

6 Port Facilities

1. GENERAL

1.1 Growth

Port provides an interface between ocean transport and land-based transport. India has a long coastline of about 7,517 km spread on the western and eastern shelves of the mainland and also along the islands. It is an important natural resource for country's trade. India has 12 major ports and 200 non-major ports. Approximately 95% of India's trade by volume and 70% by value move through Maritime Transport. India is among the 20 leading merchant fleets all over the world. The Gross Tonnage (GT) under Indian flag was 9.04 million GT and 15.02 million DWT as on 31.12.2007. Present level of India's share in global merchandise trade is about 0.80%. All major ports in the country are at present having both rail and road connectivity.

A total of 24 million tpy additional capacity of ports was achieved in 2007-08 with completion of following projects:

- a. Construction of berth No. 13 at Haldia Dock complex (1 million tpy)
- b. Construction of berth No. 2 at Haldia Dock complex (2 million tpy)
- c. SPM of KRL at Cochin Port (6 million tpy)
- d. SPM of IOCL at Paradip Port (15 million tpy)

The available depth of entry channel in port is not sufficient for large size new generation vessels. This leads to increased transportation costs for Indian Trade. Deepening of Navigation Channel at Cochin Port and phase-I of Kandla Port has been completed. Stage-I of the inner harbour Deepening Projects at Visakhapatnam port has been nearly completed. Deepening projects at JNPT, Mumbai, Ennore, Tuticorin and Paradip are in progress. Dredging work at Ennore has been started.

Status of important ongoing schemes of major ports and ALHW as on 31.12.2008 is given in Table-1.

1.2 National Maritime Development Programme (NMDP)

NMDP has been formulated for future traffic projections and to bring up the levels of performance in the maritime sector to International benchmark. In port sector, 276 projects were identified for implementation by 2011-12 which is terminal year of Eleventh Five Year Plan, by investing Rs.55,804 crore. Out of these, Rs. 34,505 crore is expected from Private Sector, Rs. 3,609 crore from budgetary support, Rs. 13,772 crore from internal resources of major ports and remaining from other sources. The objective is to upgrade and modernise the port infrastructure in India and benchmark its performance against global standards.

1.3 Sethusamudram Ship Channel Project

The Sethusamudram ship channel project envisages cutting of a channel to connect the Gulf of Mannar and Bay of Bengal through Palk Strait and Palk Bay so that ships moving between east and west coast of India could have a continuous navigable sea route within India's own territorial waters. The project leads to saving of 424 nautical miles and 29.9 hours time. The project gives a boost to coastal movements of cargo. A Special Purpose Vehicle (SPV) by name "Sethusamudram Corporation Ltd" was incorporated on 6th December 2004 to raise the finance and implement the project. The total project cost of Rs. 2,427.40 crore has been approved. The total length of channel is 167 km and dredging is required in 89 km stretch involving 82.5 million cu m. Government has formed a Committee to consider suggestions/ proposals in view of orders of Hon'ble Supreme Court of India.

PORT FACILITIES

Table – 1 : Status of Important Ongoing Schemes of Major Ports and ALHW* As on 31.12.2008

| Sl Port No. | Name of Scheme | Date of Completion Actual/Anticipated | Expenditure till September 2007 (In Rs. Crores) |
|------------------------------|--|---------------------------------------|--|
| A. East Coast Schemes | | | |
| 1. Haldia | Construction of Berth No.2 | March 2009 | 36.11 |
| 2. Haldia | Construction of Berth No.13 | March 2009 | 27.34 |
| 3. Paradip | Deepning of Channel | June 2009 | 45.59 |
| 4. Visakhapatnam | Deepning and widening of inner harbour entrance channel and turning circle to cater 11 M drift vessel. | March 2009 | 19.14 |
| 5. Chennai | Modernization of Jawahar Dock berths | March 2009 | 23.32 |
| 6. Ennore | Capital Dredging | January 2008 | 25.32 |
| 7. Chennai | Ennore-Manali Express Way improvement. | December 2008 | 23.26 |
| 8. Tuticorin | Construction of Berth No. 9 | March 2009 | 29.17 |
| 9. Tuticorin | Dredging of dock basin and channel to cater to 12.5 m draft vessels. | -- | -- |
| B. West Coast Schemes | | | |
| 10. Cochin | Rail connectivity to ICCT | March 2009 | 145.48 |
| 11. Cochin | reconstruction and revamping of NCB | -- | 20.18 |
| 12. Mormugao | Construction of 4 lane road from port to Verna junction on NH-17. | -- | 17.02 |
| 13. Cochin | Reconstruction of Mattencherry wharf. | May 2009 | 28.32 |
| 14. Mumbai | Deepening and widening of Mumbai Harbour & J.N. Port Channel. | -- | 2.78 |
| 15. Kandla | Additional facilities for handling crude oil at vadinar. | -- | 17.41 |
| C. A.L.H.W. Schemes | | | |
| 16. Port Blair | Development of Junglighat harbour in Port Blair . Phase-I | October 2008 | 17.24 |
| 17. Lakshadweep | Providing eastern side embarkation facilities at Minicoy in Lakshadweep. | December 2008 | 15.97 |
| 18. Lakshadweep | Providing eastern side embarkation facilities at Amini in Lakshadweep. | December 2008 | 17.53 |
| 19. Lakshadweep | Providing eastern side embarkation facilities at Kavarati in Lakshdweep. | March 2009 | 14.45 |
| 20. Great Nicobar (ALHW) | Construction of deep wharf at Campbell Bay. | -- | 18.14 |
| 21. Lakshadweep | Providing eastern side embarkation facilities at Agathi. | March 2009 | 15.44 |
| D. Mechanical Schemes | | | |
| 22. Paradeep | Procurement of 1 No. of 45 T B.P. Tug. | -- | -- |
| 23. Chennai | Installation of semi-mechanised coal handling system at Jawahar Dock (east). | January 2009 | 21.43 |
| 24. Chennai | Procurement of 15 T 4 rope grabbing crane 7 nos. | November 2007 | 46.88 |
| 25. Cochin | Procurement of 2 nos. 45 T capacity BP Tug | March 2009 | 46.68 |
| 26. Murgugao | Replacement of 3 nos. of rail mounted stackers. | -- | -- |
| 27. New Mangalore | Replacement of Tug | -- | 3.42 |
| 28. Mumbai | Procurement of 3 nos. of 10 T capacity ELL wharf crane. | April 2009 | -- |
| 29. Mumbai | Replacement of 2 harbour tug with 12.5 T B.P. harbour tug. | January 2009 | 10.15 |
| 30. Lakshadweep Island | Procurement of cutter section dredger for dredging work | -- | 1.18 |

* ALHW - Andaman Lakshdweep Harbour Works

1.4 Private Sector Participation in Major Ports.

A concerted effort is being made to attract private sector participation in the development of Major Ports.

- (a) A Container Terminal of Kandla Port (Rs. 155 crore) on BOT agreement has commenced operation.
- (b) Work is in progress in development of second Container Terminal (Rs. 495 crore) at Chennai Port Trust.
- (c) Concession Agreement for development of three new terminals for POL products (Rs. 200 crore), coal (Rs. 350 crore) and iron ore (Rs. 500 crore) has been signed at Ennore Port Ltd.
- (d) Bidding is in progress for various PPP projects at Paradip, Visakhapatnam, Kandla, Tuticorin, Ennore and New Mangalore Ports.

1.5 New Deep Sea Ports

Keeping in view of increasing trade with South East Asian and East Asian regions, it has been decided to conduct location and feasibility study for setting up a deep sea port off the coast of West Bengal and for development of port at Colachel in Tamil Nadu.

2. MAJOR PORTS

There were twelve major ports in the country; viz, Kolkata-Haldia, Paradip, Visakhapatnam, Chennai, Ennore and Tuticorin on the East Coast and Cochin (Kochi), New Mangalore, Mormugao, Jawaharlal Nehru, Mumbai and Kandla on the West Coast. Of these, Paradip, Visakhapatnam, Chennai, New Mangalore and Mormugao ports were the five leading iron ore handling ports having mechanical ore handling system. Kandla being the top traffic handler during 2007-08. Except Ennore Port being Public Sector Undertaking, all the major ports are administered by Port Trusts which are autonomous bodies.

2.1 Cargo Handling Capacity and Cargo Handled

The aggregate capacity of major ports as on 31.3.2007 was 504.75 million tonnes per annum (MTPA). The aggregate capacity increased by 48.55 MTPA from 456.20 million tonnes as on 31.3.2006. The commoditywise capacity and facilities available as on 31.3.2008 are furnished below. These comprise 235 berths, 2 anchorages, 4 single buoy moorings, one transshipper and 2 Barge Jetties.

Commoditywise Total Capacity of Major Ports (as on 31.3.2008)

| Sl. No. | Commodity | Total (In Million tonnes) |
|---------|-------------------------|--|
| 1. | P.O.L. | 184.41 + 4.4(40)+4 SBM + 2BJ +A |
| 2. | Iron ore | 62.80 (7) + T |
| 3. | Thermal coal | 46.25 (8) |
| 4. | Fertilizer | 9.10 (4) |
| 5. | Gen.Break Bulk Cargo | 137.01 + 7.0 (147) + A |
| 6. | Containers | 92.50 (29) (in lakh TEU's 77.08) |
| | Total | 532.07+11.40 (235) + 4 SBM+T +2 BJ +A |

*Note : Figures in parentheses indicate number of berths.
T - Transshippers;BJ - Barge Jetties; A - Anchorage.
SBM - Single Buoy Mooring.*

The cargo handling at Indian Ports has increased from a level of 19.38 million tonnes (major ports) in 1950-51 to around 649.38 million tonnes (major and non-major ports) by 2006-07.

The major ports handled a total traffic of 463.78 million tonnes during 2006-07 and 519.16 million tonnes during 2007-08. It was 185.54 million tonnes at non-major ports during 2007-08. Traffic handled by major ports during 2006-07 and 2007-08 is as below:

PORT FACILITIES

(In '000' tonnes)

| Sl. No. | Ports | 2006-07 | 2007-08 |
|--------------|------------------|---------------|---------------|
| 1. | Kandla | 52982 | 64893 |
| 2. | Visakhapatnam | 56385 | 64597 |
| 3. | a. Kolkata | 12596 | 13741 |
| | b. Haldia | 42454 | 43541 |
| 4. | Chennai | 53414 | 57154 |
| 5. | Mumbai | 52364 | 57039 |
| 6. | Jawaharlal Nehru | 44815 | 55756 |
| 7. | Paradip | 38517 | 42438 |
| 8. | New Mangalore | 32042 | 36019 |
| 9. | Mormugao | 34241 | 35128 |
| 10. | Tuticorin | 18001 | 21480 |
| 11. | Cochin | 15257 | 15810 |
| 12. | Ennore | 10714 | 11563 |
| Total | | 463782 | 519159 |

The commoditywise traffic handled at twelve major ports during April-December 2007 and 2008 is as below :

(In '000 tonnes)

| Sl. No. | Commodity | April-December 2007 | April-December 2008 |
|--------------|--------------------|---------------------|---------------------|
| 1. | P.O.L. | 123903 | 128572 |
| 2. | Iron ore | 64015 | 63619 |
| 3. | Fertilizer (Final) | 8240 | 11457 |
| 4. | Fertilizer (Raw) | 4745 | 4682 |
| 5. | Coal Thermal | 29278 | 30588 |
| 6. | Coal coking | 19284 | 23479 |
| 7. | Container Tonnage | 66551 | 70824 |
| 8. | Container TEU | 4891 | 5140 |
| 9. | Other | 62804 | 58583 |
| Total | | 378820 | 391804 |

3. PORTWISE REVIEW OF MAJOR PORTS

EAST COAST

3.1 Kolkata - Haldia

Kolkata Port is the oldest (established in 1870) and the only riverine major port in India. The port was catering to the entire Eastern India and two land locked neighbouring countries, Nepal and Bhutan. Kolkata Port Trust (KPT) has twin dock system, viz. Kolkata Dock System (KDS) on

Eastern bank of river Hoogly and Haldia Dock Complex (HDC) started in 1971 on the Western bank of the river Hoogly.

In 2007-08, the total cargo traffic handled was 57.28 million tonnes which is all time high. Port at Kolkata stands at third position amongst the major ports of India. The break up of traffic handled is as under:

Kolkata: 13.74 million tonnes, and

Haldia: 43.54 million tonnes.

Handling capacity of the port in 2007-08 is as below:

Kolkata: 17.89 million tonnes, Haldia 43.52 million tonnes. The largest size of the empty vessel that can be received at the Kolkata Port is 484,276 dwt and at Haldia Dock Complex, it is 90,000 dwt.

Salient Features of Kolkata - Haldia Port

| Port | Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|---------|-----------|-----|---------------|-----------------|---------------|-------------------------------|
| | min | max | | | | |
| Kolkata | 5.1 | 9.0 | 34 | 24 | 4 | 154516 |
| Haldia | 6.3 | 8.5 | 14** | - | - | - |

** Including three oil jetties.

Development Project is as below:

1. Haldia Berth No. 2 and Berth No. 13 have been commissioned.
2. Construction of two riverine Jetties outside of impounded docks started.
3. Improvement of infrastructural facility at Kolkata Port is in completion stage.
4. Construction of three riverine jetties at Diamond Harbour planned.
5. Two Rail Mounted Quay Cranes (RMQC) for improved container handling capacity at HDC started.

Both Kolkata Dock System and Haldia Dock Complex of Kolkata Port have been awarded ISO-9001:2000 certification. The port is also ISPS compliant. For promotion of Inland Water Traffic and River Tourism, New Inland Water Transport Terminal (IWT) and renovation of port-owned riverside Jetties are underway.

PORT FACILITIES

The traffic in mineral/ore/mineral based commodities handled in 2006-07 and 2007-08 was as under :

(In '000 tonnes)

| Commodity | Exports | | Imports | |
|--------------------|---------|---------|---------|---------|
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Pig iron | 6 | - | - | - |
| Salt | - | - | 5 | - |
| Thermal coal | 2443 | 1797 | - | - |
| Coking coal | - | - | 5439 | 5476 |
| Iron ore | 8539 | 10338 | - | - |
| Rock phosphate | - | - | 260 | 279 |
| Sulphur | - | - | 134 | 99 |
| Mica | 69 | 77 | - | - |
| Metallurgical coke | - | - | 1048 | 943 |
| Limestone | - | - | 446 | 495 |
| Petroleum coke | - | - | 71 | 39 |
| Chrome ore | 1 | 6 | - | - |
| Ferro-chrome | 96 | 143 | - | - |
| Non-coking coal | - | - | 834 | 1011 |
| Manganese ore | 19 | - | 185 | 228 |
| Carbon black | - | 5 | - | - |
| Silicon | - | 13 | - | - |

Port charges

Wharfage charges levied by the Kolkata Port Trust presently in force are as follows:

(Rs. per tonne)

| Sl. No. | Item | Rate |
|---------|---|-------|
| 1. | Iron & Steel | 54 |
| 2. | Limestone, pig iron, sponge iron, other ferrous metals, coal/coke/ore/other dry cargo not specified. | 36 |
| 3. | Iron ore | 36 |
| 4. | Thermal Coal | 40.50 |
| 5. | Other coals, fertilizer, fertilizer raw materials, soda ash, etc. | 81 |
| 6. | Sand | 18 |
| 7. | Rock phosphate, magnesite, granite, fire bricks and other refractory materials, mica, non-ferrous metals, sulphur, other fertilizer raw materials, fertilizers, lead conc., asbestos. | 63 |
| 8. | Salt, fly ash | 18 |

Note : Wharfage covers any one or combination of more than one of the following:

- i) unhooking/hooking on quay;
- ii) transporting cargo between hook point and stacking point;
- iii) one operation of restacking;
- iv) weight measurement/taken by Kolkata Port Trust (KPT) for correct assessment of charges;
- v) loading/unloading/ex-vehicle/wagon for delivery/receiving; and
- vi) discharging/loading/transfer through pipeline.

Besides, port dues, pilotage, berth hire charges and other charges are realised from steamer agents that may vary depending on vessel size.

3.2 Paradip

The only major sea port in Orissa is Paradip serving eastern & central part of the country.

Salient Features of Paradip Port

| Draft (m) | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|-----------|---------------|-----------------|---------------|-------------------------------|
| | | | | |
| 11.0 | 13 | 14 | 1 | -- |

Largest vessels can be handled of 70,000 dwt. During 2007-08, following developmental projects were carried out.

1. Deepening of channel to handle 1,25,000 dwt vessels. Contract for dredging work was in progress.
2. Construction of stackyard completed.
3. Work of Single Buoy Mooring (SBM) of Indian Oil Corporation (IOC) is in progress.

There was all the time import record of coking coal, non-coking coal, hard coal, limestone and rock phosphate during 2006-07 and 2007-08 is as below:

(In '000 tonnes)

| Sl. No. | Commodity | 2006-07 | 2007-08 |
|--------------|-----------------|--------------|--------------|
| 1. | Coking coal | 4243 | 4725 |
| 2. | Non-coking coal | 1960 | 2688 |
| 3. | Hard coke | 913 | 1104 |
| 4. | Limestone | 411 | 744 |
| 5. | Rock phosphate | 2149 | 2577 |
| 6. | Sulphur | 531 | 664 |
| 7. | Others | 3447 | 4335 |
| Total | | 13654 | 16837 |

PORT FACILITIES

There was all the time export record of iron ore, thermal coal, ferro-chrome and POL during 2007-08. The commodity-wise exports during 2006-07 and 2007-08 are given below:

(In '000 tonnes)

| Sl. No. | Commodity | 2006-07 | 2007-08 |
|--------------|---------------------|--------------|--------------|
| 1. | Iron ore | 11880 | 12942 |
| 2. | Thermal coal | 10515 | 10660 |
| 3. | Chrome concentrates | 935 | 697 |
| 4. | Pig Iron | 577 | 397 |
| 5. | Ferro-chrome | 154 | 192 |
| 6. | P.O.L. | 257 | 351 |
| 7. | Others | 536 | 344 |
| Total | | 24584 | 25583 |

3.3 Visakhapatnam

It is a natural harbour. The handling capacity of the port in 2007-08 was 61.15 million tonnes. This port was second handler of traffic in 2007-08. The largest size of vessel that can be handled in the inner harbour is 50,000 dwt and in the outer harbour 150,000 dwt. Very large crude carriers meant for transshipment of 3 to 4 lakh dwt can be handled at the anchorage. Today it has blossomed into multi-commodity port with variegated cargo. This is the only port having three international accreditations viz. ISO 14001; 2004 (EMS)/OHSAS/8001 and ISO 9001; 2000 (QMS).

Salient Features of Visakhapatnam Port

| | Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|---------------|-----------|-------|---------------|-----------------|---------------|-------------------------------|
| | min | max | | | | |
| Inner harbour | 10.50 | 11.00 | 18 | -- | -- | 6915 (storage shed) |
| Outer harbour | -- | 17.00 | 6 | 1 | -- | 127851 (open area) |

Major development projects undertaken in 2007-08 were:

- i) One loco of 3100 HP has been commissioned on 19.2.2008.
- ii) Development of stacking areas of 20000 sq mt.
- iii) Deepening and widening of inner harbour entrance channel and turning circle to cater to 11 m draft vessels.
- iv) Widening of approach channel for night navigation of suex max facilities.
- v) MoU with HPCL signed for refinery expansion and SPM facility.
- vi) First dedicated train connecting Visakhapatnam container terminal with ICD at Loni close to Delhi was flagged.
- vii) Development of new railway siding & augmentation of connectivity at 3 railway lines.

The traffic in mineral/ore/mineral-based commodities handled by this port in 2006-07 and 2007-08 was as follows:

(In tonnes)

| Commodity | Exports | | Imports | |
|-----------------|----------|----------|----------|----------|
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Anthracite Coal | - | - | 128759 | 148132 |
| Bentonite | - | - | - | 45200 |
| LAM coke | - | - | 563317 | 608412 |
| Granite | 216857 | 289012 | - | - |
| Ferro-products | 2200 | 5000 | - | - |
| Iron ore | 10327124 | 12790137 | 17306 | 166114 |
| Limestone | - | - | 409839 | 561962 |
| Manganese ore | 37100 | 68907 | 67891 | 148335 |
| Coking coal | - | - | 6740466 | 7456091 |
| Crude oil | - | - | 4625874 | 4799490 |
| POL (crude) | - | - | 10796603 | 11897894 |
| Ilmenite sand | 215790 | 85800 | - | - |
| Steam coal | - | - | 1562991 | 1835269 |
| Thermal coal | 2405677 | 2895379 | - | - |
| Chrome ore | - | - | - | 23907 |
| Bauxite | - | - | 103064 | 115879 |

PORT FACILITIES

Port Charges

Wharfage charges (foreign) levied by Visakhapatnam Port Trust during the year 2006-07 were as follows:

| (In Rs. per tonne) | |
|---|--------|
| Commodity | Rate |
| Asphalt/bitumen, barytes, felspar, chrome ore | 16.50 |
| Alumina (bulk) | 30.00 |
| Aluminium, alumina sows ingots, alumina billets and alumina products | 22.00 |
| Bauxite ore | 23.00 |
| Ilmenite sand | 11.50 |
| Manganese ore | 9.90 |
| Silico-manganese, high carbon ferro-chrome, charge chrome, ferro-manganese, ferro-silicon and other alloys | 38.00 |
| Granite blocks and marbles | 37.00 |
| Cement clinker (including cement) | 17.00 |
| Limestone | 24.00 |
| All types of coal, coke, and coal tar pitch | 26.00 |
| Calcined petroleum coke | 30.00 |
| Thermal coal | 15.00 |
| Crude oil and petroleum products (except LPG) (in Rs. per kl) | 57.50 |
| LPG | 136.00 |
| Fertilizers (including MOP) | 27.50 |
| Blast furnace slag, bentonite, dolomite chips and river sand | 13.00 |
| Rock phosphate, sulphur, molten sulphur, liquid ammonia | 26.50 |
| Phosphoric/sulphuric acid | 37.00 |
| Iron ore (by mechanical handling) | 26.20 |
| Iron ore (by conventional handling) | 13.50 |
| Iron ore pellets (mechanical handling) | 28.20 |
| Iron ore pellets (conventional handling) | 15.50 |
| Steel products all varieties | 35.00 |
| Pig iron | 28.00 |
| Caustic soda | 25.00 |
| All varieties of refractory raw materials; i.e. dead-burnt magnesite, fused magnesia, magnesium clinker, calcined bauxite, magnesia grog and brown fused alumina. | 30.00 |

3.4 Ennore

Ennore port is situated on the Coromandal coast about 24 km north of Chennai port along coastal line in Tamil Nadu.

The Ennore port was originally conceived as a satellite port to the Chennai port, primarily to handle thermal coal to meet the requirement of Tamil Nadu Electricity Board (TNEB). The scope was expanded to set up (i) 1880 MW LNG power project; (ii) a large Petro Chem park (iii) A naphtha Cracker Plant.

This was the rationale behind planning of berths for coal berth (for users other than TNEB), iron ore, LNG, POL, chemicals and other liquids and crude to serve various industries that would come up on the proposed Petro Chem Park. These factors have contributed to the evaluation of Ennore port as a multi-functional energy port of the millennium.

The phase-I development of Ennore port has been completed. Commercial operations started with handymax geared vessels for unloading of thermal coal in June 2001. With the development of self loading and gearless vessel of 650,000/700,000 dwt, full fledged operations started in December 2002. Commoditywise cargo handled during 2006-07 and 2007-08 was as under:

| (In million tonnes) | | | |
|---------------------|--------------|--------------|--------------|
| Sl. | Commodity | 2006-07 | 2007-08 |
| 1. | Thermal coal | 8.80 | 9.05 |
| 2. | Iron ore | 1.72 | 2.19 |
| 3. | POL | 0.19 | 0.32 |
| Total | | 10.17 | 11.96 |

Status of development projects during 2007-08 was as follows:

1. Construction work of marine liquid terminal (3 million tpy) was in progress.
2. Construction work for coal terminal (8 million tpy for non-TNEB users) was in progress.
3. Construction work for iron ore terminal (12 million tpy) was in progress.
4. Public Private Partnership Appraisal Committee (PPPAC) approved proposal for the development of a container terminal (18 million tpy).

PORT FACILITIES

Ennore port has been endowed with large chunks of land. The facilities available at Ennore port are as below :

| | |
|---|---|
| 1. Berth | 2 (Coal) |
| Length | 280 metres each |
| Depth | 15 metres (BCD) |
| 2. Size of vessels that can be accommodated | 65,000/70,000 DWT |
| 3. Break water | |
| South | 1070 metres |
| North | 3080 metres |
| Type | Rubble mound with accropode armour protection. |
| 4. Approach Channel | |
| Length | 3775 metres |
| Width | 250 metres |
| Depth | 16 metres BCD |
| 5. Connectivity | Excellent road. Connectivity to NH4, NH5, NH45 linked to Chennai-Kolkata BG main line. Connectivity to Chennai airport. |

3.5 Chennai

The port at Chennai is an artificial harbour situated on the Coromandal coast in south-east India. It stands fourth based on traffic handled during 2007-08. The handling capacity of the port in 2007-08 was 53.35 million tonnes. The largest size of the vessel that can be received at the port is 169,000 DWT, having a maximum 17.4 m draft and maximum 280 m overall length.

Salient Features of Chennai Port

| Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|-----------|------|---------------|-----------------|---------------|-------------------------------|
| min | max | | | | |
| 8.54 | 17.4 | 23 | - | - | 47250 |

Ongoing projects under the National Maritime Development Programme (NMDP) include development of a second container terminal on BOT basis, elevated expressway from Chennai port to Maduravoyal up to NH4, modernisation of the Chennai Port, creating back up area at Sathangudu, open storage area by reclamation, dredging the channels and enhancing handling capacity of Bharathi Dock and deepening of Dr. Ambedkar Dock, etc. Other major ongoing projects are development of additional open storage yard and Chennai Ennore

Port road connectivity project. The 11th Five Year Plan Scheme comprises construction of additional Berth at southern end of container terminal and development of a new outer harbour to the North of BD on BOT basis.

The traffic in mineral/ore/mineral-based commodities handled by this port (excluding containers) during 2007-08 is given below :

| Commodity | (In tonnes) | |
|--------------------|-------------|---------|
| | Exports | Imports |
| Barytes | 508556 | - |
| *Coal | - | 7859986 |
| Coke & briquettes | - | 1838047 |
| Fluorspar | - | 32657 |
| Iron ore pellets | 80500 | - |
| Iron ore | 7656899 | - |
| Manganese ore | 86800 | - |
| Non-ferrous metals | - | 3285 |
| Other ores | - | 20828 |
| Gypsum | - | 16568 |
| Iron ore lump | 3043808 | - |

**Includes about 1.9 million tonnes from coastal vessels.*

Port Charges

Wharfage charges levied by Chennai Port Trust in 2007-08 were as follows:

| | | (In Rs. per tonne) |
|-------------------------------|---|--------------------|
| Item | | Rate |
| 1. Manual handling | | |
| i) | Ores and minerals in bulk handled by importers | 28.60 |
| ii) | Ores and minerals in bulk handled by exporters | 16.50 |
| 2. Mechanical handling | | |
| i) | Iron ore handled mechanically or through handling system at Bharathi Dock | 85.00 |
| ii) | Charges for cleaning the ore handling system for receiving the shipment of iron ore fines/calibrated iron ore | 2.00 |

Note: The rates specified at item 2(i) are inclusive of all operations from the time of tipping the iron ore from the wagon by the wagon tippler to putting it into the holds of the vessel, cleaning the system, cleaning the spillages, dust and trimming operations of the ship, if any, required and wagon damages; but exclusive of all the railway operations connected with the movement of iron ore for which charges are leviable as per the scale of rates.

PORT FACILITIES

3.6 Tuticorin

Tuticorin port is situated on the eastern coast in Tamil Nadu. It has two operating wings viz, Zone A comprising new major port, and Zone B representing old anchorage port. Construction of berth no. 9 was in progress during 2007-08. The handling capacity of this port in 2007-08 was 20.55 million tonnes. The largest size of vessel that can be received at the port is 73,879 dwt.

Salient Features of Tuticorin Port

| Draft (m) | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|-----------------------|--|-----------------|---------------|-------------------------------|
| 5.85 min to 10.90 max | Berths 10 Oil Jetties 1 Coal Jetties 2 | - | - | - |

The traffic in mineral commodities handled in 2006-07 and 2007-08 was as under:

(In tonnes)

| Commodity | Exports | | Imports | |
|---------------|---------|---------|---------|---------|
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Copper conc. | - | - | 1180816 | 1220040 |
| Garnet sand | 43442 | 67830 | - | - |
| Ilmenite sand | 206902 | 173212 | - | - |

Wharfage charges levied by Tuticorin port during 2006-07 and 2007-08 were as follows:

| Mineral/ore | Rate (Rs. per tonne) |
|---------------|----------------------|
| Garnet sand | 19.00 |
| Ilmenite sand | 19.00 |
| Copper conc. | 55.00 |

Development projects undertaken by Tuticorin port during 2007-08 include construction of cargo berth no.9; formation of four lane road; Replacement of old wharf crane at Berth nos. I & II. Future development plans of Tuticorin Port include deepening the channel and basin; upgradation of cola Jetty-II; outer harbour development; construction of International size ship building Yard and construction of North Cargo Berth-II.

WEST COAST

3.7 Kandla

This port is a natural harbour situated on the western coast of Gujarat. The handling capacity in 2007-08 was 63 million tonnes. The largest size of vessel that can be received at this port is 82,379 dwt. This port topped in traffic handled during 2007-08.

Salient Features of Kandla Port

| | Draft (m) | | No. of berths | No. of moorings | No. of wharfs provided | Stacking area (sq m) |
|--------------|-----------|-------|---------------|-----------------|------------------------|--|
| | min | max | | | | |
| Dry cargo | 9.10 | 12.00 | 12 | - | 12 | 5-6 lakh sq m. There is no special stacking |
| Liquid cargo | 10.00 | 10.70 | 6 | 5 | 6 | area for minerals. |

In addition, there was one maintenance jetty for floating dry docks and maintenance of port craft, three single buoy moorings to handle very large crude carriers for import of crude oil (POL), a minor port Tuna, 24 km south of Kandla for handling country crafts and a Bunder basin for handling of barges and country crafts and a product jetty of Essar to handle POL export at Vadinar. Achievements during 2007-08 are as below :

1. Project of container terminal was commissioned at Kandla port on BOT basis.
2. Capacity addition of 19.2 MMT for crude oil handling made by port is the largest additional capacity created by any Indian port.
3. Commissioned 3 nos. of higher capacity ELL cranes adding the fleet of cranes at the port to 12.
4. Two Mobile harbour cranes of 104 tonnes capacity each was commissioned in private sector at the port.
5. Port Flotila capacity was added with one 50 tonnes Bollard Pull Tug, 2 Pilot Launches and 2 High speed boats.

PORT FACILITIES

The traffic in mineral/ore/mineral based commodities handled in 2006-07 and 2007-08 was as under :

| Commodity | (In tonnes) | | | |
|----------------|-------------|---------|---------|---------|
| | Exports | | Imports | |
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Bentonite | 166591 | 194800 | - | - |
| Bauxite | 37750 | 45200 | - | - |
| Fertilizer | - | - | 1510705 | 3916127 |
| Rock phosphate | - | - | 24720 | - |
| Salt | 1241242 | 1217164 | - | - |
| Sulphur | - | - | 147145 | 159526 |
| Zinc conc. | 303632 | 340362 | - | - |
| Copper conc. | - | - | 59493 | 59157 |
| Perlite | - | - | 27500 | - |

Port Charges

Wharfage charges levied by Kandla Port Trust in force at present are as follows:

| Commodity | (In Rs. per tonne) | | | |
|------------|--------------------|---------|---------|---------|
| | Exports | | Imports | |
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Iron ore | - | - | 1 | - |
| Other ores | 27088 | 27027 | 67991 | 69295 |

| Commodity | Rate |
|--|--------|
| Liquid cargo | |
| i) Crude oil | 12.00 |
| ii) LPG (per cu m) | 100.00 |
| iii) POL products (bulk) | 26.25 |
| Fertilizer and raw material including sulphur | 20.00 |
| Cement & clinker | 15.00 |
| Ores and minerals (in all forms) | 11.25 |
| Granite and marbles | 15.00 |
| Metal (ferrous/non-ferrous) | 25.00 |
| (including pipes, plates, pig iron, coil, sheet and metal scrap) | |
| Construction materials and sand | 11.25 |
| Coal and coke | 15.00 |
| Asbestos | 15.00 |
| Salt | 2.50 |
| Dry chemicals including soda ash | 15.00 |

Note : In addition to above rates, cargoes other than bulk; i.e., break-bulk and non-containerised shall be charged @ Rs. 15/- per tonne for supply of port labour.

3.8 Mumbai

Mumbai port is a natural deep water port. The port is a multi purpose port handling all types of cargo-liquid bulk, dry bulk, break bulk and container. This port stands 5th among major ports based on traffic handled during 2007-08. The handling capacity of this port in 2007-08 was 50.70 million tonnes. Salient features of Mumbai port are as follows:

Salient Features of Mumbai Port

| Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|-----------|-----|---------------|-----------------|--|---|
| min | max | | | | |
| 6 | 10 | 55 | - | Berths have different lengths have been provided | No special facility for handling minerals |

The traffic in mineral/ore/mineral based commodities handled in 2006-07 and 2007-08 was as under :

| Commodity | (In tonnes) | | | |
|------------|-------------|---------|---------|---------|
| | Exports | | Imports | |
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Iron ore | - | - | 1 | - |
| Other ores | 27088 | 27027 | 67991 | 69295 |

Port Charges

Wharfage charge levied by the Mumbai Port Trust in 2007-08 was Rs. 34.50 per tonne for import and export by foreign & coastal vessels. Loading and unloading is done by the consignees/consigners and no charges; therefore, are recovered by Mumbai Port Trust.

3.9 Mormugao

Mormugao port is one of the country's old ports on the west coast of India with modern infrastructural facilities and one of the finest natural harbours in the world.

The entire output of iron ore from Goa and considerable quantity of iron ore from Bellary-Hospet is exported through this port. Maximum exports of iron ore take place through this port.

The total handling capacity of this port in 2007-08 was 21.50 million tonnes for iron ore and other ores and 5.00 million tonnes for coal/coke. The largest vessel that can be received at this port is about 275,000 dwt.

PORT FACILITIES

Salient Features of Mormugao Port

| Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided |
|-----------|------|---------------|-----------------|---------------|--|
| min | max | | | | |
| 11.0 | 14.1 | 3 | 3 | - | 80000 sq m area attached to Berth No. 9, 16,000 sq m berth no. 5A and 6A for ore |

The demand for Mooring Dolphins particularly during monsoon period is heavy and also for export of iron ore through this facility. Construction work of additional three Mooring Dolphins was in progress during 2007-08.

Besides, Ships are loaded midstream with ore at East of Breakwater (EOB) and West of Breakwater (WOB) with the help of ships gear to a maximum permissible draft depending upon the position of berthing. Large-size ships requiring higher draft are loaded at the outer anchorage with the help of transhippers. At this position, there is no draft restriction. Here, ore is brought by barges from hinterland through inland waterways and loaded into ships directly from the barges by the transhippers. There are four such transhippers, owned and operated by private parties and their aggregate assessed loading capacity is 7.5 million tonnes per annum.

The traffic in mineral/ore/mineral-based commodities handled in 2006-07 and 2007-08 was as follows:

| Commodity | (In tonnes) | | | |
|------------------|-------------|----------|---------|---------|
| | Exports | | Imports | |
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Iron ore | 26531541 | 26851321 | 54856 | 27085 |
| Iron ore pellets | 132950 | 450407 | 21441 | - |
| Bauxite | - | 127400 | - | - |
| Coke | 51951 | 16667 | 1084202 | 1028327 |
| Coal | - | - | 3954704 | 4244391 |

Port Charges

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) rate levied by Mormugao Port Trust in 2007-08 was as below:

| Mineral/ore | Rate Rs./tonne | Remarks |
|--------------------|----------------|-----------------------|
| 1. Iron ore | 64.86 | At berth No. 9 |
| 2. Iron ore pellet | 69.29 | During June to August |
| | 122.30 | During September-May |
| 3. Bauxite | 30.00 | At Berth |
| 4. Coal/coke | 18.00 | At Mooring Dolphin |
| | 30.00 | At Berth |

3.10 New Mangalore

New Mangalore Harbour Project was declared a major port in 1974. The port has a modern all weather artificial lagoon situated at Panombur, Mangalore in Karnataka on the west coast of India.

The handling capacity of this port in 2007-08 was 43.50 million tonnes. The largest vessel that can be received at this port is 90,000 tonnes.

Salient Features of New Mangalore Port

| Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided |
|-----------|------|---------------|-----------------|---------------|------------------------|
| min | max | | | | |
| 7.0 | 14.0 | 13 | - | 1 | 58391 sq m open area |

The traffic in mineral/ore/mineral-based commodities handled in 2006-07 and 2007-08 was as follows :

| Commodity | (In tonnes) | | | |
|------------------------|-------------|---------|----------|----------|
| | Exports | | Imports | |
| | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Bentonite | - | - | 50706 | - |
| Clay | - | - | 15386 | 8167 |
| Coal | - | - | 1046615 | 1691100 |
| Granite | 82112 | 50292 | - | - |
| Crude oil | - | - | 12302932 | 12793728 |
| Iron ore/fines/pellets | 5971801 | 8736819 | 275696 | 528536 |
| Limestone | - | - | 265448 | 698555 |
| Slag | 26350 | 15923 | - | - |

PORT FACILITIES

Port Charges

Wharfage charges levied by New Mangalore port during 2006-07 and 2007-08 were as follows:

| Commodity | Rate (Rs.per tonne) |
|------------------|------------------------|
| Iron Ore Pellets | 50.00 |
| Iron Ore Fines | 35.00 |
| Crude Oil | 70.00 |
| Coal | 25.00 |
| Limestone | 35.00 |
| Clay | 20.00 |
| Granite Stones | 45.00 |
| Bentonite | 20.00 |
| Slag | 25.00 |

3.11 Cochin

Modern port of Cochin was declared a major port in 1936.

Salient Features of Cochin Port

| Draft (m) | | No. of berths provided | No. of moorings | No. of wharfs | Stacking area |
|-----------|------|------------------------------|--------------------|------------------|---|
| min | max | | | | |
| 9.14 | 11.7 | 16 (3 oil jetties) | - | 2 | Roof area 57,485 sq m and 10,000 sq m open area |

The achievements during 2007-08 are as below:

1. Construction work by BOT operator for International Container Transhipment Terminal Project (ICTT) at Vallarpadam commenced.
2. Capital dredging of channel for Rajiv Gandhi Container Terminal (RGCT) completed.
3. Work for crude oil Single Buoy Mooring (SBM) at Kochi Refineries Ltd completed. Important schemes taken up during 2007-08 include rail connectivity to ICTT, Special Economic Zone (SEZ).

Reclamation and development of land at South end of Willingdon Island and replacement of Mattancherry Wharf Phase-I, etc.

The traffic handled during 2006-07 and 2007-08 was as under :

(In 000' tonnes)

| Sl. No. | Category | 2006-07 | 2007-08 |
|---------|-------------------|---------|---------|
| 1. | Soda Ash | 60 | 41 |
| 2. | Oil Cake | 30 | 6 |
| 3. | Rock Phosphate | - | 182 |
| 4. | Sulphur | - | 89 |
| 5. | Zinc concentrates | 40 | 58 |
| 6. | Coal | - | 246 |
| 7. | Murate of potash | 79 | 56 |
| 8. | Shredded scrap | 121 | 104 |
| 9. | P.O.L. | - | 11299 |

Port Charges

Wharfage charges levied by the Cochin Port during 2007-08 were as follows:

(In Rs. per tonne)

| Sl. No. | Commodity | Rate |
|---------|---|-------|
| 1. | Asbestos | 50.40 |
| 2. | Construction and building materials- | |
| | (a) Sand, stones | 31.20 |
| | (b) Granites & marbles | 40.20 |
| | (c) Cement, clinker, clay, chalk | 43.70 |
| 3. | (a) Coal/coke | 33.60 |
| | (b) Thermal coal | 56.00 |
| 4. | Fertilizer and fertilizer raw material- | |
| | (a) Sulphur | 37.20 |
| | (b) Rock phosphate | 34.20 |
| | (c) Finished fertilizers | 34.20 |
| 5. | Metals and metal scrap | 67.20 |
| 6. | Liquid Cargo, acids- | |
| | (a) Phosphoric acid | 65.50 |
| | (b) Liquid ammonia | 71.40 |
| | (c) POL & POL products | 65.00 |
| 7. | Minerals & ores | 43.70 |
| 8. | Salt | 8.40 |

3.12 Jawaharlal Nehru Port, Nhava Sheva, Navi Mumbai (JNPT)

JNPT does not have any facility to handle ore/minerals, separately. JNPT has become a world class international container handling port. It handles about 55-60% of the total container cargo of the country. The largest size of the vessel that can be received at the port is 100,000 DWT. The capacity of JN Port as on 31.3.2008 is 54.34 million tonnes.

Salient Features of Jawaharlal Nehru Port

| Draft (m) | | No. of berths | No. of moorings | No. of wharfs | Stacking area provided (sq m) |
|-----------|------|---------------|-----------------|---------------|-------------------------------|
| min | max | | | | |
| - | 12.5 | 12 | - | 12 | 1422614 |

4. NON-MAJOR PORTS

Facilities for handling and transporting minerals from selected non-major ports are given in Table-2.

There are 200 non-major ports in the country controlled by State Government. These are in Gujarat (42), Maharashtra (48), Goa (5), Karnataka (10), Kerala (17), Tamil Nadu (15), Andhra Pradesh (12), Orissa (13), West Bengal (1), Daman & Diu (2), Lakshadweep (10), Puducherry (2) and Andaman & Nicobar (23). During the 11th Plan, non-major ports are expected to increase capacity to 611 million tonnes from approximately 228 million tonnes per annum. Traffic at non-major ports and private ports is growing at 11.74% and their share is expected to grow from 26.30% in 2005-06 to 30% during 2011-12. Suitable policies need to be prepared so that non-major ports also act as centres of growth. Minor Port Survey

Organisation (MPSO), a subordinate office of Ministry of Shipping, Government of India, located at Mumbai, carries out the task of Hydrographic Survey in minor and major ports and inland waterways. The Governments of Gujarat, Maharashtra and Andhra Pradesh have taken several initiatives for developments of their ports through private investments.

Gujarat Maritime Board has identified 41 small ports (including 11 intermediate ports) for development. Around 28 port development projects involving aggregate investment of about Rs. 13,888 crore have been envisaged. Gujarat Maritime Board had signed an agreement with International Finance Corporation for preparing a feasibility report for development of Hazira and Dahej ports.

Govt. of Kerala is in the process of developing a deepwater container transshipment port (terminal) at Vizhinjam, near Thiruvananthapuram to cater to the growing container transshipment demands of the country and the region. The project is proposed through Public Private Partnership (PPP) and costing about Rs. 5,350 crore.

Maharashtra Maritime Board is State Government commercial enterprise and is engaged in promoting development of minor and intermediate Ports to administer, control and manage such Ports; and, presently Ajunvel (Dabhol) Port, Mandwa passenger Terminal, Vijaydurg Port, Jaigad port, Redi Port, Karanja Passenger Terminal, Rewas Passenger Terminal and Achre captive jetty projects are in progress.

Besides, Andaman Lakshdweep Harbour Works (ALHW) is a subordinate office of Department of Shipping, Government of India. It has the responsibility for providing port and harbour facilities in Andaman & Nicobar Islands and Lakshdweep Islands.

PORT FACILITIES

Table – 2 : Facilities for Handling & Transporting and Mineral Commodities Handled at Selected Non-major Ports, 2006-07 and 2007-08

| State/ Port | Facilities for Handling & Transporting | | | | | | Mineral Commodity Handled (in tonnes) | | | | | |
|--------------------------------------|--|---------------|---------------|---------------|--------------------------|-----------------------------------|--|--|--|--|--|--------|
| | Handling capacity ('000t) | Draft max (m) | No. of wharfs | No. of berths | Stacking capacity (sq m) | Largest vessel received ('000DWT) | Commodity | Export | | Import | | |
| | | | | | | | | 2006-07 | 2007-08 | 2006-07 | 2007-08 | |
| WEST COAST | | | | | | | | | | | | |
| GUJARAT | | | | | | | | | | | | |
| Bhavnagar | 700 to 800 | 12 | 2 | 1 | 249039 | - | NA | NA | NA | NA | NA | NA |
| Bedi Jamnagar | - | 3.30 | - | 5 | 2669 | 77.2 | NA | NA | NA | NA | NA | NA |
| Dahej Harbour and Infrastructure Ltd | 3000 | 13.5 | 1 | 1 | 6.6 (acre) | 70 | NA | NA | NA | NA | NA | NA |
| Gujarat Adani | 2500 | 15.2 | 4 | 4 | 148450 | 125 | NA | NA | NA | NA | NA | NA |
| Jafarabad (Jafarabad Jetty) | 1000 4000 | 9 | - | 1 | - | - | *Clinker Coal | 100080 - | 1043137 - | - 218387 | - 255131 | - - |
| (L&T captive jetty) | 14.5 | - | 1 | - | - | - | NA | NA | NA | NA | NA | NA |
| Jakhau-K | 90 | 8.5 | 2 | 1 | 1465 | - | NA | NA | NA | NA | NA | NA |
| Magdalla Surat | - | 3.5 | - | 10 (Jetties) | 30129 | 136.61 | Coal Iron ore Limestone Iron ore fines | - - 5329 315351 | - 38200 19135 442229 | 2237495 5188447 213279 - | 1781996 5499895 271750 - | - - |
| Mandvi-K | - | 6 | 2 | - | 1465 | - | NA | NA | NA | NA | NA | NA |
| Mundra-K | 135.6 | 6 | 2 | 1 | 3200 | - | NA | NA | NA | NA | NA | NA |
| Navalakhi | 3000 | 5.0 | 4 | 4 | 182900 (Coal) | 82.34 | Iron ore Salt Cement Coal | - 245174 - - | - 122545 - - | 32464 - 33796 1594340 | - - 3380 2315546 | - - |
| Okha | - | 8.32 | 2 | 2 | 50000 (Bauxite & Coal) | - | NA | NA | NA | NA | NA | NA |
| Pipavav | 400 | 12.5 | 2 | 4 | - | 80.0 | Cement Clinker Coal LPG *Iron ore pellets/fines Soda ash Steel cargo Urea Gypsum | 252106 44750 - - 6199 29041 195360 - - | 62071 - - - 7100 4014 234988 - - | - - 960619 18380 139372 - | - - 694021 2486 90307 - | - - |

(Contd.)

PORT FACILITIES

Table - 2 (Contd.)

| State/ Port | Facilities for Handling & Transporting | | | | | | Mineral Commodity Handled (in tonnes) | | | | |
|--------------------|--|---------------------|------------------|--|---|---|---------------------------------------|---------|---------|---------|---------|
| | Handling capacity (^{'000} t) | Draft max (m) | No. of wharfs | No. of berths | Stacking capacity (sq m) | Largest vessel received (^{'000} dwt) | Commodity | Export | | Import | |
| | | | | | | | | 2006-07 | 2007-08 | 2006-07 | 2007-08 |
| Porbandar | 885.6 | 9.8 | 1 | 2 | 153750 (Bauxite) 144300 (Coal) | 53.6 | NA | NA | NA | NA | NA |
| Sikka | - | 12 | - | 7 | - | 311.2 | NA | NA | NA | NA | NA |
| Veraval | 36.3 | 10.2 | 11 | - | - | - | NA | NA | NA | NA | NA |
| KARNATAKA | | | | | | | | | | | |
| Belkari | 60.9 | No res- triction | 2 | 60000 (Iron ore) 20000 (Mn ore) | - | - | NA | NA | NA | NA | NA |
| Karwar | - | 3.5 | 1 | 2 | 50 (acre) | 60 | - | - | - | - | - |
| Kundapura | 200 | 4.00 | - | 1 | 12000 | - | NA | NA | NA | NA | NA |
| MAHARASHTRA | | | | | | | | | | | |
| Dahanu | - | 6.5 | - | 3 | - | - | Coal | - | - | 503863 | 533402 |
| Dharamtar | - | 5 | - | 2 | - | - | *Coke | - | - | 936471 | 956017 |
| | | | | | | | Iron ore fines | - | - | 926111 | 626513 |
| | | | | | | | Iron ore pellets | - | - | 830053 | 1072208 |
| | | | | | | | Iron ore lumps | - | - | 1427393 | 1222312 |
| | | | | | | | Limestone | - | - | 249499 | 258447 |
| | | | | | | | Coal | - | - | 850084 | 878832 |
| | | | | | | | Sulphur | - | - | 267124 | 191846 |
| | | | | | | | Clinker | - | - | 224056 | 277666 |
| | | | | | | | Scrap | - | - | 87652 | 132455 |
| | | | | | | | H.B. Iron | - | - | 279636 | 165813 |
| | | | | | | | MOP | - | - | 255147 | 192447 |
| | | | | | | | Rock phosphate | - | - | 128997 | 57488 |
| | | | | | | | Dolomite | - | - | 119098 | 108942 |
| | | | | | | | D.R. Iron | - | - | 36432 | 33850 |
| | | | | | | | Coke breez | - | - | - | 2862 |
| | | | | | | | Gypsum | - | - | - | 22000 |
| | | | | | | | Sponge Iron | - | - | - | 5902 |
| | | | | | | | Pig iron | - | - | - | 11000 |
| | | | | | | | Urea | - | - | 23950 | - |
| | | | | | | | DAP | - | - | 52711 | - |
| | | | | | | | Silica sand | - | - | 2400 | - |
| | | | | | | | Sand | - | - | 240 | - |
| Ratnagiri | - | 5 | - | 1 | - | - | Cement clinker | - | - | 270262 | 382255 |
| Redi | - | 4.0 | - | 2 | 22096 | - | Iron ore fines | 432939 | 567057 | - | - |

(Contd.)

PORT FACILITIES

Table - 2 (Concl.d.)

| State/ Port | Facilities for Handling & Transporting | | | | | | Mineral Commodity Handled (in tonnes) | | | | | |
|------------------------|--|---------------------|--|------------------|--------------------------------|---|---------------------------------------|---------|---------|---------|---------|----|
| | Handling capacity (^{'000} t) | Draft max (m) | No. of wharfs | No. of berths | Stacking capacity (sq m) | Largest vessel received (^{'000} dwt) | Commodity | Export | | Import | | |
| | | | | | | | | 2006-07 | 2007-08 | 2006-07 | 2007-08 | |
| Revdanda | 838 | 8.0 | - | - | - | - | Iron ore fines | 47442 | 144796 | - | - | |
| | | | | | | | Iron ore Pellets | 119391 | - | 216325 | 102335 | |
| | | | | | | | Iron ore Lumps | 17854 | - | 615786 | 563494 | |
| | | | | | | | DRI | - | 27714 | - | - | |
| Jaigad | 153 | 5.5 | - | - | - | - | Bauxite | 41636 | 153018 | - | - | |
| Kelshi | 153 | 3.0 | 1 | 1 | - | 0.8 | Bauxite | 239416 | 322633 | - | - | |
| Dighi | - | 9.5 | - | - | - | - | - | - | - | - | - | |
| EAST COAST | | | | | | | | | | | | |
| ANDHRA PRADESH | | | | | | | | | | | | |
| Kakinada (Sea port) | 1800 | | Open road-sted-port, no separate stacking yard for minerals | | | | NA | NA | NA | NA | NA | NA |
| Machilipatnam | 12 t/day | - | 8 jetties | - | 400 acres | open anchorage port | - | - | - | - | - | |
| Rawa | 2500 | - | - | - | - | - | - | - | - | - | - | |
| TAMIL NADU | | | | | | | | | | | | |
| Cuddalore | 82.44 | | Open roadsted-port | | | | - | - | - | - | - | |

* Relates to Indian coastal destinations/port of origin.