Indian Minerals Yearbook 2018

(Part- I : GENERAL REVIEWS)

57th Edition

PORT FACILITIES

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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6 Port Facilities

1. GENERAL

1.1 Growth

Ports are economic and service provision units of a remarkable importance because they act as a place for the interchange of two transport modes, maritime and land, whether by rail or road. India has a long coastline of about 7,517 km spread across the western and eastern shelves of the mainland and also along the islands. It is a strategic geographical asset for country's trade. There are twelve major ports in India out of which six are located on the east coast and six on the west coast. In addition, there are about 205 notified intermediate/minor ports in the country. Shipping plays an important role in the economic development of the country, especially in India's International Trade. The Indian Shipping Industry also plays an important role in the energy security of the country, as energy resources, such as coal, crude oil and natural gas are mainly transported or received by ships. Approximately, 95% of the country's trade by volume and 70% in terms of value are being transported through sea route. India has one of the largest merchant shipping fleets among the developing countries. The major ports in India have recorded a growth of 4.77 per cent and together handled 679.35 million tonnes of cargo during the period April 2017 to March 2018 as against 648.39 million tonnes handled during the corresponding period previous year. Nine ports namely Kolkata (including Haldia), Visakhapatnam, Paradip, Kamarajar, Chennai, Cochin, New Mangalore, JNPT and Deendayal also registered positive growth in traffic. The Ministry of Shipping encompasses within its fold major ports and inland water transport among others. All major ports in the country presently have both rail and road connectivity.

1.2 Sethusamudram Corporation Ltd (SCL)

The project is kept in abeyance in view of the litigations filed in the Supreme Court of India.

1.3 Private Sector Participation in Major Ports

The Private Sector is envisaged to fund projects under Public-Private-Partnership (PPP) mode through Design-Build-Finance-Operate-Transfer (DBFOT) or Build-Operate-Own- Transfer (BOOT) models. As per the report of Indian Port Association, the details of projects awarded are given in Table-1.

1.4 Inland Water Transport (IWT)

India has large number of inland waterways consisting of rivers, canals, backwaters, crecks, lakes, etc., which have the potential for development of efficient waterways transport network. IWT is reffered to as operationally cheaper, high in fuel efficiency and environmentally friendly mode of transport. Inland Waterways Authority of India (IWAI) came into existence on 27.10.1986 for development and regulation of inland waterways for the purpose of shipping & navigation. The Authority primarily undertakes projects for development and maintenance of IWT infrastructure on National Waterways through grant received from Ministry of Shipping. This mode of transport is a potential supplement to the overburdened rail and that of congested roads and efforts are underway to develop this mode of transportation and to operationalise it.Waterways declared as National Waterways by the Act of Parliament come under the purview of Central Government, while other waterways remain under the respective State Government's domain.

The Kolkata Port, being a riverline port and strateigically connected to National Waterway No. 1 and National Waterway No.2, has huge potential in respect of movement of cargo through Inland water Transport (IWT) mode.

National Waterways

The Government of India has so far declared six waterways as National Waterways. These are:

National Waterway-1: Allahabad-Haldia stretch of the Ganga-Bhagirathi-Hooghly River System (Total length- 1,620 km declared in 1986) in the States of Uttar Pradesh, Bihar, Jharkhand and West Bengal.

National Waterway-2: Dhubri-Sadiya stretch of Brahmaputra River (Total length- 891 km declared in 1988) in the State of Assam.

National Waterway-3: Kottapuram-Kollam stretch of West Coast Canal along with Udyogmandal and Champakara Canals (Total length- 205 km declared in 1993) in the State of Kerala.

National Waterway-4: Kakinada-Puducherry stretch of the canal along with designated stretches of Rivers Godavari and Krishna (Total length- 1,095 km declared in 2008) in the States of Andhra Pradesh, Tamil Nadu and the Union Territory of Puducherry.

National Waterway-5: Designated stretches of East Coast Canal, River Brahmani and Mahanadi Delta (Total length- 623 km declared in 2008) in the States of West Bengal and Odisha.

National Waterway-6: Lakhipur to Bhanga at River Barak in Assam (Total length - 121 km declared in 2013).

Development of 106 New National Waterways:

National WaterwaysAct, 2016 (No.17 of 2016) was published in the Gazette of India Extraordinary Part II and Section I dated 26th March, 2016 (which came into effect from 12th April, 2016) along with the list of 106 new National Waterways.

Status of 106 New National Waterways:

Feasibility Studies (FSs) were initiated on 106 National Waterways (NWs), out of which, studies on 103 NWs have been completed. Based on the finding of FSs, 36 NWs have so far been found feasible for development. Based on the Detailed Project Reports, development work have been initiated on 10 most viable NWs.

2. MAJOR PORTS

Major ports are under the jurisdiction of the Government of India and are governed by the Major Port Trust Act, 2013, except Kamrajar port (Ennore port), which is administered under the Companies Act, 2013.

There are twelve major ports in the country, (6 on the eastern coast and 6 on the western coast) viz, Kolkata-Haldia, Paradip, Visakhapatnam, Chennai, Kamarajar and V.O.Chidambaranar (formerly Tuticorin) on the East Coast and Cochin (in 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.

Deendayal (Kandla) Port handled the highest volume of traffic 110.10 m.t. (16.21%) followed by Paradip with 102.01 m.t. (15.02%), JNPT with 66.00 m.t. (9.72%), Visakhapatnam with 63.54 mt. (9.35%) and Mumbai with 62.83 m.t. (9.25%) . Together these five Ports handled around 60 percent of major port traffic.

2.1 Cargo Handling Capacity and Cargo Handled

The cargo handling capacity in Major Ports during 2017-18 (provisionally) was 1451 million tonnes as compared to 1065.83 million tonnes during 2016-17. The major ports, therefore, continued to maintain a favourable capacity-cargo equation during the year.

The major ports handled a total traffic of 679.37 million tonnes during 2017-18 against 648.39 million tonnes during 2016-17. Traffic handled by major ports during 2016-17 and 2017-18 is given below:

Traffic Handled at Major Ports
2016-17 & 2017-18

(In million tonnes)

Sl. No.	Ports	2016-17	2017-18
1A.	Kolkata	16.81	17.39
1B.	Haldia	34.14	40.50
2.	Paradip	88.95	102.01
3.	Visakhapatnam	61.02	63.54
4.	Kamarajar (Ennore)	30.02	30.44
5.	Chennai	50.21	51.88
6.	V.O. Chidambaranar (formerly Tuticorin)	38.46	36.58
7.	Cochin	25.00	29.13
8.	New Mangalore	39.94	42.05
9.	Mormugao	33.18	26.89
10.	Mumbai	63.05	62.83
11.	JNPT	62.02	66.00
12.	Kandla	105.44	110.10
	Total	**648.39**	**679.37**

Source: *Annual Report 2016-17, Ministry of Shipping.Government of India, Indian Port Association and Press Information Bureau dt. 6.4.2018 for data 2017-18. Figures rounded off.*

The selected commodity-wise cargo traffic handled at major ports during 2016-17 and 2017-18 is as below:

(In million tonnes)

Sl.No.	Commodity	2016-17	2017-18
1.	P.O.L (Crude & Products)	200.23	213.26
2.	Iron ore	41.77	41.17
3.	Fertilizer	7.04	7.52
4.	Fertilizer Raw material (Dry)	7.01	7.53
5.	Thermal Coal	126.18	126.73
6.	Food Grains	6.50	2.40
7.	Other/cargo	259.15	280.87
	Total	**647.88**	**679.48**

Source: *Basic port statistics, 2017-18*

3. PORT-WISE 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 caters to the cargo, Traffic of the entire Eastern India and the two landlocked 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.

Salient Features of Kolkata - Haldia Port

Port	Draught (m) min.	Draught (m) max.	No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
Kolkata	5.4	8.3	35	24	5	134722 (Transit Shed) + 10794 Warehouse)
Haldia	5.9	8.3	17*	–	–	25040 (Transit shed) 892840 (open area)

** Including three oil jetties and two barge jetties*

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. Kolkata Port handled 57.891 million tonnes (MT) traffic in 2017-18 (KDS handled traffic of 17.39 million tonnes, HDC handled 40.501 million tonnes). The port has 50 berths (KDS – 33 and HDC –17) handling various types of cargoes including containers with a capacity of 86.99 MTs.

The traffic in mineral/ore/mineral-based commodities handled at Kolkata and Haldia Port in 2016-17 and 2017-18 was as under:

(In '000 tonnes)

Commodity	Export		Import	
	2016-17	2017-18	2016-17	2017-18
Thermal coal	1818	2181	-	7
Coking coal	-	-	11066	14810
Iron ore	2320	3152	-	-
Sand/Silica sand	83	73	330	359
Fertilizer (Raw Material)	-	-	532	989
Metallurgical coke	-	-	746	1125
Limestone	-	-	3950	4292
Raw Petroleum coke	-	-	246	372
Gypsum	-	-	360	441
Magnesite	-	-	20	20
Dolomite	-	-	98	100
Non-coking/Steam coal	-	-	9936	9533
Manganese ore	-	-	1722	3040
Cement clinker	3	7	1450	2533
Salt	-	-	56	40

Source: *Administrative Report, 2017-18,*

Wharfage

Wharfage on foreign Cargo landed/shipped at Kolkata Port Trust as available w.e.f. 1.10.2016.

(In ` per tonne)

Sl. No.	Item	Rate
	Cargo handled through Mechanical system	
1.	Crude oil	100.24
2.	Export Iron ore	53.89
3.	Export Thermal Coal	75.00
4.	All other types of coal not specified, Fertilizer, Fertilizer raw materials, soda ash, and all other dry bulks	150.00
	Cargo handled other than through Mechanical system	
1.	Salt, Fly ash, Sand	26.95
2.	Iron ore, Iron ore pellets	26.95
3.	Limestone, Bitumen, Pig iron, sponge iron and other ferrous metals, All types of coal/coke/ore/ other dry bulk cargo not specified	53.89
4.	Magnesite, granite, all types of Scraps, fire bricks and other refractory materials, mica block/flake/splittings/waste/scrap/ powder mica, non-ferrous metals of all kinds except ingot of zinc/aluminium/copper, lead, goods, rock phosphate, sulphur, other fertilizer raw materials, fertilizers, lead conc., asbestos.	94.31
5.	Iron & steel, pipes & tubes	80.83
	Wharfage on coastal cargo landed/shipped at/ from Kolkata Port Trust	
1.	Crude oil, Thermal coal, Iron ore and Iron ore pellets	Same as Foreign cargo.
2.	All other cargo	60% of the rate for foreign cargo as specified for foreign cargo

Development Plans

1) Setting up of Outer Terminal-II (OT-II) for liquid cargo handling at HDC (Cost Rs. 74.23 crore & capacity 2.00 MMTPA) envisaged to handle chemicals and liquid cargo comprising edible oil, Paraxylene etc is being set up on river Hooghly, upstream of Lock Entrance and expected to complete by June, 2020.

2) Setting up of Liquid Cargo Handling Jetty alongwith associated facilities at Shalukkhali, Haldia Dock-II (on BOT basis) [Cost Rs. 172.52 crore & capacity 2.43 MMTPA] for handling Paraxylene, POL, Edible Oil & Chemicals etc and expected to complete by December 2021.

3) 2nd rail line from Durgachak to HDC Railway System under Sagarmala Project (Cost Rs. 78.84 crore) for covering the entire route up to Haldia from Panskura which has increased the capacity of rail movement to and from Haldia and expected to complete by 29.08.2019.

4) Deployment of two Floating Crane facilities at Sagar [Cost Rs.65.36 crore, Estimated Capacity : 2.43 MMTPA] in KoPT two Floating Cranes have been commissioned on 22.12.2017 and 03.01.2018. The trade is being encouraged to bring more cargo by gearless vessels availing of the higher drafts at Sagar, Sandheads and other deep draft locations. The incremental cargo will be transferred by the Floating Cranes into barges and will be brought to HDC berths which will reduce the logistics costs to the trade and industries located in the hinterland of HDC.

5) Setting up of Floating Cargo Handling Facilities at HDC/ Barge Jetty at Haldia and floating cranes at Sagar for transloading operation of Haldia Dock Complex of KoPT [Cost Rs. 73 crore, Estimated Capacity : 2.55 MMTPA] for handling cargo from mini bulk carriers /barges. This terminal which has been commissioned in June, 2018 will be predominantly used for handling additional cargo at HDC being transhipped by Floating Cranes at Sagar (already commissioned) and Sandheads and other deep drafted locations of KoPT.

6) Development of hardstand area measuring about 1.13 lakh sq. meters inside Dock at HDC (Cost Rs. 43.99 crore) Construction of Hardstand with concrete paver blocks including drainage facility behind Berth No 9 and Berth No 13 at GC Berth of HDC was placed at an order value of Rs 4434.24 lakhs on 15.07.2016. The scheme has been completed on 15.04.2018.

3.2 Paradip

It is one of the premier Maritime gateways on the East Coast of India based on its core strengths like deep draft, proximity to reach mineral bearing areas, vicinity to the large hinterland and land locked regions.

Salient Features of Paradip Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
min	max				
11.0	14.5	14	1	–	–

The port handled 102.01 million tonnes of cargo during 2017-18 compared to 76.39 million tonnes in 2015-16. The Port has 16 berths/jetties and 3 Single Point Moorings and RO-RO Jetty for handling different types of cargoes with a capacity of 126.89 MT (as on 31-03-2018).

3.3 Visakhapatnam

It is a natural harbour. Visakhapatnam Port has handling capacity of 126.89 million tonnes during 2017-18. The largest size vessel that can be handled in the inner harbour is 14.50 metres draught vessels, while the outer harbour is capable of handling vessels up to 200,000 dwt having draught up to 18.10 m.

Salient Features of Visakhapatnam Port

	Draught (m)		No. of berths	No. of moor-ings	No. of wharf	Stacking areas provided (sq m)
	min.	max.				
Inner harbour	10.00	14.50	21	–	NA	Exclusive for Iron ore 388.871 sq m
Outer harbour	14.00	18.10	6	1	NA	

Traffic in mineral commodities handled by Visakhapatnam port during 2017-18 is furnished below:

(In tonnes)

Commodity	Exports	Imports
Iron ore	4,441,958	225,893
Mn ore	52,033	2,088,273
Thermal coal	2,948,425	-
Bentonite	-	77,000
Limestone	-	575,913
Bauxite	-	640,458
Cooking coal	-	5,764,304
POL & Crude	1,019,608	12,036,966

Following are the development activities that were undertaken in the port during 2017-18.

1) Re-construction of old and shallow berth in the Inner Harbour by replacement of EQ-2 and EQ-5 berths to cater to 14.5 meters draft vessels.
2) Development of additional oil handling facility by improving the capacity utilisation of berths in Inner Harbour i.e. OR1 & OR2.
3) Implementation of ERP.
4) Installation of Mobile container scanner.
5) Development and improvement of rail and road connectivity.
6) Environment upgradation works.

Future Development Plan:

Phase II mechanised iron ore handling facility at WQ-1 in the Inner Harbour is slated to be taken up after achieving the threshold limit of handling 12.5 M.T. of OH for iron ore handling by M/s Essar Vizag Terminal Ltd. on DBFOT.

3.4 Kamarajar Port Ltd (formerly Ennore)

(A mini Ratna Govt. of India Undertaking)

Kamarajar port is situated on the Coromandal coast about 24 km north of Chennai port along the coastal line in Tamil Nadu. The port has handling capacity of 26 million tonnes during 2017-18. The port handled 23.17 million tonnes of imported coal during the year 2017-18.

The facilities available at Kamarajar port are detailed below:

1. Berth	2 (Thermal Coal)	one berth automobile (GCB) one POL/chemicals (MLT1) and one coal (other than TNEB)
Max. permissible Length	240 metres each	
Max. permissible Draught	13.5 metres	
Capacity of berth CB1	8 MTPA	
Capacity of berth CB2	4 MTPA	
Capacity of berth GCB	1MTPA	
Capacity of berth MLT1	3MTPA	
Capacity of berth CICT	8MTPA	
2. Size of vessels that can be accommodated	65,000/70,000 dwt (For CB1&CB) >70,000 dwt (For GCB) up to 150000 dwt (For MLT1 & CICT)	

(Contd.)

(Concld..)

3. Breakwater	
South	1,070 metres
North	3,080 metres
Type	Rubble mound with accropode armour protection.
4. Approach Channel	
Length	3,775 metres
Width	250 metres
Depth	16 metres BCD
5. Equipment profile	
i) Conveyors (2 nos - 400 TPH each)	
ii) Unloading equipment (2 nos-200 TPH each)	
iii) Mobile Hopper (1 No.)	
iv) Temporary hoppers (6 Nos.)	
6. Connectivity	1) Excellent road connectivity to NH4, NH5 & NH45 2) linked to Chennai-Kolkata BG main line. 3) Connectivity to Chennai airport.

The port in 2017-18 reported a handling capacity of 26 million tonnes.

Salient Features of Kamarajar Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves provided (sq m)	Stacking area
min.	max.				
-	16	3	-	-	-

Wharfage

Wharfage charges (mineral-wise) levied by Kamarajar Port during 2016-17 & 2017-18 was as follows:

(In ` per tonne)

Commodity	2016-17	2017-18
Coal	130	130

The traffic handled during 2016-17 and 2017-18 is furnished below:

(In million tonnes)

	Export		Import	
Commodity	2016-17	2017-18	2016-17	2017-18
Coal	-	-	23.10	23.17

Development Plan/future development plan- Two coal berths with a capacity of 9 MTPA each with a draft of 18.5m CD to handle capesize vessels have been completed for the requirement of TANGEDCO (captive user). The top unloading facilities for coal handling have to be installed by TANGEDCO.

3.5 Chennai

The port at Chennai is an artificial harbour situated on the Coromandal coast in south-east India. The total traffic handling capacity of the Chennai port during 2017-18 was133.6 million tonnes. The largest size vessel that can be received at the port is in the range of 2,99,000 dwt, having a maximum 16.5 m draught and maximum 280 m overall length.

Salient Features of Chennai Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq.m)
min.	max.				
8.5	16.5	24	-	-	-

Development Plans

(i) Development of common Railway Yard inside the port, the work completed on 22.02.2018

(ii) Construction of Coastal Berth of Chennai Port. The work likely completion in August, 2018

(iii) Development of Paved Storage yards at Chennai Port for handling Export Cargoes. The work likely completion in August, 2018;

(iv)Balance work of modernisation of JD at position of JD4 & JD6. The scheduled date of completion of work is 17.09.2018; and (5) Contruction of Banker berth of Bharathi Dock. The scheduled date of completion of work is 13.09.19.

Future Development Plan

Conversion of JD East into Multi cargo berth (Est.cost: Rs. 110 Cr. & capacity 1 MTPA (Sagarmala Project) and (ii) Development of BD II back up area for additional container storage or Developing BD II berth and back up space as fully mechanised fertilizer terminal (Est.cost : Rs. 1000 Cr.& capacity 2 MTPA) Sagarmala project.

The traffic in mineral/ore/mineral-based commodities handled by the port (excluding commodities handled in containers) during 2016-17 and 2017-18 is given below:

(In '000 tonnes)

Commodity	Export		Import	
	2016-17	2017-18	2016-17	2017-18
Barytes	577	874	-	-
Dolomite	-	-	572	437
Limestone	-	-	1957	1259
Iron ore pellets	-	-	-	-
Gypsum	-	-	361	368
Bauxite	-	-	-	-

Wharfage

Cargo related wharfage charges levied by Chennai Port Trust w.e.f. 01.05.2019 were as follows:

(In ` per tonne)

Item	Rate (Foreign)
i) Asbestos, cement, clinker, sand and silica sand	46.92
ii) Crude oil	59.43
iii) Granite blocks, dressed marbles and slabs	81.32
iv) Ingots & billets, sheet & plates, bars, rods, angles, pipes,	93.83
v) Ores and minerals of all kinds (excluding iron ore pellets) in bulk for import.	46.92
vi) Ores and minerals of all kinds (excluding iron ore pellets) in bulk for export.	27.11

3.6 V. O. Chidambaranar (formerly Tuticorin)

V.O. Chidambaranar Port is situated in Thoothukudi (formerly Tuticorin) on the eastern coast of Tamil Nadu. It has two operating wings viz, Zone A, comprising new major port and Zone B, representing old anchorage port. The largest size of vessel that can be received at the port is 82,629 dwt. The port in 2017-18 (As on 31-03-2018) reported a total handling capacity of 79.20 million tonnes.

Salient Features of V.O. Chidambaranar Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
min.	max.				
5.85	13.00	15	–	–	1) 4 Ware-houses of 19,550 sq m. 2) 2 Transit sheds of 10,800 sq. m open area and 5,53,000 sq.m 3) open area container of 54,000 sq.mt.

The traffic in mineral/ore/mineral-based commodities handled by the port during 2016-17 and 2017-18 is as under:

(In tonnes)

Commodity	Exports		Imports	
	2016-17	2017-18	2016-17	2017-18
1. Garnet sand	35511	-	-	-
2. Ilmenite sand	198315	-	19903	66937
3. Copper (concentrate)	-	-	1229382	1278555
4. River sand	-	-	-	55,444
5. Other ores	-	-	-	5,360
6. Dolomite	-	-	-	21,225

Wharfage Charges (Foreign)

Wharfage charges levied by V.O. Chidambaranar Port during 2017-18 was as follows.

(In ` per tonne)

Sl.No.	Commodity	2017-18
1.	Garnet sand	24.26
2.	Ilmenite sand	24.26
3.	Copper concentrate	70.24
4.	River sand	22.99
5.	Other ores	24.26
6.	Dolomite	53.63

Development Plans

V.O. Chidambanar Port Trust, Tuticorin awarded the Project for an amount of Rs. 23.69 Crore on 03.06.2016. The project consist of development of parking, administrative office building, dormitory,

canteen, workshop & toilet facilities and it was completed on 6.12.2018. V.O.C. Port has constructed a dedicated coastal cargo berth at a cost of Rs. 38.41 Cr. to promote coastal shipping and to handle coastal cargo and it was completed on 19.12.2017 which increases capacity addition of 2.00 MMTPA . It is capable to cater to 15,000 DWT vessel for a draft of 9.00 m.

The berth has been designed for handling vessels upto 15,000 DWT having a draught of (-) 9.00m. But the average available depth in the dock basin area in front of the berth is (-) 4.40m. In order to handle the designed vessel in the berth, the dock basin area has to be drafted upto (-) 10.00. The total dredged quantity is 3,47,210.30 cu.m. with which an area of around 75,000 Sq.m. has been reclaimed.

WEST COAST

3.7 Deendayal Port Trust (formerly Kandla Port Trust)

This port is a protected natural harbour situated on the western coast of Gujarat in the Kandla Creek and is 90 km from the mouth of the Gulf of Kachchh. It is the largest port of India by volume of cargo handled in 2017-18.

Salient Features of Kandla Port

	Draught (m)		No. of berths	No. of moor-ings	No. of wharves provided	Stacking area (sq m)
	min.	max.				
Dry cargo	9.10	12.00	2*	-	12	There is no special stacking area for mineral commo-dities
Liquid cargo	10.00	10.70	6	5	6	-

** Includes 2 cargo berths operated by private operator*

In the port there are 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, two Essar product jetties to handle POL carriers for export at Vadinar and a minor port Tuna, 24 km south of Kandla for handling country crafts. Barge handling operations for coal and fertilizer vessels are undertaken. A Bunder basin for handling barges and country crafts is in operation.

The total traffic handled by the Kandla port during 2017-18 was 110.10 million tonnes.

Wharfage

Wharfage levied by Kandla Port Trust as on 1.5.2019 was as follows:

(In ` per tonne)

Commodity	Coastal Rate	Foreign Rate
Liquid cargo		
i) Crude oil	19.80	19.80
ii) LPG (per cu m)	82.51	137.52
iii) POL products	55.01	55.01
Fertilizer and raw material including sulphur	22.18	36.96
Cement & clinker	14.85	24.75
Ores and minerals (in all forms)	11.14	18.56
Granite and marbles	14.85	24.75
Metal (ferrous/non-ferrous) (including pipes, plates, pig iron, coil, sheet)	24.75	41.26
Metal scrap	29.70	49.51
Construction materials and sand	11.14	18.56
Coal and coke (including firewood)	16.63	27.72
Salt	9.90	16.50
Dry chemicals including soda ash	14.85	24.75

Note: *In addition to the above rates, cargoes other than bulk; i.e., break-bulk and non-containerised shall be charged @ `19.80 per tonne for foreign and ` 11.88 per tonne for coastal cargo.*

3.8 Mumbai

Mumbai port is a natural deepwater multi-purpose port that handles all types of cargo-liquid bulk, dry bulk, break bulk and container. Salient features of Mumbai port are as follows:

Salient Features of Mumbai Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
8.84	14.30	32	-	NA	No dedicated area earmarked for storage of mineral

The total traffic handling capacity of the Mumbai port during 2017-18 was 62.83 million tonnes as compared to 63.05 million tonnes during the preceding year. The traffic in mineral/ore/ mineral-based commodities handled in 2016-17 and 2017-18 was as under:

(In thousand tonnes)

Commodity	Export		Import	
	2016-17	2017-18	2016-17	2017-18
Iron & Steel	837	785	3123	3060
Coal	-	-	2445	2473
Fertilisers	-	-	256	225
Rock Phosphate	-	-	27	63

Figures rounded off

Wharfage

Wharfage levied by the Mumbai Port w.e.f. 01.05.2019 was as below:

(In ` per tonnes)

Sr. No.	Commodity	Foreign		Coastal	
		Dry Bulk	Other than dry Bulk	Dry Bulk	Other than dry Bulk
1.	Asbestos	-	62.34		37.4
2.	Materials, Sand	67.24	62.34	40.34	37.4
3.	Cement,Clinker	67.24	62.34	40.34	37.4
4.	Coal and Fire Wood	93.54	86.73	93.54	86.73
5.	Sulphur, Fertilizers and Fertilizer raw material	84.1	77.97	50.45	46.78
6.	Granites and Marbles	-	62.34	-	37.4
7.	Ores, Ore Pellets and Minerals (other than Iron Ore & iron ore pellets	67.24	62.34	40.34	37.4
8.	Iron ore and Iron ore pellets	67.24	62.34	67.24	62.34
9.	Metals (Ferrous, Non ferrous) in the form of ingots billets and unmanufacture	67.24	62.34	40.34	37.4
10.	Crude Oil	-	66.03	-	66.03
11.	Salt	8.47	7.85	5.08	4.71
12.	Iron and steel material (excluding scrap, dross, ores)				
	Import		216.83		130.1
	Export		144.55		86.73

3.9 Mormugao

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

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

The total traffic handling capacity of the Mormugao port during 2017-18 was 34.40 million tonnes. The largest vessel that can be received at Berth No. 6 of this port is about 2,09,956 dwt.

Salient Features of Mormugao Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
-	14.00	1	-	-	1) 80,000 sq m (Berth No.6) for iron ore (attached to Berth No. 6) 2) 31,000 sq m (at berth Nos. 5 & 6) for coal & coke 3) (Approx. 35,641sq m at berth No 7 for coke and coal.

The demand for mooring dolphins, particularly during monsoon period is heavy and also for export of iron ore through this facility.

Ore ships are also loaded in mid-stream by transhippers and floating crane which are owned and operated by private parties. Ore ships are also loaded by ship's gears. At West of Breakwater (WOB), there is no draft restrictions to load ore vessels. Six Mooring Dolphins capable of accommodating Panamax size vessels are available for handling ore, coke and coal and other cargo using ship's own gears. Ore loaded at these facilities is brought by barges from hinterland through inland waterways. Import cargo at this position is unloaded in barges.

Development of the port as undertaken during 2017-18 is detailed as below:

Marmugao Port has taken up the work of "Capital dredging of the approach channel, turning circle, berth 5,6,7 and approaches to handle cape size vessels. The scope of the work is to deepen outer channel from (-) 14.4 m depth from CD to (-) 19.8 m depth from CD and inner channel from (-) 14.10 m depth from CD (-) 19.8 m depth from CD. The capacity addition will be 2.00 MMTPA in 2015-16.

Development Plans

Redevelopment of Berth nos. 8, 9 and Barge Berths at the Port of Mormugao Goa.

The existing MOHP dedicated for iron ore export is more than 35 years old. There was a ban for iron ore export from the year 2012 which has been lifted few moths back with a cap on production of 20 MMTPA in the State of Goa. In the mean time, Port has changed its traffic profile for handling of multi commodity cargo which includes Coal, Steel Coils, Woo Chips and other bulk cargo. The existing berth nos. 8, 9 and barge berth will be developed to handle multi commodity. The berth length to be developed is 1,050 m. The estimated project cost of the project is about ` 1,145 crore and capacity will be 19.22 MMTPA. The Concession Agreement is signed with M/s Goa Sea Port Pvt. Ltd on 22.09.2016. These berths are expected to be completed and commissioned by year 2020 (Phase I and Phase II will be completed in March, 2022).

The port is handling general cargo at Berth No. 10 & 11. Due to limitation in area for future expansion and handling of general cargo and specially coastal cargo, it is proposed to develop dedicated berths at Vasco Bay. The total traffic handled by the Mormugao Port during 2016-17 and 2017-18 was as follows:

(In tonnes)

Commodity	Export		Import	
	2016-17	2017-18	2016-17	2017-18
Iron ore	14722851	9925112	330282	333712
Bauxite	-	-	-	-
Coke	-	-	1774107	383861
Coal	-	-	10979563	10512681

Wharfage

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) rate levied by Mormugao Port Trust in 2017-18 was as below:

(In ` per tonne)

Sl. No.	Commodity	Foreign Rate	Coastal Rate
1.	Iron ore	24.00	24.00
2.	Iron ore pellets	27.00	27.00
3.	Bauxite	27.00	16.20
4.	Nickel/Alumina/ Bentonite	42.00	25.20
5.	Pig iron/ Slag	48.00	28.80
6.	Thermal coal and its variants	55.00	55.00
7.	Coke of all types	55.00	33.00
8.	Fertilizer and fertilizer raw material	50.00	30.00
9.	Metal Scrap of all types	55.00	33.00

Iron Ore and iron ore pellets handling charges (exported through MOHP at Berth No. 9) in 2017-18 are as under:

(In ` per tonne)

Sl. No.	Description of Goods	Import/ Export rate per tonne or part thereof	Remarks
1.	Iron ore	118	At MOHP B.No.9
2.	Iron ore pellets		
	(i) During the period	127	During June to Aug.
	June to August each year	223	During Sep. to May

3.10 New Mangalore

The port has a modern all weather artificial lagoon situated at Panambur, Mangalore in Karnataka on the west coast of India. The port handled 42.06 million tonnes of cargo during 2017-18. In 2017-18, the total capacity of the port was 98.00 million tonnes. The largest vessel that could be received at this port was 90,000 tonnes.

Salient Features of New Mangalore Port

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
7.0	14.0	15	-	-	58391 open

The traffic in mineral/ore/mineral-based commodities handled in 2015-16 and 2016-17 was as follows:

(In tonnes)

Commodity	Export		Import	
	2015-16	2016-17	2015-16	2016-17
Iron ore fines	-	-	128940	1482944
POL	5683060	5735912	18247727	19368702
Rock phosphate	-	-	53320	37200
Laterite	17664	-	-	-
Gypsum	-	-	330178	79060
Limestone	-	-	-	93550
Coal	92180	80824	6276894	6838840
Sulphur	26000	425000	-	-

Wharfage

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) levied by New Mangalore Port w.e.f. 13.05.2016 to 31.03.2019 was as follows:

(In ` per tonne)

Commodity	Foreign Rate	Coastal Rate
Iron ore (fines)	32.38	32.38
POL	68.89	68.89
Thermal Coal	24.61	24.61
Coal (other than thermal coal) & coke	24.61	14.77
Gypsum	29.53	17.72
Limestone	34.45	20.67
Bauxite	34.45	20.67
Rock Phosphate	39.37	23.62
Sulphur	59.05	35.43

3.11 Cochin

The traffic handling capacity of the port in 2017-18 was 73.6 million tonnes. The largest size vessel that can be received at this port is 1,14,683 dwt at berth and 3,20,411 dwt at SBM.

Salient Features of Cochin Port

Draft (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq m)
min.	max.				
9.14	14.50	20	1	2	1.25 lakh

The Cochin Port Trust handled 29.14 MMT of cargo during 2017-18 against 25.01 MMT during 2016-17.

The total traffic handled by the Cochin port during 2016-17 and 2017-18 were as under:

(In '000 tonnes)

Sl.No.	Mineral/ore	Exports		Imports	
		2016-17	2017-18	2016-17	2017-18
1.	Crude	50	40	12028	14171
2.	Bauxite	-	-	12	13
3.	Coal	-	-	44	44
4.	Sulphur	-	-	149	102
5.	Rock phosphate	-	-	85	86
6.	Salt	-	-	105	94
7.	Ilmenite sand	-	-	-	38
8.	River sand	-	-	-	133

Figures rounded off

The port is fast emerging as a cement hub having cement handling terminals.

Wharfage

Wharfage levied by the Cochin Port w.e.f. 01.09.2018 was as follows:

(In ` per tonne)

Sl. No.	Commodity	Foreign Rate	Coastal Rate
1.	Construction and building materials-		
	(a) Sand, stones, Granites & marbles	53.79	32.27
	(b) Cement	90.42	54.31
	(c) Clinker, clay, chalk	82.86	49.76
2.	(a) Coal/coke	57.93	34.76
	(b) Thermal coal	57.93	57.93
3.	Fertilizer and fertilizer raw material at Q 10 Berth		
	(a) Sulphur	70.55	42.41
	(b) Rock phosphate	64.86	39.00
	(c) Finished fertilizers	58.97	35.38
4.	Metals and metal products	115.86	69.52
5.	Metal scrap	93.11	55.86
6.	Liquid Cargo		
	(a) Crude oil - SBM	25.0	25.0
	(b) POL products at Port Berth	106.55	106.55
	(c) Liquid ammonia	147.7	88.66
	(d) Sulphuric Acid	135.62	81.41
	(e) Phosphoric acid	135.6	81.42
	(f) Petrochemicals	124.34	74.69
7.	Minerals & ores		
	(i) Zinc concentrate	90.42	54.31
	(ii) Others	82.86	49.76
8.	Salt	25.96	15.62
9.	Petroleum coke	57.93	34.76

*Reply received from Cochin Port Trust for the year 2017-18

Development Plans

The project "Refurbishments of South Tanker Berth for laying Heat traced pipeline for BPCL-KR at Cochin Port" is planned for handling plant fuels for BPCL-KR by laying heat traced pipeline.The work commenced on 22.2.2018 and scheduled date of completion of the work is 21.10.2018.

Cochin Port Trust and Indian Oil Corporation are jointly developing a 4.10 MMTPA Oil-cum-LPG Jetty at Puthuvypeen. When complete it can berth vessels with LOA upto 230m., 13 m draft and 80,000 DWT. The Jetty will also serve as an International Bunkering Terminal for supplying bunkers to vessels calling at the port as well as at the anchorage. The project is to be completed by August, 2018.

Though cochin port does not handle minerals/ ores significantly, the Port has commissioned automated cement terminals with facilities for bagging and dispatch.

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

JNPT does not have any facility to handle ore/mineral separately. JNPT has become a world class international container handling port. The traffic handling capacity of JN Port Trust as on 2017-18 was 88.00 million tonnes.

Salient Features of Jawaharlal Nehru Port

Draft (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
min.	max.				
10	14	12	Nil	Nil	No area ear-marked for minerals inside port

About 1419618 tonnes and 1444234 tonnes of crude oil was handled during the year 2016-17 & 2017-18, respectively. However, the Port does not have storage facility for crude oil.

Development Plans

The Bharat Mumbai container Terminals Pvt. Ltd (PSA) was awarded the development of Fourth Container Terminal on DBFOT basis through a concession Agreement on sixth May 2014.BMCT is India's largest FDI project in the Port sector, with an estimated investment, of INR Rs. 7,935 crores spread over eight years. The project comprises of two phases - each phase comprises 1 km of quay line, 16.5 mtrs depth of berth, 12 quay cranes, 46 RTG yard cranes and 4 RKGC cranes for its rail yard generating a capacity of 2.4 million TEU (Total 4.8 MTEU). As per schedule, the work of Phase I is completed on 22nd December, 2017 and put to operation. The Phase II is in progress and schedule date of completion is December 2022.

In order to give momentum to coastal shipping, JNPT is constructing 250 m long coastal Berth with backup area reclamation of 11 hectares. Dredging to achieve dreadged depth of 11m at Berth pocket backside of the berth is also proposed for handling port crafts with dredged depth of 6m below CD. Capacity for handling liquid cargo of 1.5 MTPA and General coastal cargo of 1 MTPA. The work is awarded to M/s RKEC Projects Ltd and schedule of date of completion of project is 23rd May, 2020.

To cater to the future traffic, JN Port through implementing agency NHAI, has awarded the work of widening of 43.9 kms. Length of NH 4B, SH 54 and Amra Marg Linkages to 6/8 lanes along with two lanes service roads by SPV formed by JNPT, NHAI and CIDCO. This project will be executed on EPC mode in 4 civil packages and it is expected that the widened highways will be ready in this year.

J.N. Port has taken up the work of development of Port Based SEZ in 277 hectares. The EPC contract to develop basic infrastructure at cost of `476 crore is awarded on 07.10.2016 and work is in progress.

In Jan, 2018, JNPT achieved a key milestone by allocating the first 6 land parcels in the SEZ, totalling 15 acres, two companies from the Micro, Small & Medium Enterprise (MSME) segment via. Tender-cum-auction methodology.

To boost the hinterland traffic, it has been decided to develop Dry Ports at Jalana & Wardha. Port has purchased 15 Nos. of e-RTGC's at a cost of ` 160 crores and same are in use since November 2017. J.N. Port has also awarded the work of widening and deepening of the channel to M/s Boskalis Smit India on 31st March, 2017 with a completion period of 2 years.

In addition to the existing parking areas at J.N.Port, port is developing centralised parking plaza, admeasuring 45 ha. The work has been commenced in March, 2017 and it is expected to be completed in 18 months (Table - 1).

Table-1: PPP Projects Under Implementation/ Operation in Major Ports

Sl. No.	Projects/Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
Projects under Implementation: (As on 31.01.16)			
Chennai Port			
1.	Development of Barge jetty at Bharathi Dock	27.29	1.35
Jawaharlal Nehru Port Trust (JNPT)			
2.	Development of standalone container handling facility with a quay length of 330 m North of NSICT Terminal	600.00	9.60
3.	Development of Container Terminals of 2000 m Length at JNPT (4th Container terminal)	7915.00	60.00
4.	Special Economic Zone	4000.00	6.00
Kamarajar Port Ltd (Ennore)			
5.	Upgradation of the existing Non-TNEB Coal Terminal developed by M/s Chettinad International Coal Terminal Pvt. Ltd	351.08	8.00
6.	Development of LNG Terminal by IOCL	4512	5.00
7.	Development of Container Terminal	1270.00	16.80
8.	Development of Multi-Cargo Berth	151.00	2.00
Kandla Port Trust			
9.	Development of Oil Jetty to handle liquid cargo ship bunkering Terminal	233.50	3.39
10.	Development of SPM in OOT	448.00	25.00
11.	Construction of Oil Jetty No.7 on BOT basis for liquid cargo.	72.00	2.00
Kolkata Port Trust			
12.	Development of Haldia Dock II (North)	821.40	11.70
13.	Floating Storage & Regasification Unit (FSRU)	3500.00	4.00

(contd.)

(Table-1 Contd.)

Sl. No.	Projects/ Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
Mumbai Port Trust			
14.	Construction of Offshore Container Berths and Development of terminal on BOT basis at Mumbai Harbour	2098.56	9.60
15.	Facilities for handling & storage of Bulk Cement and Bagging Plant at Petroleum Godown Plot at	95.00	1.25
16.	Bunkering Terminal	50.00	2.00
Paradip Port Trust			
17.	Construction of Deep Draft Coal Berth at Paradip	479.01	10.00
18.	Development of Clean Multi-cargo Berth in Southern Dock	387.31	5.00
19.	Development of Deep Draft Iron Ore Berth	740.19	10.00
20.	Supply, installation of 3 Nos. of 100 tonnes HMC	117.00	3.00
Visakhapatnam Port Trust			
21.	Development of EQ-1A in East Docks	313.39	7.36
22.	Installation of Mechanised handling facilities for fertilizers at EQ 7 in the Inner Harbour	217.58	3.33
23.	Installation of Mechanised Iron Ore handling facilities at WQ-1 in the northern arm of Inner harbour of VPT for handling Dry bulk cargo and Modernisation of Ore Handling Complex	940.00	23.70
24.	Container Terminal expansion	633.11	7.56
25.	Multi Modal Logistic Hub	400.00	0.00
26.	Establishment of Container Freight Station through existing BOT operator by VCTPL	100.00	0.90
VOC Port Trust, Tuticorin			
27.	Construction of Coal Berth at NBW for NLC-TNEB	49.50	6.30
28.	Construction of North Cargo Berth-II	332.16	7.15
29.	Construction of Shallow draft berth for handling cement	84.08	2.67
30.	Development of NCB-IV for handling thermal coal & copper concentrate	355.00	9.15
31.	Development of NCB-III for handling thermal coal & rock phosphate	420.00	9.15
32.	Development of facilities for handling thermal coal for SPIC Electric Power corpn. Pvt. Ltd (SEPC)	214.50	2.50
33.	Mechanisation of cargo evacuation from 9th Berth to Coal Yard at the existing Coal Yard	76.25	3.67
34.	Mechanisation of cargo to transfer from VOC wharf-4 Berth to Wagon/ Truck loading system and mechanisation	24.68	3.19

(Contd.)

(Table-1 Contd.)

Projects under Operation:(As on 15.01.2016)

Sl. No.	Projects/ Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
Chennai Port Trust			
1.	Container Terminal-1	788.18	6.00
2.	Development of 2nd Container Terminal	495.00	9.60
3.	Supply, Operation and Maintenance of 2 nos. of 100 T Mobile Harbour Cranes on Revenue Share Basis	62.57	5.00
Cochin Port Trust			
4.	Crude Oil handling facilities	720.00	13.00
5.	Vallarpadam Container Terminal ICTT	2118.00	40.00
6.	LNG Terminal	4150.00	5.00
7.	Facilities for cement bagging plant by M/s Zuari cement (on Land Lease Model)	147.00	-
JLN Port			
8.	Container Terminal, NSICT	750.00	13.20
9.	BPCL Jetty (Captive)	200.00	5.50
10.	Third Container Terminal	1078.00	15.60
Kamarajar Port Ltd (Ennore)			
11.	Marine Liquid Terminal	252.00	3.00

(Contd.)

(Table-1 Contd.)

Sl. No.	Projects/ Development	Estimated Cost (In ` crore)	Capacity (MMTPA)
12.	Development of an Iron Ore Terminal on BOT basis	480.00	12.00
13.	Development of Coal Terminal for users other than TNEB on BOT basis	399.00	8.00
	Kandla Port Trust		
14.	Development of 13th Berth other than liquid and container cargo berth	188.87	1.50
15.	Development of 15th Multipurpose Cargo berth at Kandla	188.87	1.50
16.	Oil Jetty for IOCL (Captive)	20.70	2.00
17.	Container Freight Station	41.07	3.00
18.	Oil Jetty related facilities at Vadinar (ESSAR) (Captive)	750.00	13.50
19.	Fifth Oil Jetty (IFFCO) (Captive)	27.67	2.00
20.	Dry Bulk Terminal Off Terka near Tuna on BOT basis (Outside Kandla Creek)	1060.00	14.11
21.	Setting up of Captive Barge Jetty at old Kandla (IIFCO)	27.00	1.50
	Kolkata Port Trust		
22.	Multipurpose Berth No.12	35.00	1.12
23.	Multipurpose Berth No.4A	150.00	2.00
	Mormugao Port Trust		
24.	Development of Coal Handling Terminal at Berth No.7	406.00	4.61
25.	Bulk Cargo berths No. 5A & 6A	250.00	5.00
	New Mangalore Port Trust		
26.	Setting up of Bulk Cement Handling facility for M/s Ambuja Cement Ltd (Captive)	98.00	1.00
27.	Construction of Captive Jetty for handling Coal by M/s NPCL	230.00	3.00
	Paradip Port Trust		
28.	Captive fertilizer Berth to PPL	20.00	4.00
29.	Captive fertilizer Berth to IFFCO	26.17	4.00
30.	Construction of SPM Captive Berth	500.00	15.00
31.	Mechanisation of Cargo Handling Project-1	37.32	2.00
32.	Mechanisation of Cargo Handling Project-2	25.13	2.00
33.	Mechanisation of Central Quay-III Berth	40.00	6.00
	Visakhapatnam Port Trust		
34.	Multipurpose Berths-EQ-8 & EQ-9	320.29	6.47
35.	Container Terminal, Outer harbour	86.35	5.60
36.	Establishment of Multi Modal Logistic Park	372.00	1.00
37.	Development of Western Quay (WQ-6) in the northern arm of inner harbour of VPT for handling dry bulk cargo	114.50	2.00
38.	Development of WQ-10 in inner harbour for handling liquid cargo	55.38	1.84
39.	Mechanised Coal handling facilities at General Cargo Berth (GCB) in the outer harbour	444.10	10.18
40.	Single Point Mooring - Captive facility developed by H.P.C.L.	643.46	8.00
41.	Development of EQ-1 in East Docks	323.18	5.25
	VOC Port Trust, Tuticorin		
42.	Development of 7th Berth as Container Terminal	135.00	5.00
43.	Berth No.8 Container Terminal	54.00	2.23
44.	Grant of license for deployment of floating cranes V.O. Chidambarnar port water limits for handling the cargo in the vessel	70.71	2.49
45.	Upgradation of Mechanical handling equipment in Berth No.1 to Berth No.6 and Berth No.9	49.20	8.72

(Table-1 Concld.)

Source: Indian Port Association

5. NON-MAJOR PORTS

The available information on traffic handled by non-major ports during 2016-17 and 2017-18 is furnished in Table-2 and that of facilities for handling and transporting minerals from selected non-major ports are furnished in Table-3.

There are 205 notified non-major ports in the country controlled by State Governments and Union Territories. These are in Gujarat (46), Maharashtra (48), Goa (5), Karnataka (9), Kerala (17), Tamil Nadu (16), Andhra Pradesh (12), Odisha (13), West Bengal (1), Daman & Diu (2), Lakshadweep (10), Puducherry (3) and Andaman & Nicobar Islands (23). In 2015-16, only 70 non-major ports were reported to have handled cargo traffic. The contribution of non-major ports traffic to total traffic rose to 42 percent in Financial Year 2018.

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 development of their ports through private investments.

Gujarat Maritime Board (GMB), a statutory body of Government of Gujarat, is responsible for management, control and administration of 46 ports in Gujarat state. These ports under jurisdiction of GMB are grouped into 10 ports.

In Maharashtra, the State Government has encouraged development of its Port Sector and adopted an investor-friendly port policy. To meet the requirements of India's growing economy and to address the need of its Industry, Maharashtra Maritime Board (MMB) has entered into six concessions agreements for development of minor ports, namely, Rewas-Awaare Port, Dighi Port, Jiagad Port (Lavgan), Vijaydurg Port, Redi Port, etc.

In addition, Andaman Lakshadweep Harbour Works (ALHW) (a subordinate office of Department of Shipping, Government of India) has been entrusted with the responsibility of providing port and harbour facilities in Andaman & Nicobar and Lakshadweep Islands.

Table-2: Traffic Handled at Non-major Ports 2016-17 and 2017-18

(In million tonnes)

Commodity	2016-17	2017-18
i) POL	186.07	193.42
ii) Iron ore	34.45	36.60
iii) Building material	15.17	15.59
iv) Thermal Coal & Coking Coal	133.76	146.68
v) Fertilizers (including Raw Materials)	14.24	11.71
vi) Others	101.53	125.09
Total	**485.22**	**529.09**

Source: *Update on Indian Port Sector (31.03.2016), Transport Research Wing, Ministry of Road Transport & Highways, Government of India.*

Table – 3: Facilities for Handling & Transporting and Mineral Commodities Handled at Selected Non-major Ports, 2015-16 and 2016-17

State/ Port	Facilities for Handling & Transporting						Mineral commodity handled (in tonnes)				
	Traffic Handled ('000t)	Draught max. (m)	No. of wharves	No. of berths (sq m)	Stacking capacity received ('000 dwt)	Largest vessel	Commodity	Export		Import	
								2015-16	2016-17	2015-16	2016-17
WEST COAST GUJARAT											
Bhavnagar	2500	3.5	1	1	225000	79710	Coal	-	-	1180166	539790
							Limestone	-	-	930372	997602
Bedi	337	14	-	-	10000	206030	Bauxite	3100658	337741	-	-
Dahej Harbour and Infrastructure Ltd	NA	13.0	-	1	62500	70000	Coal	-	-	438000	304367
							Rock-phosphate	-	-	590000	427826
							Copper-concentrate	-	-	1437000	1269294
							Copper slag	22000	151320	-	-
Jafarabad	40	9	-	1	-	56512	Cement-clinker	3196438	3596628	-	-
							coal	-	-	104065	325407
Magdalla Surat	NA	12	01	11	30129	188627	Coal	49500	-	6729385	6020940
							Iron ore	-	-	5667945	8659148
							Limestone	-	-	859150	1414410
							Iron ore fines	-	-	348127	258589
Navalakhi	4000	5.0	-	5	205742	179937	Salt	449025	1020387	-	-
							Coal	-	-	6253386	6141839
							Cement	-	-	62474	85394
Okha	4469	8.0	2	2	5000	-	Bauxite	2921750	1599088	-	-
							Limestone	-	-	1025759	924635
							Coal	-	-	8319177	695564
Pipavav	NA	14.5	-	5	-	90000	Fertilizer	-	-	1233285	1003353
							Others	168740	22964	1324050	1375674
Porbandar	NA	7.5	NA	2	-	145512	Coal	-	-	4190000	4520000
							Bauxite	16960000	5570000	88-	
Adani Hazira Port	NA	14	1	3	-	-	Gypsum	-	-	282598	147300
Alang Bhavnagar	-	-	-	-	-	-	Clinker	-	-	5219	-
Adani Dahej	8190	15.4	-	2	-	70000	Coal	-	-	12276000	-
							Rock phosphate	-	-	300000	-
							Silica sand	-	-	NA	-

(Contd.)

Table - 3 (Contd.)

State/ Port	Facilities for Handling & Transporting						Mineral commodity handled (in tonnes)				
	Traffic Handled ('000t)	Draught max. (m)	No. of wharves	No. of berths (sq m)	Stacking capacity received ('000 dwt)	Largest vessel	commodity	Export		Import	
								2015-16	2016-17	2015-16	2016-17
Mandvi Port	NA	4.0	1	1	-	63446					
Jakhau Port	NA	6.0	-	4	-	71549	Cement	146592	174401	-	-
							Coal	-	-	385641	277928
							Salt	1866608	1922051	-	-
Mundra	NA	7.30	1	1	-	-	-	-	-	-	-
KARNATAKA											
Karwar	599	6.5	NA	NA	NA	NA	-	-	-	-	-
Kundapura	NA	4.50	700	2	1200	2000	-	-	-	-	-
MAHARASHTRA											
Dahanu	NA	6.0	-	1	-	-	Coal	-	-	455561	NA
Dharamtar	9890	5.5	NA	9	160000	NA	Iron ore	-	-	NA	NA
							Iron ore pellets	-	-	NA	NA
							Limestone	-	-	NA	NA
							Coal	-	-	NA	NA
							Rock Phosphate	-	-	NA	NA
							Dolomite	-	-	NA	NA
							Bauxite	NA	-	-	-
Dighi	NA	9	NA	2	4000	NA	Bauxite	213553	-	-	-
Jaigarh	NA	14	NA	2	2000	NA	Bauxite	280100	-	-	-
							Iron ore	1002558	-	NA	NA
							Limestone	-	-	NA	NA
							Coke	-	-	NA	NA
							Coal	NA	NA	NA	NA
Kelshi	NA	15	NA	NA	NA	NA	Bauxite	NA	-	NA	NA
Ratnagiri	710	5	NA	1	NA	NA	Clinker	NA	-	NA	NA
Redi	NA	4	NA	NA	NA	NA	Iron ore	1513789	-	-	-
Revdanda	1340	4	NA	4	NA	55000	Iron ore	52499	NA	NA	NA
Bankot	NA	NA	NA	NA	NA	NA	Bauxite	-	NA	-	-
EAST COAST											
ANDHRA PRADESH											
Kakinada # (Anchorage Port)	2070				NA		NA	NA	NA	NA	NA

(Contd.)

Table - 3 (Concld.)

State/ Port	Facilities for Handling & Transporting						Mineral commodity handled (in tonnes)				
	Traffic Handling ('000 t)	Draught max. (m)	No. of wharves	No. of berths	Stacking capacity received (sq m)	Largest vessel ('000 dwt)	commodity	Export		Import	
								2015-16	2016-17	2015-16	2016-17
EAST COAST											
ANDHRA PRADESH (Concld.)											
(Kakinada Deep water Port)	3 ships 17960	NA	NA	NA	NA	NA		NA	NA	NA	NA
Krishnapat-anam	40740	18	-	9	2560000	200	Iron ore	NA	NA	-	NA
							Gypsum	-	-	NA	NA
							Barytes	NA	NA	-	-
							Clinker	-	-	-	-
							Feldspar	NA	NA	NA	-
Rawa	1300	-	-	-	-	-	-	-	-	-	-
TAMIL NADU											
Cuddalore	260	@	-	-	80000	@@	-	-	-	-	-

Source: *Basic Port Statistics of India,2016-17.*

@ not applicable being a roadstead port.

@@ Any size being an anchorage port.

 # Two ports, namely, 1. Kakinada Anchorage Port under Govt. of Andhra Pradesh and 2. Kakinada Deep water Port under private organisation M/s Kakinada Sea Port Ltd, in East Godavari district at Kakinada, Andhra Pradesh.

5. PRIVATE PORTS

5.1 Major Development Projects International Container Trans-shipment Terminal (ICTT) at Vallarpadam

The International Container Trans-shipment Terminal (ICTT), Vallarpadam is India's first dedicated International Container Trans-shipment Terminal. It was developed by Cochin Port Trust and M/s India Gateway Terminal Pvt. Ltd (IGT), a subsidiary of M/s Dubai Ports World (DPW) through a Public-Private Partnership on Build- Operate-Transfer (BOT) basis. It was dedicated to the nation on 11th February, 2011. Container handling charges at nearby Vallarpadam terminal are likely to go down with stakeholders deciding that all terminal related charges will be billed directly to the exporter or importer by M/s DPW from 1st January 2015.

A decision in this regard was reportedly taken at a meeting of various stakeholders held in October 2014 convened by the Cochin Port Trust.

5.2 Adani Ports and Special Economic Zone Limited (APSEZ)

Mundra Special Economic Zone (Mundra SEZ) is located on the western coast of India in the Gulf of Kachchh, within the State of Gujarat. Mundra Port is the gateway for cargo to the Northern hinterland and has increasingly become the gateway for Indian exports.

Mundra SEZ is India's largest notified, operational multi-product SEZ with state-of-the-art infrastructure and is planned to be spread over 15,000 ha. Currently, notified multi-product SEZs are spread over an area of 6,473 ha. The zone also has in addition a Free Trade and Warehousing Zone (FTWZ) spread over 168 ha. Leveraging the advantage of the robust port infrastructure, Mundra SEZ offers the best investment opportunity for diversified industries.

Mundra SEZ has the potential to offer developed industrial clusters for small/medium projects as well as facilitate the mega projects with the desired land parcel, along with an excellent logistic connectivity, power reliability and other utilities.

Infrastructure being the key to the SEZ development, emphasis has been to develop/ augment core infrastructure facilities to attract investments.

Special features of Mundra SEZ are:

(1) India's Largest, Port - based, Notified and Functional, Multi-product SEZ.

(2) An integrated self-sustained zone with modern infrastructure and facilities.

(3) Mundra SEZ's multi-modal connectivity offers competitive logistic advantage with:

- In-zone Multi-purpose Port with Container Terminals.
- Fully mechanised efficient port with one of the lowest turnaround time in India.
- In-zone Road & Rail connectivity.
- Well connected with National & State Highways.
- 64 km Private Rail line connects Mundra to National Railway Network at Adipur near Gandhidham, Kachchh.
- 210 km rail network within the Zone.
- In-zone private Airstrip.
- Proposed International Air Cargo Hub.
- Integrated Infrastructure and Utilities.
- Well-developed commercial & social infrastructure for Living, Learning, Healthcare & Recreations.

5.3 Essar Ports

Essar Ports Ltd is one of India's largest Private Sector Port and Terminal Company by capacity and throughput.

The Company through its subsidiaries develops and operates ports and terminals for handling liquid, dry bulk and general cargo with an existing aggregate cargo handling capacity of 104 MTPA across the facilities located at Vadinar and Hazira in the State of Gujarat on west coast of India and Paradip in the State of Odisha on east coast of India. The facilities of Vadinar, Hazira and Paradip are used primarily for receipt of raw material, such as, crude oil, iron ore pellets, limestone, dolomite, coal and finished goods, such as, petroleum products and steel products.

Essar Ports has an existing aggregate capacity of 104 MTPA. The Company is in process of increasing its aggregate ports capacity to 194 MTPA. In addition, Essar has plans for 32 MTPA iron ore export terminal consisting of three berths at Visakhapatnam in the State of Andhra Pradesh.

5.4 Ongoing Private Sector/Captive/Joint Venture Port Projects (Non-Major Ports)

Sl.No.	Project Name	State/Ports Maritime Board	Capacity (million tonnes)	Project Cost (` in crore)
1.	Development of Mundra Port	Mundra (Gujarat)	185	12305
2.	Hazira Port Pvt. Ltd (HPPL)	Hazira (Gujarat)	2.50 (MMTPA)	1180.4
3.	Development of BGCT under phase IB at Hazira	Hazira (Gujarat)	30	186
4.	Development of Solid Cargo Port Terminal	Dahej (Gujarat)	15	980
5.	Captive jetty by Cairn Energy India Pvt. Ltd Bhogat Dist. Jamnagar	Bhogat (Gujarat)	7	1285
6.	Captive jetty by J.P. Associates Ltd, Jakhau Port	Jakhau Port	3	140
7.	Captive jetty by Essar Salaya Bulk Terminal Ltd	Salaya (Gujarat)	7	600

(Contd.)

(Table-5.4 Concld.)

Sl.No.	Project Name	State/Ports Maritime Board	Capacity (Million Tonnes)	Project Cost (` in crore)
8.	Captive jetty by ABG Cement Ltd	Hazira Mora (Gujarat)	2	100
9.	Captive jetty by M/s Essar Bulk Terminal Ltd - 1100 m (3rd Expansion)	Hazira (Gujarat)	25	2321
10.	Captive jetty by M/s Ultra Tech Cement Ltd - Expansion of Captive jetty at Kovaya	Kovaya Pipavav (Gujarat)	5	200
11.	Captive jetty by M/s Godrej - Ro Ro jetty for handling of ODC cargo at Dahej SEZ	Dahej (Gujarat)	1	5.9
12.	Captive jetty by M/s ISGEC - Ro Ro jetty for handling of ODC cargo at Dahej SEZ	Dahej (Gujarat)	1	5.9
13.	Demolition and reconstruction of Capt. of Ports jetty at Panaji	Panaji-Port, Goa	-	15.01
14.	Demolition of old existing jetty and reconstruction of new Capt. of Ports jetty at old Goa	Panaji-Port, Goa	-	20.36
15.	Establishing a captive port at Parangipettai by M/s IL&FS Ltd	Parangipettai, Tamil Nadu	13	1349
16.	Meghwaram Port	Meghwaram, Andhra Pradesh	Captive Port 4.70 MMT	600
17.	KSEZ	KSEZ, Andhra Pradesh	Captive Port 15.00 MMT	2500
18.	Phase-II-Development of Krishnapatnam Port	Krishnapatnam, Andhra Pradesh	44.30 (MTPA of non-container Cargo) 3.30 MTEUpa of Container cargo	10,800
19.	7th Berth	Kakinada Deep water Port, Andhra Pradesh	25	1320
20.	Dhamra Chandbali Port Project	Dhamra Port, Odisha	25 MMT	3639
21.	Development of Karaikal Port through private investment on BOT basis	Karaikal, Puducherry	Phase-2A 21.5	1600
			Phase-2AE 6.5	500
22.	Development of Puducherry Port through private investment on BOT basis	Puducherry	Phase-1 16.2	2785
			Phase-II 10.8	NA
23.	Construction of Captive jetty at Manki in Honnavar Taluka of U.K District by M/s Shree Renuka Energy Ltd, Belagavi	Manki, Karnataka	2.0 (3.5 in Future)	46
24.	Anchorage operations at Honnavar Port by M/s Honnavar Port Pvt. Ltd, Hyderabad.	Honnavar, Karnataka	4.99	511.3

5.5 Maritime Agenda 2010-20

In the Maritime Agenda, a target of 3,130 million tonnes Port capacity has been set for the year 2020. More than 50% of this capacity is to be created in the Non-major Ports. The Non-major Ports are expected to play a major role and by the year 2020, the traffic handled by Non-major Ports is expected to increase to 1,280 million tonnes. The objective is not only creating more capacity but to bring out ports at par with the best international ports in terms of performance. This will reduce the transaction cost considerably for our trade, thus making them globally competitive. The total proposed investment in Major and Non-major Ports by 2020 is expected to be around ` 2,77,380 crore. Most of this investment has to come from the private sector. Public Funds will be mainly deployed for common user infrastructure facilities like deepening of port channels, rail and road connectivity from ports to hinterland, etc. Foreign Direct Investment up to 100% under automatic route is permitted for construction and maintenance of ports.

The Ministry of Shipping is continuously engaged in designing and implementing various projects for development of Port Sector. To increase the pace of growth and to improve the efficiency of the delivery system, the Ministry of Shipping has come out with a Maritime Agenda 2010-20 for the next ten years. The Agenda is an effort to identify the areas for attention during 2010-11 to 2019-20.

The agenda for the Ports are:

- Develop two New Major Ports one each on east and west coasts.
- Full mechanisation of cargo handling and movement.
- Major Ports to have draft of not less than14 metres and hub ports 17 metres.
- Identification and implementation of projects for rail, road and inland waterway connectivity to ports.
- Development of two hub ports on each of the West and the East coasts.

FUTURE OUTLOOK

The Major Ports in India are witnessing sustained growth in the last few years, due to the vision of Ministry of Shipping . It has given the fillip to the Port Sector by introducing vital and long overdue futuristic Port led development Programmes including Sagarmala. The Ministry has intended on upgrading and developing the major ports of India on par with the International Ports.

India's port facilities are in for a major overhaul as development of ports and augmentation of capacities are significant for economic vibrancy and growth.