a total capacity of 185 lakh plus 30 lakh cu.m. per annum from 6th Plan (total 215 lakh cu.m.) with an aim to meeting the projected demand to the extent possible at the least cost to its customers. This is expected to be made possible as a small number of large, high power dredgers result in lower unit costs than a larger number of small dredgers. The following Table shows the capacity and cost estimates of the dredgers proposed to be acquired during the 7th Plan. The financing details are provided in Annexure I.

| -0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0- | | | | |
|---|-----------------------------|------------------------|-----------------|-----------------|
| Sl. No. | Type of dredgers | Capacity in lakh cu.m. | Estimated cost. | |
| | | Replace-ment. | New | Total |
| | | | | (Rs. in crores) |
| 1. | 5 Trailer Suction dredgers. | 20(DR-III) | 150 | 170 160.00 |
| 2. | 1 Cutter suction dredger | 12.8 (DR-I & II) | 2.2 15 | 30.00 |

NOTE:- The estimated costs are based on the present

information available with the Corporation. The budgetary quotations/estimates for the same will be called for in due course, and the costs will be suitably updated. The above cost projections have been made assuming the dredgers would be imported and, therefore, include customs duty which may be payable, at present, is about 60% of the cost price.

/which

9.14 Inland Dredging:

At present, inland dredging requirements of various authorities are pending with DCI and the Corporation has been receiving enquiries from various organisations to provide for their inland dredging requirements. Some of the potential clients have indicated their inland dredging requirements amounting to 100 lakh cu.mtrs., which vary from 5 to 60 lakh cu.m. at each site. The various requests received from these authorities are contemplated to be met to the extent possible during 7th Plan. The Inland Dredging is required to be undertaken broadly under three categories-viz. (i) for making the rivers and canals navigable, (ii) deepening/desiltation of reservoirs/dams to restore their original water storing capacities thus enabling the user organisations to utilize their installed capacity fully and (iii) creation of fishing harbours. At present, DCI has only a desiltation plant and a 400 HP portable cutter suction dredger for undertaking inland dredging work, which can only meet the limited requirements of intake channels, small reservoirs, etc. The procurement of a 700 HP Portable Cutter Suction Dredger is also planned during 1984-85. Keeping the varied nature of inland dredging requirements in view, the Corporation has also projected the requirement of medium and small portable dredgers, boats and launches for various

purposes, weed dredgers, backhoes and submersible and booster pumps, the financing details of which are indicated in Annexure I(B) Sl.Nos. 6 to 14.

9.15 Dredger Repair Complex:

A token provision of Rs. 1 crores is made towards the DCI's share of contribution for the establishment of a proposed Dredge Repair Complex, which is under the consideration of Ministry.

The process of dredger repair varies substantially from that of a typical commercial vessel. Due to the severity of working conditions and nature of work, the volume of steel renewal work and other under water repair work in a dredger is considerably more than that of a merchant ship. Consequently, occupancy of dry-dock and wet berth repairs are much more for a dredger.

Over the past few years, DCI has lost on an average about 400 dredging days annually due to delay in the existing repair process. This, in terms of loss of revenue to the Corporation, amounts to about Rs. 4.5 crores per annum.

A Task Force was constituted by the Ministry of Shipping and Transport to go into details for examining the feasibility of creating an exclusive dredger repair organisation, in the joint sector, with participation of DCI. The Task Force has submitted its initial report establishing the need for an exclusive dredge repair organisation which is expected to have an excellent economic

viability. The report has identified a suitable site at Calcutta envisaging an investment of about Rs. 10 crores. The Corporation has accepted the findings of the Task Force.

Pending Government decision regarding the extent of participation by various interests in the proposed joint sector, a token provision of Rs. 1 crore has been proposed in the 7th Plan towards DCI's share of contribution for the establishment of the proposed Dredge Repair Complex.

9.16 R & D :

A beginning is expected to be made in the R & D activities with an acquisition of Survey Equipment at an estimated cost of about Rs. 50/- lakhs for the purpose of conducting studies for improving the productivity of dredgers by undertaking proper surveys and also for carrying out soil samplings.

9.17 Housing:

During the 7th Five Year Plan, about 30% of the personnel are proposed to be provided with suitable residential accommodation. Therefore, D.C.I. proposes to construct staff quarters during the 7th Plan at an estimated cost of Rs. 150/- lakhs.

9.18 Estimated cost and outlay in 7th Plan:

The total cost of the new schemes proposed to be included in the 7th Plan is estimated to be in the order of Rs. 203.90 crores. As the procurement of the crafts is expected to be financed under deferred payment terms to be offered by the suppliers, the estimated outlay of the schemes during the 7th Plan will be Rs. 130 crores as detailed below. The balance

expenditure will spill over to the 8th Plan.

(Rs. in crores).

| | |
|--|---------------|
| (1) Carry forward schemes from 6th Plan (Vide Annexure-IA) | 19.64 |
| (2) New Schemes (vide Annexure-IB) | 110.36 |
| Total: | <u>130.00</u> |

9.19 Financing:

It is expected that Rs. 30.00 crores would be generated internally during the 7th Plan period to meet the outlay on the plan schemes. The balance amount of Rs. 100.00 crores (Rs. 130.00 crores - Rs. 30.00 crores) would have to be partly financed from the loans by the Govt. of India and partly by increasing the equity capital.

The foreign exchange requirements for the investments are also projected at Annexure-IA. Column 7 and Annexure IB Column 5.

Annexure-J

Dredging Corporation of India

A- Continuing Schemes:

| (Rs. in lakhs) | | | | | | |
|----------------|---|---------------------------------------|-----------------|------------------------|-----------------|-----------------------------|
| Sl. No. | Name of Scheme | Sanctioned Cost.
Date of Sanction. | Estimated Cost. | Sixth Plan Expenditure | 7th Plan Outlay | Foreign Exchange component. |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| 1. | Trailer Suction Dredger of 3,000 cu.m. capacity - 1 No. | 1650.00
20.4.82 | 2,100.00 | 320.00 | 1454.00 | 754.00 |
| 2. | Trailer Suction Dredger of 4500 cu.m. capacity - 1 No. | 2050.00
20.4.82 | 2,650.00 | 1616.00* | 390.00 | 390.00 |
| 3. | Portable Cutter Dredger 700 HP- 1 No. | -- | 145.00 | 25.00 | 120.00 | -- |
| Total: A | | | 4,895.00 | 1961.00 | 1964.00 | 1144.00 |

* Customs duty not included.

B - New Schemes:

| Sl. No. | Name of Scheme | Estimated Cost. | 7th Plan Outlay. | Foreign Exchange change into component of 7th Plan. | Spillover into 8th Plan. |
|---------|----------------------------------|-----------------|------------------|---|--------------------------|
| (1) | (2) | (3) | (4) | (5) | (6) |
| 1. | Trailer Suction Dredger - 1 No. | 5000.00 | 2750.00 | 1500.00 | 2250.00 |
| 2. | Trailer Suction Dredger - 1 No. | 5000.00 | 2500.00 | 1500.00 | 2500.00 |
| 3. | Trailer Suction Dredger - 1 No. | 3000.00 | 1725.00 | 698.00 | 1275.00 |
| 4. | Trailer Suction Dredger - 1 No. | 3000.00 | 1111.00 | 360.00 | 1889.00 |
| 5. | Cutter Dredger - 1 No. | 3000.00 | 1560.00 | 360.00 | 1440.00 |
| 6. | Small Portable Dredgers - 2 Nos. | 300.00 | 300.00 | -- | -- |

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|-----|----------|----------|---------|---------|-----|
| 7. Medium Portable
Dredgers -2 Nos. | | 500.00 | 500.00 | -- | -- | -- |
| 8. Work boats -
2 Nos. | | 30.00 | 30.00 | -- | -- | -- |
| 9. Survey Launches -
2 Nos. | | 20.00 | 20.00 | -- | -- | -- |
| 10. House Boats -
2 Nos. | | 20.00 | 20.00 | -- | -- | -- |
| 11. Back Hoe -
2 Nos. | | 80.00 | 80.00 | 48.00 | -- | -- |
| 12. Submersible
Pump - 1 No. | | 10.00 | 10.00 | 6.00 | -- | -- |
| 13. Weed dredger -
1 No. | | 30.00 | 30.00 | 18.00 | -- | -- |
| 14. Boosters -
1 No. | | 100.00 | 100.00 | -- | -- | -- |
| 15. Construction of
staff quarters
at Head Office | | 150.00 | 150.00 | -- | -- | -- |
| 16. R & D Schemes | | 50.00 | 50.00 | 25.00 | -- | -- |
| 17. Dredge Repair
Complex (DRC) | | 100.00 | 100.00 | 70.00 | -- | -- |
| Total 'B' | | 20390.00 | 11036.00 | 4585.00 | 9354.00 | -- |
| Total: A + B : | | | 13000.00 | 5729.00 | -- | -- |

CHAPTER - X

DEVELOPMENT SCHEMES FOR ANDAMAN LAKSHADWEEP HARBOUR
WORKS AND MINOR PORT SURVEY ORGANISATION

PART A

ANDAMAN LAKSHADWEEP HARBOUR WORKS

10.1 The Andaman Lakshadweep Harbour Works is a subordinate Organisation of the Ministry of Shipping and Transport and was set up in 1965 for the survey and Construction of Harbour facilities in A & N Islands and Lakshadweep. The office of the Chief Engineer and Administrator, ALHW was situated at Delhi, so far, who had four circles operating in A & N Islands, one circle in Lakshadweep Island and the Minor Ports Survey Organisation (MPSO) operating from Bombay. Due to increased work load in the A & N Islands, recently the Government decided to shift the office of the Chief Engineer & Administrator from Delhi to Port Blair in May, 1984, and to delink the MPSO from Chief Engineer & Administrator (ALHW) bringing it directly under the control of the Ministry of Shipping and Transport.

10.2 The A & N Islands in the Bay of Bengal form the most isolated part of Indian Union. The Andaman group has a total of 204 Islands and Nicobar Group 19 Islands. The Administrative Head Quarters of these Islands is situated at Port Blair which is 1191 Kms. from Madras and 1255 Kms. from Calcutta by sea.

10.3 The Lakshadweep which form a small group of coral Islands in the Arabian sea lie about 200 to

400 Kms. from Kerala Coast. These Islands are 20 in number. As in the case of A & N Islands, Lakshadweep are another group of backward Islands cut off from mainland, requiring development of communication facilities.

10.4 REVIEW OF 6TH FIVE YEAR PLAN

A sum of Rs. 20 crores was originally sanctioned for 6th Five Year Plan of A.L.W.H. and M.P.S.O. together. The allocation on various schemes was revised during the midterm appraisal in May '82 while reviewing, the progress of various schemes. Once again a review was made in June '83 in view of a major decision taken to shift Chief Engineer and Administrator (ALHW) office from New Delhi to Port Blair and Deputy Chief Engineer, Lakshadweep Harbour Works office from Calicut to Kavaratti. In both these instances, the funds were reallocated keeping the overall allocation of Rs. 20 crores unchanged, as indicated below.

| | (Rs. in Crores) | | |
|--------------------------------|-----------------|-------------|--------------|
| | <u>ALHW</u> | <u>MPSO</u> | <u>TOTAL</u> |
| Originally approved allocation | 17.00 | 3.00 | 20.00 |
| Reviewed in May'82 | 17.79 | 2.21 | 20.00 |
| Reviewed in June'83 | 18.09 | 1.91 | 20.00 |

The following few major schemes taken up during 6th Plan are expected to be completed in the Plan period itself :-

- 1) Dry Dock at Port Blair. Rs. 3.43 crores.

- ii) Wharf on Lee-side of Breakwater at Little Andaman Rs. 0.90 crores.
- iii) Providing Ancillary facilities and handling equipments (stage II) at Haddo Wharf only Rs. 0.51 crores
- iv) Jetties at 3 Islands - East Island, Rutland/Pongibalu and Teressa Island Rs. 0.49 crores
- v) Procurement of dredging equipments. Rs. 0.70 crores

Only two of the major schemes, as follows, taken up during 6th Plan are expected to spill over to 7th Plan.

(AMOUNT IN CRORES)

| | <u>Estimated cost.</u> | <u>Likely Expdr. in 6th Plan</u> | <u>Spillover in 7th Plan.</u> |
|------------------------------------|------------------------|----------------------------------|-------------------------------|
| (i) Breakwater at Campbell Bay | 6.80 | 2.50 | 4.30 |
| (ii) Deepwater Wharf at Port Blair | 2.43 | 1.53 | 0.15 |

The yearwise Plan allocations, expenditures and percentage of expenditures for the 6th Five Year Plan period are indicated below :

| <u>Sixth Five Year Plan</u> | <u>Revised Allocation</u> | <u>Actual Expr. (Amount in crores)</u> | <u>Percentage</u> |
|-----------------------------|---------------------------|--|-------------------|
| 1980-81 | 2.76 | 2.76 | 100 |
| 1981-82 | 3.91 | 3.91 | 100 |
| 1982-83 | 3.78 | 4.01 | 106 |
| 1983-84 | 4.38 | 3.63 | 83 |
| 1984-85 | 3.26 | 1.08 | -- |
| | <u>18.09</u> | (upto 6/84) | |

10.5 SEVENTH FIVE YEAR PLAN

In the 7th Five Year Plan (1985-86 to 1989-90) a provision of Rs. 36.00 Crores is proposed for ALHW as indicated below :-

AMOUNT IN CRORES

| | <u>Continued
Schemes</u> | <u>New
Schemes</u> | <u>Total</u> |
|---------------------------|------------------------------|------------------------|--------------|
| Andaman Harbour Works | 4.50 | 20.30 | 24.80 |
| Lakshadweep Harbour Works | 0.47 | 5.93 | 6.40 |
| Establishment | — | — | 4.80 |
| | Total: | | <u>36.00</u> |

The details of schemes proposed in 7th Plan alongwith the proposed phasing of expenditure are as shown in the Table I..

TABLE - I

SEVENTH FIVE YEAR PLAN (1986-90)

| <u>A.L.H.W.</u> | | <u>(Rs. in lakhs)</u> | |
|----------------------------------|---|-----------------------|------------------------|
| Sl. No. | Name of the Scheme | Estimated cost. | Provision in 7th Plan. |
| 1. | 2. | 3. | 4. |
| <u>A - ANDAMAN HARBOUR WORKS</u> | | | |
| <u>I - Continuing Schemes:</u> | | | |
| 1. | Construction of a Break-water at Campbell Bay in Great Nicobar. | 680 | 430 |
| 2. | Construction of a Deep-water wharf at Hope Town in Port Blair. | 243* | 15 |
| 3. | Construction of CE&A's (ALHW)'s office building and residential accommodation at Port Blair. | 40 | 5 |
| Total A I | | 888 | 450 |
| <u>II - New Schemes:</u> | | | |
| 1. | Construction of a Break-water & Wharf at Mus in Car Nicobar. | 900 | 500 |
| 2. | Construction of a Break-water at Rangat in Middle Andaman. | 300 | 300 |
| 3. | Construction of ferry jetties at 6 new places (Noreondum, Interview, Choura, Kondul, Little Nicobar & Pulomilo Islands) | 82 | 82 |
| 4. | Conducting Surveys and Investigations in 10 new islands. | 35 | 35 |

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-

1. 2. 3. 4.

- | | | |
|---|-----|-----|
| 5. Additional Ancillary and Foreshore facilities at jetties (stage II) (Chatham Wharf, Mayabunder, Kamorta, and Campbell Bay jetties. | 150 | 150 |
| 6. Construction of a 150M. length deepwater wharf at Port Blair Harbour. | 400 | 400 |
| 7. Construction of a Deepwater Wharf & Dredging at Campbell Bay Harbour. | 400 | 40 |
| 8. Construction of Deepwater wharf at Little Andaman (Stage II) harbour. | 180 | 180 |
| 9. Shore Protection works at Little Andaman harbour (Stage II) | 3 | 3 |
| 10. Construction of Artisan quarters for permanent work-charged employees at Port Blair. | 70 | 70 |
| 11. Construction of slipways at Maya bunder & Kamorta islands. | 300 | 40 |
| 12. Providing Cargo handling equipments at Ports (Stage II) | 180 | 180 |
| 13. Providing Ancillary & foreshore facilities to jetties constructed in 6th Plan & proposed in 7th Plan (10 places) | 50 | 50 |

| | | |
|------------|------|------|
| Total A II | 3050 | 2000 |
|------------|------|------|

| | | |
|-----------------------|------|------|
| Total A.H.W. (AI+AII) | 3938 | 2480 |
|-----------------------|------|------|

B - LAKSHADWEEP WORKS

| Sl. No. | Name of the Scheme | Estimated cost | Provision in 7th Plan |
|---------|--------------------|----------------|-----------------------|
| 1 | ... | ... | ... |
| 2 | ... | ... | ... |
| 3 | ... | ... | ... |
| 4 | ... | ... | ... |
| 5 | ... | ... | ... |
| 6 | ... | ... | ... |
| 7 | ... | ... | ... |
| 8 | ... | ... | ... |
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| 96 | ... | ... | ... |
| 97 | ... | ... | ... |
| 98 | ... | ... | ... |
| 99 | ... | ... | ... |
| 100 | ... | ... | ... |

I. Continuing Schemes:

| | | | |
|------------|--|--------|----|
| 1. | Construction of residential quarters for operation and constructional staff in Lakshadweep | 16.86 | 4 |
| 2. | Construction of jetty at Minicoy island(Stage II) | 23.82 | 7 |
| 3. | Construction of DCE(LHW)'s office and quarters at Kavaratti island | 31.27 | 5 |
| 4. | Development of Workshop facilities including Tools and plants at three islands. | 24.87 | 16 |
| 5. | Improvement to the existing jetty and extension with RCC decking at Amini island | 23.24 | 15 |
| Total: B I | | 120.06 | 47 |

II. New Schemes:

| | | | |
|----|---|-------|-----|
| 1. | Providing fire-fighting facilities at various jetties. | 15.00 | 15 |
| 2. | Construction of Breakwaters for protection of harbour at Androth island. | 170 | 170 |
| 3. | Clearing Kunhaliyar entrance or clearing Chakrakada Aru at Southern side of Androth island. | 15 | 15 |
| 4. | Dredging from turning circle to Government boat building yard at Chetlat island. | 10 | 10 |
| 5. | Construction of Katchernj jetty at Kavaratti. | 90 | 90 |

-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-
 (1) (2) (3) (4)

| | | | |
|-----|---|----|----|
| 6. | Shore protection from fisheries jetty to the end of boat building yard at Kavaratti island. | 20 | 20 |
| 7. | Additional navigational facilities at Minicoy (Construction of trestle at Eastern side of landing. | 6 | 6 |
| 8. | Installation of entrance lights at Nerumagu, Kadumagu & Selumagu of Minicoy island. | 5 | 5 |
| 9. | Development of Madina side entrance at Minicoy island | 10 | 10 |
| 10. | Development and deepening of Eastern side entrance at Kalpeni island for embarkation and dis-embarkation. | 10 | 10 |
| 11. | Construction of slipway at Kadamat, Kiltan & Chetlat islands. | 30 | 30 |
| 12. | Development and deepening of eastern side entrance & embarkation and disembarkation at Kadamat. | 5 | 5 |
| 13. | Replacement of old dredging units | | |
| | (a) 1.5 cum-Grate dredger 1 No. | 40 | 40 |
| | (b) 20M. Tug-cum-launches - 2 Nos. | 45 | 45 |
| | (c) 20T. capacity Hooper Barges - 8 Nos. | 35 | 35 |
| | (d) 10 M. Pable boats - 2 Nos. | 4 | 4 |
| 14. | Replacement of old office vehicles. | 3 | 3 |

| | | |
|--|---------|------|
| 15. Development of workshop facilities at another three Islands. | 40 | 40 |
| 16. Improvement to the existing jetty at Kadamat island & extension with RCC decking | 20 | 20 |
| 17. Improvement to the existing jetty at Kilton island and extension with RCC decking. | 20 | 20 |
| Total: B II | 593 | 593 |
| Total LHW(BI+BII) | 713.06 | 640 |
| Grand Total: ALHW(A+B) | 4651.06 | 3120 |
| Establishment | | 480 |
| | | 3600 |

10.6 Justifications for the schemes proposed in 7th Plan for Andaman Harbour Works. The following major schemes which were originally included in the 6th Plan but could not be taken up, are proposed to be taken up in 7th Plan on priority -

1) Construction of breakwater and wharf at Mus in Car Nicobar (Rs. 9 crores). In view of the persistent demands from local public for providing a permanent all time harbour, a breakwater with wharf at Mus point in Sawai Bay is proposed to cater for inter-islands ships throughout the year to begin with.

2) Construction of breakwater at Rangat in Middle Andaman (Rs. 3 crores). To protect the existing jetty during the rough weather and to utilise it through out the year, a breakwater is proposed to be constructed at Rangat. The Estimates Committee of Parliament has also stressed the need to take up this scheme immediately.

3) Construction of ferry jetties at 6 new places (Rs. 0.82 crores). Jetties at Narcondum, Interview, Chowra, Kondul, Little Nicobar and Pulomilo islands are proposed to be constructed for inter-islands vessels.

4) Additional Ancillary and foreshore facilities at Jetties - Stage II (Rs.1.50 crores). In view to utilise the harbour facilities created to full extent, ancillary and handling facilities at Mayabunder, Kamorta and Campbell Bay.

The following major schemes are proposed as new schemes in the 7th Plan.

5) Construction of deep water wharf at Port Blair (Rs. 4 crores). The present Haddo wharf is proposed to be extended by 150 M. to cope up with the increased cargo and passenger traffic.

6) Construction of deepwater wharf and dredging at Campbell Bay Harbour (Rs. 4 crores). To meet the increased needs of the Deptt. of Forest & Fisheries and Ministry of Defence, a wharf of 180 M length with dredging upto (-) 8 M is proposed.

7) Construction of deepwater wharf at Little Andaman Stage II (Rs. 1.80 crores). The 2nd stage of 75 M. long deepwater wharf is proposed to complete the scheme as a whole.

8) Construction of artisan quarters for permanent work-charged staff at Port Blair (Rs. 0.70 crores). Residential accommodation is proposed to be constructed for permanent work-charged staff at Port Blair.

9) Construction of Slipway at Mayabunder and Kamorta (Rs. 3 crores). One Slipway each in Andaman Group and Southern group of island is proposed to provide repair facilities for the crafts.

10) Providing Cargo handling equipments at Ports Stage II (Rs. 1.80 crores). Cargo handling facilities at Haddo and Chatham wharves at Port Blair and at jetties in Little Andaman is proposed to be strengthened and

similar facilities are proposed at some other islands also.

ii) Ancillary & Foreshore facilities to jetties (Rs. 0.50 crores). Passenger & Cargo sheds are proposed to be constructed at 10 sites where jetties are constructed or are proposed to be constructed.

10.7 Justifications for the schemes proposed in 7th Plan for Lakshadweep Harbour Works.

1) Construction of breakwater at Androth (Rs. 1.70 crores). Though this scheme was included in the 6th Plan, the estimate could be not submitted for want of model studies. Now this scheme is proposed to be taken up on priority basis to protect the existing jetty during rough season and to utilise the jetty throughout the year.

2) Construction of Katchery jetty at Kavaratti (Rs. 0.90 crores). The existing public jetty is in a dilapidated state and hence there is an immediate need to construct a new good jetty at this Head Quarter of Lakshadweep Administration to cater for the General Cargo & Passenger traffic.

3) Replacement of old dredging units (Rs. 1.24 crores). Most of the dredging equipments purchased during 1971-72 are beyond economical repairs and these are proposed to be replaced by 2 numbers Tug-cum-Launches, 4 numbers hopper barges, 4 numbers 50 Tons capacity dumb barges and 2 numbers cable boats, so that the dredging at different islands can be effectively carried out.

CHAPTER - X

PART B

MINOR PORT SURVEY ORGANISATION

10.9 Minor Ports Survey Organisation was created in 1962 for carrying out the hydrographic surveys of the Minor Ports of India. In 1968, the Minor Ports Survey Organisation was attached to Chief Engineer and Admnr. (ALHW). However, in view of shifting of the office of CE & A (ALHW) from New Delhi to Port Blair, Govt. of India has decided to delink this Organisation from A.L.H.W. and it will function directly under Dy. Development Adviser (Ports) w.e.f. 1.4.84.

10.10 The yearly programme of work to be carried out by the Organisation is chalked out and approved by the Hydrographic Survey Committee of the National Harbour Board. The programme as well as works carried out by this Organisation are annually reviewed by the Committee. The Organisation has been designed to work on 'No Profit No Loss' basis and the charges for the survey undertaken are levied and recovered from the State Govt. concerned on whose behalf the surveys are undertaken. So far the Minor Ports Survey Organisation has carried out about 130 hydrographic surveys in different parts of the country. At present this Organisation is carrying out hydrographic surveys required for construction and expansion of Major Ports, National Projects, Inland Water Ways, Surveys of rivers for Navigational and Flood Control, Coastal erosion etc. and general Navigational surveys of harbours and approaches including A & N Islands.

10.11 REVIEW OF SIXTH FIVE YEAR PLAN:

Out of Rs. 20 crores allotted to A.L.H.W. and M.P.S.O. together during 6th Plan, an amount of Rs.2.99

crores was originally allotted to M.P.S.O. Subsequently the allocation was modified to Rs. 2.21 crores during the mid-term appraisal in May '82 and once again to Rs. 1.91 crores in June '83 while reviewing the physical and financial progress of various schemes.

Except the following 2 schemes, all other schemes are expected to be completed during the 6th Plan period itself.

1. Replacement of existing two small survey launches.
2. Replacement of existing survey instruments.

The yearwise plan allocations, expenditure and percentage of expenditures for the 6th Five Year Plan period are indicated below -

| (Amount in crores) | | | |
|----------------------|--------------------|--------------------|------------|
| Sixth Five Year Plan | Revised Allocation | Actual expenditure | Percentage |
| 1980-81 | 0.37 | 0.37 | 100 |
| 1981-82 | 0.10 | 0.10 | 100 |
| 1982-83 | 0.23 | 0.23 | 100 |
| 1983-84 | 0.47 | 0.38 | 81 |
| 1984-85 | 0.74 | -- | -- |
| | <u>1.91</u> | | |

10.12 SEVENTH FIVE YEAR PLAN

In the 7th Five Year Plan (1985-86 to 1989-90) a provision of Rs. 5.00 crores is proposed with 0.46 crores for continuing Schemes and Rs. 4.54 crores for new schemes.

The details of schemes proposed in 7th Plan alongwith the proposed phasing of expenditure are as shown in the Table-II.

10.13 Justification for the Schemes proposed in VIIth Plan for MPSO

The following major schemes are proposed as new schemes in 7th Plan:

i) Replacement of existing four small Survey Launches (Rs. 140 lakhs). Out of total 6 small survey launches purchased by this Deptt. during 1962, action for replacement of 2 launches has already been taken up in 6th Plan and the balance 4 Nos. launches also need to be replaced as they have already given service of more than 20 years. Each pair of small launches is proposed to be replaced by a 10.7 m long wooden hull and a 23.2 m long steel hull launch and the entire scheme is proposed to be completed in 7th plan period.

ii) Replacement of existing Survey instruments, Stage II (Rs. 175 lakhs). As per the Expert Committee's report almost all the survey instruments of MPSO purchased during 1962 require replacement as these were found beyond economical repair due to natural wear and tear. In stage I, Rs. 30 lakhs was provided for this scheme in the 6th plan and the stage I scheme is almost completed. Now a scheme is proposed as IIInd stage for replacement of the balance survey instruments and the full amount of Rs. 175 lakhs is proposed to be spent in 7th Plan.

iii) Expansion of Minor Ports Survey Organisation (Rs. 205 lakhs). A sub group of the Hydrographic Sub-Committee of the National Harbour Board was constituted by the G.O.I. to study and recommend measures for expansion of MPSO and its deliberations are in progress.

The chairman of this subgroup in the meeting of Hydrographic Sub-Committee of National Harbour Board held in New Delhi on 30-10-82 has expressed the necessity of strengthening the Organisation. Hence it is proposed to include this scheme in 7th Plan. A provision of Rs. 129 lakhs only is proposed in 7th Plan and the balance is proposed to be spill over to next plan.

The details of schemes proposed in 7th Plan alongwith the proposed phasing of expenditure are as shown in Table - II.

TABLE - II

M. P. S. O.

(Rs. in lakhs)

| Sl. No. | Name of the Scheme | Estimated cost | Provisioned cost in 7th Plan. |
|-------------------------------|---|----------------|-------------------------------|
| 1. | 2. | 3. | 4. |
| A. CONTINUING SCHEMES: | | | |
| 1. | Replacement of existing 2 small survey launches | 53.00 | 33.00 |
| 2. | Replacement of existing survey instruments (Stage I) | 38.00 | 13.00 |
| Total A | | 91.00 | 46.00 |
| B. NEW SCHEMES: | | | |
| 1. | Replacement of existing 4 small survey launches | 140.00 | 140.00 |
| 2. | Replacement of balance existing transport vehicles. | 10.00 | 10.00 |
| | 1 Truck -- 3,00,000/- | | |
| | 1 Jeep -- 1,50,000/- | | |
| | 1 Surf boat- 50,000/- | | |
| | 1 Mini Bus -- 2,00,000/- | | |
| | 1 Staff Car --2,00,000/- | | |
| | 4 Trailer -- 1,00,000/- | | |
| | Rs. 10,00,000/- | | |
| 3. | Replacement of existing survey instruments (Stage II) | 175.00 | 175.00 |
| 4. | Expansion of Minor Ports Survey Organisation. | 205.00 | 129.00 |
| | 1 Steel launch - 50,00,000/- | | |
| | 1 Wooden launch - 10,00,000/- | | |
| | 1 No. Truck - 3,00,000/- | | |
| | 1 No. Jeep - 1,50,000/- | | |
| | 2 Nos. Surf boats- 1,00,000/- | | |
| | Survey instruments L.S.1,35,000/- | | |
| | Small office East Coasts - 4,50,000/- | | |
| | Rs. 205,00,000/- | | |
| Total: B | | 434.00 | |
| Grand Total (A+B):MPSO | | 500.00 | |

CHAPTER - XI

DEVELOPMENT OF MINOR PORTS

11.1 There are about 139 minor/intermediate ports in the country. The development of these ports is the responsibility of the respective maritime states. These minor ports handle various types of cargoes like tiles, building materials, fishery products, foodgrains, fertilizers etc. The total traffic handled at these ports during 1981-82 was 6.8 million tonnes compared to 7.7 million tonnes handled a decade ago. Thus virtually there was no growth in the traffic. The factors responsible for this declining trend are (a) technical difficulties/shortcomings connected with the minor ports (b) technological changes in shipping and cargo handling and (c) shortfall and shortcomings in coastal shipping.

11.2 In 1968, the National Development Council decided that the Central loan assistance would be given to selected and well defined schemes relating to the developments of minor ports. Accordingly, one port in each maritime state was proposed to be developed for which loan assistance was extended by the Central Government as part of Centrally sponsored scheme.

11.3 During the 5th Plan, the system of grant of Central loan assistance to the States for minor ports was discontinued limiting such assistance only to spill over expenditure from the 4th Plan. The decision to discontinue the loan assistance was taken in the light of recommendations of the National Development Council with a view to reducing the number

of Centrally sponsored schemes and to transfer the funds thus released to the States in accordance with a formula.

11.4 As a consequence, funds for developing minor ports are now provided in the plans of the respective maritime States. It is for the States to formulate the development schemes relating to minor ports as per their priority.

11.5 The Working Group on Ports for the 6th Plan (1980-85) had recommended that the Central assistance for development of selected minor ports be restored. But the National Development Council in 1980 did not agree to the Working Group's recommendation.

11.6 In the National Harbour Board meeting held on 3-10-1983 at Madras, representatives from various maritime state Governments made a strong plea for the development of minor ports under the centrally sponsored schemes. They also expressed their financial difficulties in the allocation of funds for the development of these ports. Repeated requests are being made by the Maritime State Governments for development of certain intermediate/minor ports under central assistance.

11.7 In its 32nd Report, the Estimates Committee of the Seventh Lok Sabha recommended that Government should review the earlier system of financial assistance to the States for developing minor ports and revive the system of giving loans to States to develop

minor ports like Porbander, Pondicherry and Cuddalore, etc. so that they can take more traffic and thus help relieve pressure on the major ports and can also be used for diverting traffic from nearby major ports in times of congestion. The matter was examined in consultation with the Planning Commission but the Planning Commission did not agree and pointed out difficulties in accepting the suggestion. The Estimates Committee (Seventh Lok Sabha) reiterated its recommendation again in its 41st Report, after studying the reply of the Government furnished in consultation with the Planning Commission. The Committee's recommendation is reproduced below:-

"The Committee note that in pursuance of their recommendation the question of revival of the Scheme of giving Central assistance to the States for development of minor ports in the interest of progressively relieving the major ports of growing traffic has been re-examined by the Planning Commission and according to them "reintroduction of centrally sponsored scheme for minor ports is not considered necessary at this stage". The Committee also note the views of the Planning Commission that the minor ports schemes which are justified on techno-economic considerations are not expected to be starved of funds for their development in the absence of specific central loan assistance for minor ports in the Sixth Plan. However, in view of the complementarity of the minor and major

ports and the need to relieve the major ports of needless congestion, the Committee wish to stress that if the required degree of development of minor ports is not achieved under the existing arrangement in the Sixth Plan the centrally sponsored scheme should be revived during the Seventh Five Year Plan."

The following reply was given to the Estimates Committee after consulting the Planning Commission:-

"It is proposed to place the matter before the Working Group for formulating Seventh Plan for Ports Sector, which has been set up already with Transport Secretary as its Chairman and representatives of port user Ministries as Members. After consideration of the matter by the Working Group, the matter will be considered by the Planning Commission and would require to be placed before the National Development Council before a final decision is taken."

In the light of the above, it is submitted that it will not be possible for the Ministry to take a final view on the above recommendations of the Estimate Committee within the prescribed period of 6 months from 15 April 1983 (when the Report was placed on the Table of the Lok Sabha) that is by 14 October, 1983. However, efforts

will be made to expedite a final decision on the recommendation. The Estimates Committee would be informed in due course of the decision in the matter."

11.8 With the growing trend in shipping technology demanding deeper drafts and modern handling facilities particularly in bulk cargo, it may be necessary to develop intermediate/minor ports to handle break bulk cargo and coastal shipping to a greater extent leaving the major ports to cater to larger and more sophisticated vessels which need faster turn round at the ports. Considering the long coast line and huge land area to be served, mere concentrating^{on} the development of major ports may not be a complete solution unless intermediate/minor ports are also developed as a complement to the major ports. This calls for an integrated approach in planning port facilities for the country as a whole.

11.9 Considering the resource constraints faced by the Maritime State Govts. the Working Group recommends that the central assistance be made available for development of intermediate/minor ports on a selective basis so that these ports could play a complementary role to major ports wherever it is considered to be a better economic alternative. Accordingly it is recommended that a provision of Rs. 100 crores be made in the Seventh Plan.

11.10 The Sub-group constituted by the Working Group, vide para 8 of Introductory, would identify minor/intermediate ports to be developed under central assistance during the Seventh Plan. The Sub-group will keep in view, the suggestions made by the Planning Commission in this regard while identifying such ports for development.

