Indian Minerals Yearbook 2020

(Part- I : GENERAL REVIEWS)

59th Edition

PORT FACILITIES

(ADVANCE RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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October, 2022

6 Port Facilities

GENERAL

Growth

Ports are economic and service provision units of 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 World Bank publishes the Logistic Performance Index (LPI) in every two years. The LPI is an interactive tool created to help countries identify the challenges and opportunities arising in international trade logistics. India was ranked 44 out of 160 countries in 2018 vis-a-vis the rank of 54 in 2014. 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.

India has one of the largest merchant shipping fleets among the developing countries. During 2019-20, major and non-major ports in India have accomplished a total cargo handling of 1,319.97 million tonnes reflecting an increase of 3% over the corresponding previous year. The major ports accounted for around 53.4% of the total cargo handled at India's ports. The major ports in India have recorded a growth of 0.8 per cent and together handled 704.92 million tonnes of cargo during the period 2019-2020 as against 699.17 million tonnes handled during the previous year. Similarly, the non-major ports in India have recorded a growth of 5.6% with 615.05 million tonnes of cargo handled during 2019-20 as against 582.58 million tonnes during the previous year. The share of major port in total traffic handled in India decreased from 54.55% in 2018-19 to 53.4% in 2019-20. Six ports, namely, Haldia, Visakhapatnam, Paradip, Mumbai, Cochin and Deendayal also registered positive growth in traffic. Approximately, 95% of the country's trade by volume and 68% in terms of value are being transported through sea route.

Growth in Cargo Traffic at Indian Ports (In%)

	2017-18			2018-19			2019-20		
Port	OT	CT	TT	OT	CT	TT	OT	CT	TT
Major	2.07	15.13	4.78	1.54	7.51	2.90	2.32	-3.96	0.82
Non major	7.72	17.32	9.04	7.87	23.05	10.12	7.15	-2.44	5.57
All Ports	4.61	15.86	6.60	4.47	12.73	6.06	4.63	-3.41	2.98

Note: *OT- Overseas Cargo Traffic; CT-Coastal Cargo Traffic; TT- Total Cargo Traffic*

Source: *Ministry of Shipping, Annual Report, 2019-20.*

Commodity-wise Traffic handled by All Ports

(In million tonnes)

Sl.No.	Commodity-wise Traffic	2017-18	2018-19	2019-20
1.	P.O.L (Crude & Products)	406.68	412.69	418.79
2.	Iron ore	77.77	83.64	95.65
3.	Building Material	15.59	16.16	15.00
4.	Coal	273.41	308.58	297.40
5.	Fertiliser raw material	26.77	31.64	32.11
6.	Other/cargo	408.35	429.07	461.01
Total		**1208.56**	**1281.78**	**1319.97**

Source: *Ministry of Shipping, Annual Report, 2019-20.*

State-wise Cargo Traffic at Indian Ports during 2019-20

(In million tonnes)

State	Major Ports	Non-major ports	Total
1. Gujarat	122.61	411.79	534.40
2. Maharashtra	129.15	43.66	172.81
3. Goa	16.02	0.01	16.03
4. Karnataka	39.15	0.94	40.08
5. Kerala	34.04	0.16	34.19
6. Tamil Nadu	114.58	11.37	125.95
7. Andhra Pradesh	72.72	99.91	172.63
8. Odisha	112.69	35.27	147.96
9. West Bengal	63.98	0.00	63.98
10.Others(a)	0.00	11.95	1319.97

Note: *(a) Includes Puducherry, A&N islands and Lakshadweep Port*

Source: *Ministry of Shipping, Annual Report, 2019-20.*

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.

Sethusamudram Corporation Ltd (SCL)

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

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 furnished in 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 31.05.2020)			
Jawaharlal Nehru Port Trust (JNPT)			
1.	Development of Container Terminals of 2,000 m length at JNPT (4th Container terminal)	7915.00	60.00
Kamarajar Port Ltd (Ennore)			
2.	Modification of existing Iron Ore Terminal to also handle coal (SIOTL)	229.00	12.00
3.	Development of Marine Liquid Terminal-II on DBFOT Basis	393.00	3.00
4.	Development of LNG Terminal on Captive Basis	5151.00	5.00
5.	Development of IOCL Oil Jetty (Captive)	480.00	3.00
6.	Construction of Coal Berth 3 for TANGEDCO (Captive)	235.14	9.00
7.	Construction of Coal Berth 4 for TANGEDCO (Captive)	244.51	9.00
Deendayal Port Trust			
8.	Development of Oil Jetty to handle liquid cargo ship bunkering Terminal	233.50	3.39
9.	Development of Marine Liquid Terminal Facilities consisting of SPM & Two product jetties in KPT waters at OOT,Vadinar on captive-use basis	448.00	24.50
Kolkata Port Trust			
10.	Setting up of Liquid Cargo Handling Jetty at Shalukkhali, Haldia Dock -II	172.52	2.43
Mormugao Port Trust			
11.	Redevelopment of Berths 8, 9 and Barge Berths	1145.36	19.22
New Mangalore Port Trust			
12.	Provide Handling Equipment at Berth No. 18 (Old Berth no.12)	469.46	6.73

contd.

(Table-1 contd)

Sl. No.	Projects/ Development	Estimated Cost (In ₹ crore)	Capacity (MMTPA)
	for handling bulk cargo & containers under PPP Mode		
13.	Mechanisation of Berth No. 14 for handling container and other clean cargo on PPP mode	280.71	6.02
Paradip Port Trust			
14.	Development New Coal Berth for handling of Coal imports at Paradip Port on BOT basis.	655.56	10.00
15.	Development of Clean Multi-cargo Berth in Southern Dock	430.78	5.00
16.	Development of Deep Draft Iron Ore Berth	740.19	10.00
17.	Mechanisation of EQ1 to EQ3 berths	1437.76	30.00
Visakhapatnam Port Trust			
18.	Development of East Quay-1A (EQ-1A) berth on south side of EQ-1 berth in the Inner harbour of Visakhapatnam Port on DBFOT basis	313.39	7.36
19.	Extension of existing container MTEUs terminal	633.11	0.54
VOC Port Trust, Tuticorin			
20.	Construction of North Cargo Berth-II	332.16	7.00
21.	Development of Shallow draught Berth on PPP mode for handling construction materials	65.37	2.00
22.	Development of facilities for Handling Thermal Coal for SPIC Electric Power Corpn Pvt Ltd (SEPC)	214.50	2.50
Mumbai Port Trust			
23.	Bunkering Terminal	50.00	2.00

PPP & Captive Projects under Operation

Chennai Port Trust			
1.	Container Terminal-1 M/s CCTPL	790.60	31.30
2.	Development of 2nd Container Terminal (M/s CITPL)	783.32	29.50
Cochin Port Trust			
3.	Vallarpadam Container Terminal ICTT	2118.00	40.00
4.	LNG Terminal	4182.00	5.00
5.	Crude Oil Handling Facility for BPCL-Kochi Refinery (Formerly KRL-a Central PSU) (Captive)	720.00	13.00
JLN Port Trust			
6.	Container Terminal, NSICT	750.00	13.20
7.	Extension of container berth by 330 m towards north	600.00	10.00
8.	Third Container Terminal	1078.00	15.60
9.	BPCL Jetty (Captive)	200.00	5.50
Kamarajar Port Ltd (Ennore)			

(contd)

(Table-1 contd)

Sl. No.	Projects/ Development	Estimated Cost (In ₹ crore)	Capacity (MMTPA)
10.	Development of Marine Liquid Terminal - I on DBFOT Basis	252.00	3.00
11.	Development of Coal Terminal for users other than TNEB on BOT basis	399.00	8.00
12.	Development of Container Terminal on DBFOT basis (2 phases) (Ph-1- Rs 724 Cr and Ph-2- Rs 546 Cr)	1270.00	16.80
13.	Development of Multi-Cargo berth on DBFOT Basis	151.00	2.00
14.	Coal Berth-1 for TANGEDCO (Captive)	80.38	8.00
15.	Coal Berth-1 for TANGEDCO (Captive)	80.38	8.00
Deendayal Port Trust			
16.	Development of 13th Berth other than liquid and container cargo berth	188.87	1.50
17.	Development of 15th multipurpose cargo berth at Kandla	188.87	1.50
18.	Container Freight Station	41.07	3.00
19.	Dry Bulk Terminal off Terka near Tuna on BOT basis (Outside Kandla Creek)	1060.00	14.11
20.	Development, operation & maintenance of Container Terminal (Berth 11 & 12) on BOT	159.81	7.20
21.	Oil Jetty for IOCL (Captive)	20.70	2.00
22.	Oil Jetty related facilities at Vadinar (ESSAR) (Captive)	750.00	13.50
23.	Fifth Oil Jetty (IFFCO)(Captive)	24.00	2.00
24.	Setting up of Captive Barge Jetty at Old Kandla (IFFCO)	27.00	1.50
Kolkata Port Trust			
25.	Multipurpose Berth No. 12	35.00	1.12
26.	Multipurpose Berth No. 4A	150.00	2.00
Mormugao Port Trust			
27.	Development of Coal Handling Terminal at Berth No.7	406.00	4.61
28.	Bulk Cargo berths No. 5A & 6A	250.00	5.00
New Mangalore Port Trust			
29.	Setting up of Bulk Cement Handling facility for M/s Ambuja Cement Ltd (Captive)	98.00	1.00
30.	Construction of Captive Jetty for handling Coal by M/s UPCL	376.52	5.40
Paradip Port Trust			
31.	Mechanisation of Cargo Handling Project-1	37.32	2.00
32.	Mechanisation of Cargo Handling Project-2	25.13	2.00

(contd)

(Table-1 concld)

Sl. No.	Projects/ Development	Estimated Cost (In ₹ crore)	Capacity (MMTPA)
33.	a) By OSL b) By Bothra Shipping Services c) By ABCT Pvt. Ltd Supply, installation of 3 Nos. of HMC	87.75	3.75
34.	a) By Crew Pvt. Ltd (60T) b) By OSL (100 T) c) By OSL (60 T)	87.75	3.75
35.	Captive Fertilizer Berth to PPL	20.00	4.00
36.	Captive Fertilizer Berth to IFFCO	26.17	4.00
37.	Construction of SPM Captive Berth	500.00	15.00
38.	Mechanisation of Central Quay-III Berth	40.00	6.00
39.	Construction of 2nd SPM Captive Berth	746.17	11.00
40.	Construction of 3rd SPM Captive Berth	746.17	11.00
41.	Development of South Oil Jetty (Captive)	222.29	10.00
Visakhapatnam Port Trust			
42.	Multipurpose Berths-EQ-8 & EQ-9	320.29	6.47
43.	Container Terminal, Outer harbour	86.35	5.60
44.	Development of WQ-6 berth for handling Dry Bulk Cargoes	114.50	2.08
45.	Development of EQ-10 berth for handling Liquid Cargoes	55.38	1.84
46.	Mechanised Coal handling facilities at GCB in the Outer Harbour	444.10	10.18
47.	Development of EQ-1 Berth	323.18	6.41
48.	Upgradation of existing facility in the outer harbour and creation of new facility in the inner harbour for handling iron ore.	845.41	23.00
49.	Single Point Mooring –Captive facility developed by H.P.C.L	643.48	8.00
VOC Port Trust, Tuticorin			
50.	Development of 7th Berth as Container Terminal	135.00	5.00
51.	Berth No.8 Container Terminal	312.32	7.20
52.	Deployment of one number additional Harbour Mobile Crane at III & IV	24.60	4.36
53.	Upgradation of Mechanical handling equipment in Berth No.1 to Berth No.6 and Berth No. 9	49.20	8.72
54.	NTPL Captive berth - North Cargo Berth I (Captive)	43.72	6.30
55.	Coal Jetty-I & II	-	6.25

***Source** : Indian Port Association*

Inland Water Transport (IWT)

India has large number of inland waterways consisting of rivers, canals, backwaters, creeks, lakes, etc., which have the potential for development of efficient waterways transport network. IWT is referred to as operationally cheaper, high in fuel efficiency and environmental-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

A major boost to IWT Sector has been provided by the Government of India through enactment of National Waterways Act, 2016 (No.17 of 2016) dated 26 March, 2016 which came into force w.e.f 12 April, 2016. With the enactment of the National Waterways Act, 2016, the total number of national waterways is now 111 including 05 waterways declared through earlier Acts. These 111 National Waterways cover a total length of 20,375 Km. spread across 24 States in the country. National Waterways of India are well in line to become the lifeline of the country

Development of National Waterways

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

During 2019-20, Bandalling works of 4,800 m in Tribeni-Rajmahal (399 km) stretch and 16,110 m in

Rajmahal-Chunar (801 km) stretch were executed for developing and maintaining the navigation channel (fairway). Besides, 0.38 lakh m^3 dredging in Tribeni – Rajmahal stretch and 1.62 lakh m^3 dredging in Rajmahal - Varanasi / Chunar stretch were carried out by deploying IWAI's dredgers apart from dredging carried out under Assured Depth Contracts.

National Waterway-2 **:** Dhubri-Sadiya stretch of River Brahmaputra (Total length of 891 km as declared in 1988) is in the State of Assam. Many rivers join this mighty river to form a fish bone structure. About 1,687 km stretches of tributaries of Rivers Brahmaputra and Barak have been identified in NER having potential for development as feeder route. A total of 2,451.147 km were surveyed during the year 2019-20 for development in Phase-II, hydrographic & topography survey has been completed.

National Waterway-3*:* Kottapuram-Kollam stretch of West Coast Canal along with Udyogmandal and Champakara Canals (Total length of 205 km as declared in 1993) is in the State of Kerala. The NW-3 was extended by another 165 km towards North from Kottapuram to Kozhikode during April 2016 with declaration of National Waterway Act, 2016

Preparation of two stage DPR for the development of extended stretch is under progress.

National Waterway-4: For development of the National Waterway-4 in Andhra Pradesh, an MoU was signed with Government of Andhra Pradesh on 14th April, 2016. A project has been sanctioned for ₹ 96.0 crore for developing the stretch between Vijayawada and Muktyala (82 km) of River Krishna in Phase–I. Dredging work was taken up at critical shoals in Vijayawada to Muktyala (82 km) stretch of River Krishna as a part of Phase – I development.

During the year 2019-20, in Phase-I stretch, dredging work is completed at critical shoal locations. Land acquisition for permanent terminals at Muktyala, Harschandrapuram and Ibrahimpatnam are in progress and construction of four floating terminal is in progress.

National Waterway-5**:** For developing 332 km stretch in 2 phases between Talcher and Paradip / Dhamra on NW-5, an MoU (Memorandum of Understanding) with Government of Odisha, Paradip Port and Dhamra Port Co. Ltd was signed by IWAI on 30.6.2014. The Phase-1 development of 211 km stretch between Pankapal and Paradip/Dhamra is already under progress. Applications for CRZ and wildlife clearance were submitted to OCZMA and views of OCZMA obtained. Monthly Longitudinal thalwas survey between Paradip/ Dharma and Pankapal is being conducted.

A total of 2,451.147 km was surveyed during the year 2019-20 for development in Phase -II. Also hydrographic and topography survey have been completed.

National Waterway-6**:** River Barak was declared as National Waterway-16 (NW-16) in the year 2016. It connects Silchar, Karimganj and Badarpur in Cachar valley of Assam with Haldia and Kolkata ports through Indo-Bangladesh Protocol (IBP) Route. The achievements of IWAI on NW-16 are enumerated as below:

Dredging, providing fairway maintenance for Least Available Depth (LAD) along with providing navigational aid between Silchar and Bhanga have commenced in November 2017 and is in progress.

Upgradation / setting up of terminals at Badarpur and Karimganj has commenced in August 2017 and the work is in progress.

Development of 106 New National Waterways

National Waterways Act, 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) by Inland Waterways Authority of India (IWAI), 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 8 most viable NWs.

Accordingly, a Restructuring Committee has been constituted to initiate the restructuring process on an urgent basis.

As part of the preparatory works to undertake development on 106 new National Waterways, IWAI has grouped them under 3 categories as under:

Category–I: Eight waterways which are considered to be the most viable and the following stretches have been taken up for development in Phase-I.

1. River Barak (NW-16) – Silchar to Bhanga (71 km).
2. River Gandak (NW-37) – Ganga confluence to

Bagaha Bridge (250 km approx.)

3. Sunderbans (Protocol Route) Waterways (NW-97)–Namkhana to Athara Banki Khal (172 km).
4. Three NWs of Goa: would be taken up through Govt. of Goa & Mormugao Port Trust:
   i) River Cumberjua (NW-27),
   ii) River Mandovi (NW-68),
   iii) River Zuari (NW-111)
5. Alappuzha–Kottayam–Athirampuzha Canal (NW -9) - Alappuzha–Kottayam.
6. River Rupnarayan (West Bengal) (NW - 86): Approximately 34 km between Geonkhali to Kolaghat

Accordingly, consultancy assignments for preparing EPC tender documents contract and environmental studies for these waterways are being undertaken in phased manner.

Category – II: Forty-six waterways which are in the coastal regions and have some tidal stretches were clubbed in Category-II. Two stage DPR studies (Stage I – Feasibility study and based on viability and Stage II – DPR study) for all the rivers were awarded. On evaluation of Feasibility Study reports, Consultancy services for 2nd stage study, i.e., preparation of DPRs were taken up for 26 NWs while 20 NWs were not found feasible. Out of 26 NWs, 24 DPRs have been received and are being finalised. DPR of NW-53 (Kalyan – Thane – Mumbai Waterway, Vasai Creek and River Ulhas) is being finalised by Thane Municipal Corporation and preparation of DPR of River Tizu (NW-101) has been initiated.

Category – III: The remaining 52 NWs which are located in remote, inaccessible and hilly regions were grouped in this category. Initially, only Feasibility Study reports for all these 52 NWs were awarded. The DPR work for River Yamuna (NW-110) and River Jhelum (NW-49) has been awarded in the year 2017-18.

Recent Initiatives

Initiatives for Growth of Traffic on National Waterways

1. Fairway Development Works:

Fairway development works to ensure Least Available Depth (LAD) of 3.0 meter in Haldia-Barh, 2.5 meter in Barh-Ghazipur and 2.2 meter in Ghazipur – Varanasi stretches on NW-1 are in progress under the Jal Marg Vikas Project (JMVP) which has been undertaken by IWAI with technical and financial assistance from World Bank. Similarly, to improve the connectivity between NW-1 and NW-2/ NW-16 via the Indo–Bangladesh protocol route, the critical and shallow stretches between Sirajganj and Daikhowa on protocol Route No.1 & 2 and Ashuganj and Zakiganj on protocol Route No.3 & 4 in Bangladesh are being jointly developed by India and Bangladesh for round the year navigability (with targeted LAD of 2.5 m).

2. Operations & Management of IWAI's Terminals by Private Operators: IWAI is in the process of handing over its terminals on all NWs to private operators on PPP basis. The newly constructed Multimodal Terminals (MMTs) at Varanasi (capacity 1.26 million tonnes), Sahibganj (capacity 3.03 million tonnes) and Haldia (capacity 3.18 million tonnes) on NW-1 under JMVP are in the process of being tendered out to private operators on PPP basis for operation and maintenance. Similar exercise is in progress for IWAI's terminals at Gaighat (Patna) on National Waterway-1 and Dhubri, Pandu (Guwahati) on National Waterway-2. Subsequently, IWAI's terminals on NW-3 and NW-16 are also planned to be handed over for O&M to private players. Appointment of O&M operators will bring in necessary operations and marketing experience and contribute to increasing traffic on the IWT mode.

3. Policy for Development of Private Jetty/ Terminal: With the growth of IWT traffic on NWs, private entities have exhibited interest to build and operate private terminals on NWs. Allowing private entities to build, operate and manage the terminals will enable rapid development of terminal network on NWs. In view of the advantages associated with private sector participation in development of terminals on NWs, IWAI has proposed to permit the private sector to develop their own jetties and operate them on commercial basis. Recently IWAI has permitted RO-RO operations by private operators on NW-1 using their land on banks as landing points on temporary basis.

4. Facilitation of Cargo Transportation by the Local community: IWT has been traditionally used by the local community for transportation of their produce and passengers. Facilitation of movement of goods on waterways and local level as part of the Arth Ganga vision will further enhance use of IWT.

5. Enhanced Regional Trade using IWT Mode – Trade between Bhutan and Bangladesh: Stone exporters from Bhutan have identified Inland waterways as an alternate mode of transportation considering the benefits associated with waterways mode such as lower

transportation cost, larger shipment size compared to road, avoiding congestion on land routes etc.

Sagarmala

i) The Sagarmala Programme is the flagship programme of the Ministry of Shipping to promote port-led development in the country through harnessing India's 7,500 km long coastline, 14,500 km of potentially navigable waterways and strategic location on key international maritime trade routes.

The main vision of the Sagarmala Programme is to reduce logistics cost for EXIM and improve domestic trade with minimal infrastructure investment.

ii) Under the Sagarmala Programme, 500 projects at an estimated investment of more than ₹ 3.55 lakh crore have been identified for implementation up to 2035. Of these, 143 projects (costing ₹ 80,233 crore) have been completed and 190 additional projects (costing ₹ 2.12 lakh crore) have been awarded. Project completed during 2019-20 include 10 projects of port modernising 8 projects of port connectivity and 2 projects of Coastal Community development.

iii) A roadmap has been created for increasing the Indian port capacity to 3,000 plus MMTPA to cater to the projected traffic of 2,500 MMTPA by 2025. For all the 12 major ports, master plans have been finalised. From the port master plans, 69 port capacity expansion projects with project cost of ₹ 37,441 crore have been identified for implementation. Out of these 30 projects have been completed and 26 projects are under implementation and 13 projects are under various stages of development. Four projects were completed during 2019-20.

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 (Ennore) 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 122.61 mt (17.4%) followed by Paradip with 112.69 mt (16.0%), JNPT with 68.45 mt (9.7%), Visakhapatnam with 72.72 mt (10.3%) and Mumbai with 60.70 mt (8.61%). Together these five Ports handled around 62 per cent of major port traffic.

A Cargo Handling Capacity and Cargo Handled

The cargo handling capacity in Major Ports during 2019-20 (provisionally) was 1,534.91 million tonnes as compared to 1,541.09 million tonnes during 2018-19. The major ports, therefore, continued to maintain a favourable capacity-cargo equation during the year.

The capacity addition and the productivity improvements achieved by the major ports coupled with growing participation of Private Sector in cargo handling have had a favourable impact on efficiency of cargo handling operations at India's major ports. The capacity utilisation was 45.9% in 2019-20.

The major ports handled (cargo) a total traffic of 704.92 million tonnes during 2019-20 against 699.17 million tonnes during 2018-19. Traffic handled (cargo) by major ports during 2018-19 and 2019-20 is furnished as below:

Major port-wise capacity utilisation during 2019-20 is given below.

Traffic Handled (cargo) at Major Ports 2018-19 & 2019-20

(In million tonnes)

Sl. No.	Ports	2018-19	2019-20
1A.	Kolkata	18.55	17.30
1B.	Haldia	45.21	46.68
2.	Paradip	109.30	112.69
3.	Visakhapatnam	65.30	72.72
4.	Ennore (Kamarajar)	34.50	31.75
5.	Chennai	53.01	46.76
6.	V.O. Chidambaranar (formerly Tuticorin)	34.34	36.08
7.	Cochin	32.02	34.04
8.	New Mangalore	42.51	39.15
9.	Mormugao	17.68	16.01
10.	Mumbai	60.63	60.70
11.	JNPT	70.71	68.45
12.	Deendayal (kandla)	115.40	122.61
	Total	**699.17**	**704.92**

Figures rounded off

Source: *Ministry of Shipping, Annual Reports, 2018-19 and 2019-20*

The selected commodity-wise cargo traffic handled at major ports during 2018-19 and 2019-20 is as below:

(In million tonnes)

Sl.No.	Commodity	2018-19	2019-20
1.	P.O.L (Crude & Products)	220.95	221.64
2.	Iron ore	38.81	55.46
3.	Fertilizer	8.43	9.53
4.	Fertilizer Raw material	6.99	6.60
5.	Coal*	137.48	118.88
6.	Food grain	0.80	0.40
7.	Other/cargo	285.72	292.42
	Total	**699.78**	**704.93**

Source: *Ministry of Shipping, Annual Reports, 2018-19 and 2019-20*

** Thermal Coal & coking coal*

PORT-WISE REVIEW OF MAJOR PORTS

EAST COAST

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.

Major-Port-wise Capacity Utilisation during 2019-20

(In million tonnes)

Name of the Port	Capacity	Capacity Utilisation (%)
SMP Kolkata Dock System	31.57	54.81
SMP Haldia Dock Complex	51.00	91.53
Paradip	249.00	45.26
Visakhapatnam	134.18	54.20
Kamarajar	91.00	34.89
Chennai	135.00	34.63
Chidambaranar	111.46	32.37
Cochin	78.60	43.31
New Mangalore	104.73	37.38
Mormugao	63.40	25.26
J.L. Nehru	138.87	49.29
Mumbai	79.00	76.83
Deendayal	267.10	45.90
ALL PORTS	**1534.91**	**45.93**

Salient Features of Kolkata-Haldia Port

Port	Draught (m)		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq m)
	min.	max.				
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 63.98 million tonnes traffic in 2019-20 (KDS handled traffic of 17.30 million tonnes, HDC handled 46.68 million tonnes). The port has 55 berths (KDS – 34 including 6 oil Jetties and HDC–17 including 3 Jetties) handling various types of cargoes including containers with an effective rated capacity of 82.57 MTPA.

The traffic in mineral/ore/mineral-based commodities handled at Kolkata and Haldia Port in 2018-19 and 2019-20 was as under:

(In '000 tonnes)

Commodity	Export		Import	
	2018-19	2019-20	2018-19	2019-20
Thermal coal	2531	2359	9	-
Coking coal	-	2	9618	7990
Iron ore	434	3179	40	-
Iron & Steel	505	710	361	169
Sand	54	78	248	187
Rock Phosphate	-	-	341	286
Metallurgical coke	-	-	773	479
Limestone	-	-	3429	3288
Raw Petroleum coke	-	-	231	253
Gypsum	-	-	499	371
Dolomite	-	-	120	16
Non-coking/coal	1	3	9843	9018
Manganese ore/slag	-	-	979	943
Cement clinker	7	-	980	838
Salt	-	-	44	24

Source: *Administrative Report, 2019-20*

Wharfage

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

(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 94.31
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.	
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) Important projects awarded during the year include installation of Container Scanners at an estimated cost of ₹ 29.38 crore, Construction of 1.5 lakh sq. meters of Hardstand inside the Dock at an estimated cost of ₹ 54.58 crore. Major Projects completed during the year include up-gradation of Track nos. 10, 12,14,16,18,19, 20, 21, 22 and 23 at EJC Yard at a cost of ₹ 37.17 crore and development of hardstand area msg. about 1.13 lakh sq m behind Berth No.13 inside the Dock at a cost of ₹ 44.34 crore.

2) Setting up of Outer Terminal-II (OT-II) for liquid cargo handling at HDC (Cost ₹ 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 was expected to be completed by June, 2020.

3) Setting up of Liquid Cargo Handling Jetty along with associated facilities at Shalukkhali, Haldia Dock-II (on BOT basis) [Cost ₹ 172.52 crore & capacity 2.43 MMTPA] for handling paraxylene, POL, edible oil, chemicals etc. was expected to be completed by December 2021.

4) Laying of 2nd rail line from Durgachak to HDC Railway System under Sagarmala Project (Cost ₹ 78.84 crore) for covering the entire route up to Haldia from Panskura which would increase the capacity of rail movement to and from Haldia was expected to be completed by 29.08.2019.

PARADIP

It is one of the premier Maritime gateways on the East Coast of India with 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 moorings	No. of wharf	Stacking area provided (sq. m)
min.	max.				
11.0	14.5	14	1	–	–

The port handled 112.69 million tonnes of cargo during 2019-20 as compared to 109.30 million tonnes in 2018-19. The Port has 16 berths/jetties and 3 Single Point Moorings and 1 RO-RO Jetty for handling different types of cargos with an effective rated capacity of 239 MT/annum.

Development Plans

Major projects awarded during the year are:

1) LPG Terminal at South Oil Jetty at an estimated cost of ₹ 690 crore and capacity addition of 0.75 MTPA,

2) Installation of Container Scanners at an estimated cost of ₹ 40 crore.

Notable Achievements During the Year

a) Mechanised Coal Handling Plant (MCHP) has achieved a milestone by Ship loading 86,896 MT of Thermal coal in the shortest possible time of 17.51 hrs with gross productivity of 4,868 TPH (1,16,835 TPD) surpassing the previous records in the month of May, 2018.

b) Port created all time record by successfully completing movement of 27 vessels within 20 hrs, i.e., from 0600 hrs on 13th Oct, 2018 to 0200 hrs on 14th Oct. 2018.

c) On 29th Oct. 2018 PPT introduced possibly for the first time in India, the Mediterranean Mooring Method to discharge edible oil from "MT Delfine" without using the berth.

d) All time record traffic of 6.39 lakh tonnes was handled in a single day on 13th Oct. 2018 surpassing the previous record of 5.34 lakh tonnes handled in the previous month.

e) Possibly for the first time in India G12 grade coal from MCL was blended homogenously with G4 grade coal of ECL in 65:35 ratio to achieve GCV of 4,033 kcal/kg suitable for Thermal power plants and shipped mechanically at MCHP through "M.V. Diamond Star" on 06th Nov. 2018.

f) Iron Ore Handling Plant achieved an all time record by Tippling (unloading) an Iron Ore Fines rake in 1 hr 45 min. on 11th Dec 2018 and an Iron Ore Pellet rake in 1 hr 50 min. on 5th Dec. 2018.

Visakhapatnam

It is a natural harbour. Visakhapatnam Port has handling capacity of 134.18 million tonnes. The port handled 72.72 million tonnes of cargo during 2019-20 as compared to 65.30 million tonnes in 2018-19. The largest size vessel that can be handled in the inner harbour is 14.50 metres draught vessel, while the outer harbour is capable of handling vessel up to 200,000 dwt having draught up to 18.10 m.

Salient Features of Visakhapatnam Port

	Draught (m)		No. of berths	No. of moorings	No. of wharf	Stacking areas provided (sq m)
	min.	max.				
Inner harbour	10.00	14.50	21	–	NA	Exclusive for Iron ore: 3,71,571 sq m
Outer	14.00	18.10	6	1	NA	In addition harbour adequate storage open/

Dry Bulk Cargo

(In million tonnes)

Sr.No.	Particulars of Commodities	Rate per Tonne (₹)	
		Foreign Cargo	Coastal Cargo
1.	Iron ore	27.60	27.60
2.	Iron ore pellets	31.05	31.05
3	Bauxite/Manganese	31.05	18.63
4.	Cement/ Clinker/ Limestone/ Gypsum/ Nickel/ Alumina/ Bentonite/ Slag	48.30	28.98
5.	Pig iron	55.20	33.12
6.	Steam (Thermal) Coal and its variants	63.25	63.25
7.	Coke of all types	63.25	37.95
8.	Wood chips	46.00	27.60
9.	Fertilizer and fertilizer raw material	57.50	34.50
10.	Sugar, wheat and grains & pulses of all types	46.00	27.60
11.	Scrap of all types	63.25	37.95
12.	Sand	48.30	28.98
13.	Cargo non-specified above	27.60	27.60
14.	Livestock coat sheet (each)	30.00	18.00
15.	Fodder (each)	5.00	3.00

Traffic in mineral commodities handled by Visakhapatnam port during 2018-19 & 2019-20 is furnished below:

(In '000 tonnes)

Commodity	Exports		Imports	
	2018-19	2019-20	2018-19	2019-20
Iron ore	3456	7599	654	502
Manganese ore	99	55	1616	1659
Thermal coal	1851	821	-	-
Bentonite ore	-	-	-	35
Limestone	-	-	810	921
Bauxite	-	-	519	-
Coking coal	-	-	5726	7446
POL & Crude	1211	1970	12566	13116
Anthracite coal	-	-	209	257
Steam coal	-	-	9026	9268
PET coke	-	-	1511	1402
LAM coke	-	-	345	224

Figures rounded off

Following are the development activities that were undertaken in the port during 2019-20.

1. Development of multipurpose terminal by replacement of existing old and shallow berths EQ-2 to EQ-5 in the Inner Harbour to cater to 14.5 m draft vessels was completed on 30.09.2019.
2. Extension of the existing container terminal at an estimated cost of ₹ 633.11 crore. by the existing terminal operator M/s VCTPL.
3. Improving the capacity utilisation of OR1 and OR2 berths in Inner Harbour.
4. Implementation of ERP.
5. Installation of Mobile X-Ray container scanner.
6. Development and improvement of rail and road connectivity.
7. Environmental upgradation works.

Future Development Plan

No plans are envisaged in the near future, as adequate handling facilities are available for minerals/ ore trade.

Kamarajar Port Ltd (formerly Ennore)

(A mini Ratna Government 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 handled 31.75 million tonnes of cargo during 2019-20 as compared to 34.50 million tonnes in 2018-19. The port handled 20.26 million tonnes of coal during the year 2019-20 as compared to 25.04 million tonnes in 2018-19. The largest size vessel that can be received at the port is in the range up to 1,50,000 dwt.

The facilities available at Kamarajar port are detailed below:

1. Berth	2 (Thermal Coal)	one berth
Max. permissible Length	240 metres each	automobile
Max. permissible Draught	13.5 metres	(GCB) one
Capacity of berth CB1	8 MTPA	POL/che-
Capacity of berth CB2	4 MTPA	micals
Capacity of berth GCB	1MTPA	(MLT1)
Capacity of berth MLT1	3MTPA	and one
Capacity of berth CICT	8MTPA	coal (other than TNEB)
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)	
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.	

Salient Features of Kamarajar Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves provided (sq. m)	Stacking area
min.	max.				
-	16.50	3	-	-	-

Wharfage

Wharfage charges (mineral-wise) levied by Kamarajar Port during 2017-18 & 2018-19 for coal was as follows:

(In ₹ per tonne)

Commodity	2017-18	2018-19
Coal	183.65	183.65

The traffic handled during 2017-18 and 2018-19 is furnished below:

(In million tonnes)

	Export		Import	
Commodity	2017-18	2018-19	2017-18	2018-19
Coal	-	-	23.17	25.04

Development Plan/Future Development Plan

The company has initiated action for development of additional six berths/terminals: 3 berths to handle coal, 2 berths to handle Liquid cargo and one berth to handle container.

Chennai Port

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 2019-20 was135.6 million tonnes. The port handled 46.76 million tonnes during 2019-20 as compared to 53.01 million tonnes in 2018-19. 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.

Longest vessel arrived LOA (332 m)

Longest container vessel DWT (833264)

Vessel with deepest draft berthed Dust (158871)

Salient Features of Chennai Port

Draught (m)		No. of berths	No. of moor-ings	No. of wharves provided (sq.m)	Stacking area
min.	max.				
8.5	16.5	27	-	-	-

Development Plans

(i) Development of common railway yard inside the port, the work was completed on 22.02.2018;

(ii) Construction of Coastal Berth of Chennai Port. The work is likely to be completed in August, 2018;

(iii) Development of paved storage yards at Chennai Port for handling export cargoes. The work is likely to be completed 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

(v) 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: ₹ 110 crore & 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 : ₹ 1,000 crore & capacity would be 2 MTPA) Sagarmala project.

The traffic in mineral/ore/mineral-based commodities handled by the port (excluding commodities handled in containers) during 2018-19 and 2019-20 is given below:

(In '000 tonnes)

Commodity	Export		Import	
	2018-19	2019-20	2018-19	2019-20
Mineral oils & other POL	1514548	1498162	11782844	11921645
Sulphur	-	-	45207	6000
Barytes	859452	601663	-	-
Dolomite	-	-	609179	333735
Limestone	-	-	1863550	346570
Gypsum	-	-	421308	235413
Scrap	-	-	33802	8981
Silica sand	-	-	124093	110829
Cobble stone	157150	158795	-	-
Cement clinker	83829	8125	-	-

Wharfage

Cargo related wharfage charges levied by Chennai Port Trust w.e.f. 29.11.2019 were as follows:

(In ₹ per tonne)

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

V. O. Chidambaranar Port

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 95,692 dwt. The port, in 2018-19 (As on 31-03-2019), reported a total handling capacity of 111.46 million tonnes. The port handled 36.08 million tonnes during 2019-20 as compared to 34.34 million tonnes in 2018-19.

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	14.20	16	–	–	4 Ware-houses of 19,550 sq. m. 2 Transit sheds of 10,800 sq. m open area and 5,53,000 sq.m open area container of 54,000 sq.m

The traffic in mineral/ore/mineral-based commodities handled by the port during 2017-18 and 2018-19 is as under:

Commodity	Exports		Imports	
	2018-19	2019-20	2018-19	2019-20
Fertilisers	-	-	295387	295869
Pet. Coke	-	-	52826	53943
Industrial coal	-	-	4640963	6011750
LPG	-	-	134930	141232
Liquid Ammonia	-	-	149675	183800
Gypsum	-	-	146984	86799
Limestone	-	-	1242183	1234594
Coking coal	-	-	-	61070
Thermal coal	-	-	8597331	7190188
Cement	105398	93659	-	-
Caustic Soda	63451	40230	-	-
Copper Concentrates	75999	149514	86377	-
Granite stone	24185	23295	-	-
Copper slag	8310	11806	-	-
Sulphuric acid	-	-	-	-
Iron & steel materials	7819	5260	-	-

Wharfage Charges (Foreign)

Wharfage charges levied by V.O. Chidambaranar Port during 2018-19 for the following minerals were:

(In ₹ per tonne)

Sl.No.	Commodity	2018-19
1.	Garnet sand	25.10
2.	Ilmenite sand	25.10
3.	Copper concentrate	72.66
4.	River sand	23.78
5.	Other ores	25.10
6.	Dolomite	55.48

Development Plans

V.O. Chidambaranar Port Trust has awarded the work for "Construction of North Cargo Berth on EPC mode to M/s SRISHAILA - UNISON (JV) for a value of ₹ 36.52 crore. The work commenced on 29.04.2018 and was substantially completed on 24.07.2018.

The berth has been designed for handling vessels up to 15,000 dwt having a draught of (-) 9.00 m. But the average available depth in the dock basin area in front of the berth is (-) 4.40 m. In order to handle the designed vessels in the berth, the dock basin area has to be dredged up to (-) 10.00 m. The dredging contractor, M/s Jan De Nul mobilised the dredger on 22.03.2018 and dredging commenced on 24.03.2018 and was completed on 04.04.2018. The total dredged quantity is 3.47.210.30 cu.m with which an area of around 75,000 sq.m has been reclaimed. The executed value of dredging was ₹ 85.48 crore.

WEST COAST

Deendayal Port Trust (DPT) (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 2019-20. The handling capacity of the port in 2019-20 was 267.10 tonnes.

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	NA	13.50	6	-	-	There is no separate stacking area for minerals at the port. However, sufficient area to stack around 3 MMT of dry bulk cargo is available at the port which can be utilised for storage of minerals.

NA- Not applicable

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 unduntry crafts is in operation.

Traffic in mineral/ore commodities handled by the port during 2018-19 and 2019-20 is as under:

(In tonnes)

Commodity	Exports		Imports	
	2018-19	2019-20	2018-19	2019-20
1. Coal	-	-	17176825	17860832
2. Salt	7269837	6524306	-	-
3. Copper conc.	77581	9954	-	-
4. Iron ore	-	-	1478857	750569
5. Bentonite	186181	195824	-	-
6. Sulphur	-	-	-	20800
7. Rock phosphate	-	-	29758	45495

The total traffic handled by the Deendayal Port Trust during 2019-20 was 112.61 million tonnes as compared to 115.40 million tonnes in 2018-19.

Wharfage

Wharfage charges levied by Deendayal Port Trust are as follows:

(In ₹ per tonne)

Commodity	Coastal Rates	Foreign Rates
Liquid in bulk		
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	36.76	61.26
Cement & clinker	14.85	24.75
Ores and minerals (in all forms)	24.44	40.73
Granite and marbles	14.85	24.75
Metal (ferrous/non-ferrous) (including steel pipes, wire rod, plates, pig iron, other steel coil)	24.75	41.26
Metal scrap	56.79	94.65
Construction materials and sand	11.14	18.56
Coal and coke (including firewood)	23.90	39.84
Salt	19.98	33.30
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.*

Mumbai Port

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

The port has 35 berths (including OCT) with an effective rated capacity of 79.00 MTPA (up to December, 2018). The total traffic handled by Mumbai port during 2019-20 was 60.70 million tonnes as compared to 60.63 million tonnes during 2018-19. The traffic in mineral/ ore/mineral-based commodities handled in 2017-18 and 2018-19 was as under:

(In '000 tonnes)

Commodity	Export		Import	
	2017-18	2018-19	2017-18	2018-19
Iron & Steel	785	-	3060	-
Coal	-	-	2473	-
Fertilisers	-	-	225	-
Rock Phosphate	-	-	63	-

Figures rounded off

Development

a) Mumbai Goa cruise service was launched on 20.10.2018. The cruise services would be available every alternate day from Mumbai and the capacity of the Cruise ships would be up to 350 passengers and 150 crew. This cruise service is aimed at boosting tourism development in India.

b) An agreement has been signed between Mumbai Port Trust and Cochin Shipyard Ltd (CSL) on 11.1.2018 to revive one of the largest dry docks on the west coast of India, the Hughes Dry Dock (HDD) at Mumbai Port which was built in 1914. Cochin Shipyard Limited will be developing a world class integrated ship repair facility that will mark its strong presence on the global scenario, thereby further strengthening the "Make in India" programme.

Wharfage

Wharfage levied by the Mumbai Port w.e.f. 03.09.2019 was as below:

(In ₹ per tonne)

Sr. No.	Commodity	Foreign		Coastal	
		Dry Bulk	Other than dry Bulk	Dry Bulk	Other than dry Bulk
1.	Asbestos	-	68.57		41.14
2.	Materials, Sand	70.94	68.57	42.56	41.14
3.	Cement, Clinker	70.94	68.57	42.56	41.14
4.	Coal and Fire Wood	98.69	95.40	98.69	95.40
5.	Sulphur, Fertilizers and Fertilizer raw material	88.73	85.77	53.23	51.46
6.	Granites and Marbles	-	68.57	-	41.14
7.	Ores, Ore Pellets and Minerals (other than Iron Ore & iron ore pellets	70.94	68.57	42.56	41.14
8.	Iron ore and Iron ore pellets	70.94	68.57	70.94	68.57
9.	Metals (Ferrous, Non-ferrous) in the form of ingots billets and unmanufacture & metal scrap	70.94	68.57	42.56	41.14
10.	Crude Oil	-	79.24	-	79.24
11.	Salt	8.93	8.64	5.36	5.18
12.	Iron and steel material (excluding scrap, dross, ores)				
	Import	-	238.51	-	143.11
	Export	-	159.01	-	95.40

Mormugao Port

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 are exported through this port. Maximum exports of iron ore take place through this port.

The port has 10 operating berths including a ship repair yard with a floating dry dock. Apart from this, there are also 6 mooring dolphins for handling bulk cargo. The effective rated capacity of the port is 63.40 MTPA. The port handled a traffic of 16.01 million tonnes during the year 2019-20. The largest vessel that can be received at Berth No. 6 of this port is about 2,09,095 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	6	-	1) 80,000 sq. m (approx.) at Berth No.9* (iron ore)
-	14.00	1	-	-	2) 31,900 sq. m (approx.) at Berth No 6 (coal & coke)
-	14.00	-	-	-	3) 35,641 sq. m (approx.) at Berth No 7 (coke and coal).

** Concession Agreement signed on 22.9.2016 with M/s Goa Sea Port Pvt. Ltd for re-developmentation on PPP basis. Mooring Dolphin 4, 5 and 6 are not in operation. Awaiting EC from SEAL.*

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. Three Mooring Dolphins (1 to 3) capable of accommodating Panamax size vessels are available for handling ore, coke, 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 on to barges.

Development of the port as undertaken during 2018-19 is given below:

Development Plans

A. Projects Awarded/ Under Execution

1. Construction of 4-lane port connectivity road at Mormugao port – balance 5.2 km at Chainage 13.10 km to 18.30 km of NH 17 B from Varunapuri junction to Sada junction and flyover from Gate No.9 to NH 17B are under execution. For the balance 5.2 km stretch, Work Order was issued on 14.10.2015 to M/s Gammon India Limited at a cost of ₹ 397.00 crore by State PWD who is executing the project on EPC mode wherein Mormugao Port and NHAI also will be sharing the cost. Work is in progress, 74.53% work has been completed. The work was scheduled to be completed by October, 2020.

2. Circulation Road and Gate Complex for Exit/Entry offices for connecting Four Lane Road Landing at Berth no 11 are under execution. The balance portion of 5.3

km four-lane connectivity to NH-17 B from Varunapuri to Mormugao Port landing at Berth no. 11 is in progress and the same will be commissioned by May, 2020.

3. Floating Jetty at River Mandovi & River Chapora (for IWAI) & Floating Jetty (Four Nos) on EPC basis-Government of India has declared 6 rivers of Goa as National Waterways on 14.10.2016 to facilitate shipping and navigation. For the development of waterways, an MoU has been signed between MoPT, IWAI and GoG, on 3rd May, 2018 (valid for a period of five years). Work Order was issued to the lowest contractor i.e M/s Marinetek India Pvt. Ltd Bombay, vide Work Order No CE/WKS/896/2019/6556 dated 28.02.2019. Project cost was estimated at ₹ 9.60 crore. Work is in progress and was expected to be completed by Nov. 2019.

4. Second Full Rake Wagon Handling Railway line No RD 8A in order to improve efficiency of Railway operation–. Port has undertaken the subject project at an estimated cost of ₹9.91 crore. The "Part A" project of Extension of line No RD 8A costing ₹ 1.32 crore work is in progress.

5. Removal of 2 nos Mooring Dolphins in the water area facing cruise Berth Work Order has been issued to the lowest contractor M/s Sealord Diving & Salvage Pvt. Ltd on 02/03/2019. Work commenced from 18.04.2019 and is in progress. Project cost is ₹ 14.54 crore. Work is in progress and was expected to be completed by Oct. 2019.

6. Development of Navy Base workshop at Bogda – Work Order No.CE/WKS-855/2017/5024 dt. 18.11.2017 has been issued to M/s Abhiyant Realty Pvt. Ltd Panjim. Work is in progress. Project cost is ₹ 3.81 crore. About 94% of the work has been completed.

B. *Projects taken up for Implementation*

1. Redevelopment of Berths 8, 9, and Barge Berths at the Port of Mormugao, Goa–Mormugao Port has taken up the work of "Redevelopment of Berths 8, 9 & Barge berths at the Port of Mormugao" under PPP basis. Modern equipment will be used to handle multipurpose cargo, such as, iron ore, bauxite, limestone, container and general cargo. Berth length to be developed is 1,050 m comprising three berths. Berth will be designed to handle cape-size vessels and will be mechanised with modern equipment for handling multipurpose cargo. The project cost is ₹ 1,145.36 crore. The terminal will have capacity of 19.22 MMTPA. The Concession Agreement has been signed with M/s Goa Sea Port Pvt. Ltd (SPV of Sterlite Port Ltd) on 22.09.2016. The Public Hearing for the subject project was conducted on 27.04.2017 and was concluded on 04.05.2017. GCZMA has now recommended CRZ clearance to the project to MoEF for consideration. Environmental clearance is awaited. The project will be taken up after obtaining Environmental Clearance. These berths are expected to be completed and commissioned by year Dec. 2022 (Phase I) and Dec. 2024 (Phase II).

2. Development of Vasco Bay–Development of Fishing Harbour at Vasco Bay, Mormugao is under execution. The long pending issue of fishing community and encroachers at Vasco Bay was resolved after discussions with High-level committee constituted by Government of Goa on the directives of High Court. The MoU was signed on 22.12.2016 between Mormugao Port Trust, Government of Goa and Goa Fishing Boat Owner's Association and Old Cross Canoe Owner's Association, Vasco. The cost of project is ₹ 104.00 crore. The project will be taken up after obtaining Environmental Clearance. Expected date of completion of this project was Dec. 2020.

3. Development of Passenger Jetty at Vasco Bay–Mormugao – The project cost is ₹ 21.00 crore. CRZ clearance from GCZMA is awaited. The project will be taken up after obtaining Environmental Clearance. Expected date for completion of this project is Dec. 2022.

4. Development of POL Berth at Vasco Bay, Mormugao – The project cost is ₹155.90 crore. The capacity of the project is 2.0 MMTPA. CRZ clearance from GCZMA is awaited. The project will be taken up after obtaining Environmental Clearance. Expected date for completion of this project is Dec. 2022.

5. Development of Coastal/General Cargo Berth at Vasco Bay, Mormugao – The project cost is ₹ 203.00 crore and the capacity is 2.0 MMTPA. CRZ clearance from GCZMA is awaited . The project was schedule to be taken up in 2020-21 after obtaining Environmental Clearance.

C. Projects to be taken up for Implementation

1. Capital dredging of the approach channel, turning circle, Berths 5, 6 & 7 approaches for Capesize vessels at Mormugao Port, Goa – The maximum size of the vessels that can navigate the channel is about 80,000 dwt. In order to facilitate berthing of capesize vessels so as to enhance the capacity of cargo handling at Berth No. 5, 6 & 7 and proposed redevelopment of Berth No. 8 & 9, it has been proposed to deepen the existing outer channel and turning circle from (–)14.1 m to (–)19.8 m and inner channel and approaches to (–)19.5 m Providing deep drafts facilitates berthing of capesize vessels which indirectly reduces the logistic cost and provides benefit to trade. The project will be taken up after obtaining Environmental clearance and subject to resuming of iron ore mining.

2. Berth No1, 2 & 3. Proposed Development of International/Domestic cruise Terminals – To cater to the requirement of International / Domestic cruise traffic,

it is proposed to construct Modern Cruise Terminal. For this purpose, Tenders for Architectural Services and Techno-Economic feasibility services have been invited. Tenders have been received and are under scrutiny. The consultancy works for the above was to be awarded in mid of June and was likely to be completed by Sept. 2019. Subsequently, the tender for construction work will be invited in the third week of September 2019 with the completion period of 12 months. The traffic in mineral/ore/mineral-based commodities, handled by the Mormugao Port during 2018-19 and 2019-20 was as follows: (In tonnes)

Commodity	Export		Import	
	2018-19	2019-20	2018-19	2019-20
Iron ore & iron ore pellets	2.53	1.46	-	-
Other ores	-	-	-	-
Alumina	0.02	-	-	-
Steel slabs/Bars/ Iron & steel	0.27	0.13	-	-
Steel Coils	1.04	1.09	-	-
Granite	0.16	0.15	-	-
POL Product	-	-	0.60	0.66
Phosphoric acid	-	-	0.41	0.11
Ammonia	-	-	0.07	0.01
Fertilizers	-	-	0.27	0.05
Coke/Coal	-	-	8.20	9.57
Caustic Soda	-	-	-	0.01

Wharfage

The revised scale of rates notified on 11th July, 2019 will come into effect after expiry of 30 days from the date of notification that is with effect from 10th August, 2018. Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) rate levied by Mormugao Port Trust in 2018-19 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/Gypsum/ Limestone/Cement	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 2018-19 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	127	During June to Aug.
		223	During Sep. to May

New Mangalore Port

The port has a modern all weather artificial lagoon situated at Panambur, Mangaluru which is in Karnataka on the west coast of India. The port handled 39.15 million tonnes of cargo during 2019-20 as compared to 42.51 million tonnes in 2018-19. In 2019-20, the total capacity of the port was 104.73 million tonnes. The largest vessel that was received at this port was 1,77,327 tonnes of dwt during 2019-20 which unloaded steam coal at Berth No.14 POL (MRPL).

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	14.00	16	01	-	-

The traffic in mineral/ore/mineral-based commodities handled in 2018-19 and 2019-20 was as follows:

(In '000 tonnes)

Commodity	Export		Import	
	2018-19	2019-20	2018-19	2019-20
Iron ore fines	-	-	2026	2163
POL	5507	5126	20338	17486
Rock phosphate	-	-	82	76
Bauxite	-	-	28	28
Gypsum	-	-	123	53
Limestone	-	-	55	55
Coal	114	75	6463	5068
Sulphur	78	47	-	-

Figures rounded off

Wharfage

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) levied by New Mangalore Port w.e.f. 20.09.2019 and during the year 2019-20 was as follows:

(In ₹ per tonne)

Commodity	Foreign Rate	Coastal Rate
Iron ore fines	34.00	34.00
POL	72.00	72.00
Thermal Coal	25.00	25.00
Coal (other than thermal coal) & coke	25.00	15.00
Gypsum	31.00	18.00
Limestone	36.00	21.00
Bauxite	36.00	21.00
Rock Phosphate	41.00	24.00
Sulphur	61.00	37.00

Cochin Port

The traffic handling capacity of the port in 2018-19 was 73.6 million tonnes. The largest size vessel that can be received at this port is 1,13,976 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 34.04 million tonnes of cargo during 2019-20 against 32.02 million tonnes during 2018-19.

The total traffic in mineral/ore/mineral-based commodities handled by the Cochin port during 2017-18 and 2018-19 was as under:

(In '000 tonnes)

Sl. No.	Commodities	Export		Import	
		2017-18	2018-19	2017-18	2018-19
1.	Crude oil	40	-	14171	16086
2.	Bauxite	-	-	13	15
3.	Coal	-	-	44	43
4.	Sulphur	-	-	102	49
5.	Rock phosphate	-	-	86	169
6.	Salt	-	-	93	110
7.	Ilmenite sand	-	-	38	47
8.	River sand	-	-	133	-

Figures rounded off

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

Wharfage

Wharfage charges of the Cochin Port for the year 2018-19 was as follows:

(In ₹ per tonne)

Sl. No.	Commodity	Foreign Rate	Coastal Rate
1.	Minerals & ores		
	(i) Zinc concentrate	99.46	59.74
	(ii) Others	91.15	54.74

Reply received from Cochin Port Trust for the year 2018-19

Development Plans

The project "Refurbishments of South Tanker Berth for laying Heat traced pipeline for BPCL-KR at South Tanker Berth of Cochin Port" is planned for handling plant fuels for BPCL-KR by laying heat traced pipeline. The work commenced on 21.2.2018 and was completed on 28.02.2019.

Cochin Port Trust and Indian Oil Corporation are jointly developing a 4.10 MMTPA Oil-cum-LPG Jetty at Puthuvypeen. It can receive berth vessels with LOA up to 230 m, 13 m draft and 80,000 dwt. The Jetty, when functional, will give access to 100 acres of tank farms in the Puthuvypeen Port based SEZ.

The project 'upgradation of cruise berthing facilities at Ernakulam wharf is for providing International Cruise Terminal facilities inside Ernakulam wharf area of Cochin Port and to cater to the cruise passengers with the functional and service requirements as per the Standard Operating Procedures (SOP) issued by Ministry of Tourism. The project consist of construction of an International Cruise Terminal building of approximate area that is 2,253 m^2 with connected facilities of upgrading /retrofitting the existing Q7-Q8 berth surface for about 420 m length and its back up area up to and around the cruise terminal building. The project was expected to be completed by February, 2020. Insofar as minerals/ores, Cochin Port has handled meager quantities, and therefore, no development programme has been envisaged.

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

JNPT does not have any facility stacking areas to handle ore/mineral separately. JNPT has become a world class international container handling port. The port handled 68.45 million tonnes of cargo during 2019-20 as compared to 70.71 million tonnes in 2018-19.The traffic handling capacity of JNPT as on 2018-19 was 138.87 million tonnes.

Salient Features of Jawaharlal Nehru Port Trust, 2019-20

Draft (m)*		No. of berths	No. of moor-ings	No. of wharves	Stacking area provided (sq. m)
min.	max.				
10	15	15	Nil	Nil	No area earmarked for minerals inside port

**using tidal window*

About 13,89,250 tonnes and 1,74,573 tonnes of crude oil was handled during the year 2018-19 & 2019-20, respectively. The Port does not have storage facility for crude oil. However, the wharfage charges for crude oil during 2019-20 was ₹ 68.65/ tonne.

Development Plans

M/s Bharat Mumbai Container Terminals Pvt. Ltd (PSA) was awarded the development of Fourth Container Terminal on DBFOT basis through a Concession Agreement on 6th May, 2014. BMCT is India's largest FDI project in the Port Sector with an estimated investment of ₹ 7,935 crore spread over eight years for two phases. The project comprises of two phases – each phase comprises 1 km of quay line, 16.5 m 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 got completed on 22nd December, 2017 and was put into operation. The Phase II was in progress and was schedule for completion in December 2022.

Development of Coastal berth

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 dredged depth of 11m at berth pocket back side of the berth is also proposed for handling port crafts with dredged depth of 6 m below CD. Capacity for handling liquid cargo of 1.5 MTPA and general coastal cargo of 1 MTPA has been proposed. The work was awarded to M/s RKEC Projects Ltd and the scheduled date of completion of the project was 23rd May, 2020.

To cater to the future traffic, JN Port, through implementing agency NHAI, had awarded the work of widening of 43.9 km 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 final stage of completion.

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 a cost of ₹ 476 crore was awarded on 07.10.2016 and the work is in progress.

Till June 2019, over all 32 acres of land have been allotted on 60 years lease basis to 21 investors from the Micro, Small & Medium Enterprise (MSME) segment via Tender-cum-auction methodology.

JNPT has also awarded the work of widening and deepening of the channel to M/s Boskalis Smit India. The work was completed in February, 2019. The draft of the channel has increased from 14 to 15 m. This envisages additional capacity of 4.5 MMTPA and DIB approved the project. The J.N. Port Trust has taken advance action and invited tender for jetty and mechanical works. The work was awarded on 27th March, 2019 and the same was expected to commence after receipt of Environmental clearance.

NON-MAJOR PORTS

Cargo handling capacity of non- major ports has increased from 737.75 MTPA as on 31.03.2016 to 987.98 MTPA as on 31.03.2020. The available information on traffic handled by non-major ports during 2018-19 and 2019-20 is furnished in Table-2 and that of facilities for handling and transporting minerals from selected non-major ports are furnished in Table-3.

Table-2: Traffic Handled at Non-major Ports 2018-19 and 2019-20

(In million tonnes)

Commodity	2018-19	2019-20
i) POL	191.65	197.15
ii) Iron ore	44.81	39.96
iii) Building material	16.09	14.73
iv) Thermal Coal & Coking Coal	171.09	178.44
v) Fertilizers (including Raw Materials)	16.22	16.05
vi) Others	142.74	168.72
Total	**582.60**	**615.05**

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

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 traffic handled at non-major ports which was 470.60 MT during 2014-15 increased to 615.05 MT during 2019-20 which was 46.5% of the total maritime traffic of the country. The Maritime States, namely, Gujarat, Andhra Pradesh and Maharashtra accounted for 90.3% of the traffic handled by non-major ports.

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 concession 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 – 3: Facilities for Handling & Transporting and Mineral Commodities Handled at Selected Non-major Ports, 2018-19 and 2019-20

State/ Port	Facilities for Handling & Transporting							Mineral commodity handled (in tonnes)				
	Traffic Handled ('000t)		Draught max. (m)	No. of wharves	No. of berths	Stacking capacity (sq. m)	Largest vessel received ('000 dwt)	Commodity	Export		Import	
	Costal	Overses							2018-19	2019-20	2018-19	2019-20
WEST COAST												
GUJARAT												
Bhavnagar	NA	NA	3.5	1	1	225000	66614	Coal	-	-	517708	1005381
								Limestone	-	-	1190958	1593866
								Salt	132300	59000	-	-
Bedi	498	1346	14	8	-	10000	177236	Limestone	-	-	-	-
								Bauxite	259804	16500	-	35989
Dahej Harbour and Infrastructure Ltd	3322	30733	13	-	1	62500	70000	Coal	-	-	354644	348564
								Rock-phosphate	-	-	436029	397010
								Copper-concentrate	-	-	1198640	1213349
								Copper slag	106650	-	-	-
Jafarabad	2809	3187	9	-	1	-	56892	Cement-clinker	3928603	3912077	-	-
								Coal	-	-	229618	323222
								Pet Coke	-	-	473866	457557
								Bauxite	-	-	110180	107490
								Limestone	-	-	1138213	1110477
								Gypsum	-	-	64100	53985
								Copper Slag	-	-	51650	-
Magdalla Surat	18904	14155	14	01	11	30129	179217	Coal	-	-	9898607	10143229
								Iron ore	-	-	11633643	12628123
								Limestone	-	58200	1637915	1983358
								Iron ore fines	116755	402733	-	-
								Gypsum	-	-	273417	195430
Navalakhi	32	11823	5.0	5	5	247597	182068	Salt	1410517	851794	-	-
								Coal	-	-	10412533	9341808
								Cement	-	-	31914	50183
								Iron ore	-	-	-	1594

(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	Stacking capacity (sq. m)	Largest vessel received ('000 dwt)	Commodity	Export		Import	
	Costal	Overses							2018-19	2019-20	2018-19	2019-20
Okha	1898	2840	8.0	2	2	5000	-	Bauxite	825670	77723	-	-
								Limestone	-	-	1032709	1234323
								Coal	-	2990	981111	1166968
								Cal. Bauxite	13425	7400	-	-
								Pet Coke	4239	-	11550	-
Pipavav	NA	NA	14.5	-	5	-	-	Fertilizer	-	-	1001132	1329491
								Others	140612	109598	1467978	1066222
Porbandar	NA	NA	8.5	NA	2	-	-	Coal	-	-	661027	414038
								Bauxite	276236	103609	-	-
								Limestone	-	-	640920	1182405
Adani Port Hazira	NA	NA	14	-	2	-	-	Gypsum	-	-	235200	354318
								Rock Phosphate	-	-	727058	1139057
								Sulphur Crude	-	-	11001	-
								Limestone	-	-	30000	51500
Alang	NA	NA	-	-	-	-	-	Clinker	-	-	NA	-
Bhavnagar	NA	NA	3.5	1	1	240000	63342	Coal	-	-	1005381	1255736
								Limestone	-	-	1593866	1187138
								Salt	59000	-	-	-
								Stone	249000	-	-	-
								Pig iron	-	-	-	1200
								Pet. coke	-	-	273705	24540
Adani Petronet Dahej	NA	NA	14	2	2	-	90000	Coal	-	-	70.47	4507225
								Rock phosphate	-	-	2.99	241946
								NPK	-	-	-	0.40
								Gypsum	-	-	9.79	1203845
								Limestone	-	-	-	4.08
								Salt	-	0.73	-	-
								Copper Slag	-	0.14	-	-
								Pet coke	-	7528	-	15607
Jakhau Sub Port (Mandvi Port)	NA	NA	4.0	1	1	-	-	-	-	-	-	-
							70000	Cement	252667	157643	-	-
								Coal	-	-	721587	461092
								Gypsum	-	-	38859	-
								Clinker	150902	48029	-	80209
								Salt	2331476	2343368	-	-
Mundra	NA	NA	NA	NA	NA	-	-	Cement	75	-	-	-
KARNATAKA												
Karwar	442	504	6.5	NA	NA	NA	NA	-	-	-	-	-
Kundapura	NA	NA	4.50	700	2	1200	2000	-	-	-	-	-

(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	Stacking capacity (sq. m)	Largest vessel received ('000 dwt)	Commodity	Export		Import	
	Costal	Overses							2018-19	2019-20	2018-19	2019-20
MAHARASHTRA												
Dahanu	352	NA	6.0	-	1	-	-	Coal	-	-	NA	NA
Dharamtar	11756	4801	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	NA	9	NA	2	4000	NA	Bauxite	NA	-	-	-
Jaigarh	NA	NA	14	NA	2	2000	NA	Bauxite	NA	-	-	-
								Iron ore	NA	-	NA	NA
								Limestone	-	-	NA	NA
								Coke	-	-	NA	NA
								Coal	NA	NA	NA	NA
Kelshi	NA	NA	15	NA	NA	NA	NA	Bauxite	NA	-	NA	NA
Ratnagiri	NA	435	5	NA	1	NA	NA	Clinker	NA	-	NA	NA
Redi	NA	NA	4	NA	NA	NA	NA	Iron ore	NA	-	-	-
Revdanda	553	945	4	NA	4	NA	55000	Iron ore	NA	NA	NA	NA
Bankot	NA	NA	NA	NA	NA	NA	NA	Bauxite	-	NA	-	-
EAST COAST												
ANDHRA PRADESH												
Kakinada # (Anchorage Port)	22	1624			NA		NA		NA	NA	NA	NA
EAST COAST												
ANDHRA PRADESH (Concld)												
(Kakinada 3 Ships Deep water Port)	1390	14741	NA	NA	NA	NA	NA		NA	NA	NA	NA
Krishnapat-anam	9862	44509	17.7	-	12	253489	200000	Iron ore	145757	334640	5226911	48480
								Gypsum	-	-	159660	51600
								Barytes	413563	773776	-	-
							Cement	Clinker	695183	66420	-	-
								Feldspar	-	-	19700	-
								Silica sand	-	-	-	25750
								Silica quartz	105352	108463	-	-
								Feldspar	-	19700	-	-
								Soda Ash	-	-	47492	107670
								Dolomite	-	-	-	141500
Rawa	NA	NA	-	-	-	-	-	-	-	-	-	-
TAMIL NADU												
Cuddalore	-	281	@	-	-	80000	@@	-	-	-	-	-
								Silica Quartz	105352	108463	-	-

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.

PRIVATE PORTS

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.

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.

Salient Features of Adani Ports for the Year 2018-19

Draught (m)		No. of berths	No. of moorings	No. of wharves	Stacking area provided (sq. m)
min.	max.				
10.5	17.9	30	3+2+2	-	-

The traffic in mineral/ore/mineral-based commodities handled in 2018-19 and 2019-20 was as follows:

(In '000 tonnes)

Commodity	Export		Import	
	2018-19	2019-20	2018-19	2019-20
Bauxite in bulk	228	393	-	-
Bentonite in bulk	522	36	-	-
Bentonite in Jumbo bags	-	9	-	-
Iron ore fines	-	-	482	191
Iron ore lumps	-	-	91	144
Iron ore pellets	435	329	-	-
Limestone	-	-	105	53
Silica sand	53	80	-	-
Stone/Stone Chips	58	157	-	-

Figures rounded off

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.

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.

Maritime Agenda 2010-20

In the Maritime Agenda, a target of 3,130 million tonnes Port capacity had been set for the year 2020. More than 50% of this capacity was 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 was expected to increase to 1,280 million tonnes. The objective was 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 was expected to be around ₹ 2,77,380 crore. Most of this investment had 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 came out with a Maritime Agenda 2010-20. The Agenda was 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.

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	1180.4
		\(MMTPA)		
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
8.	Captive jetty by ABG Cement Ltd	Hazira Mora (Gujarat)	2	100

Contd

(Concld)

Sl.No.	Project Name	State/Ports Maritime Board	Capacity (Million Tonnes)	Project Cost (₹ in crore)
9.	Captive jetty by M/s Essar Bulk Terminal Ltd - 1100 m (3rd Expansion)	Hazira (Gujarat)	25	2321
10.	Captive jetty by M/s UltraTech 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 Phase-2AE 6.5	1600 500
22.	Development of Puducherry Port through private investment on BOT basis	Puducherry	Phase-1 16.2 Phase-II 10.8	2785 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

FUTURE OUTLOOK

The logistics sector is the backbone of any economy. Despite weak economic sentiments, the Industry will continue to witness growth. India is currently the prime logistics service provider globally. Besides other modes of transportation, maritime logistics is one sector that can grow tremendously unless it is fully explored.

Apart from this, India comprises a significant maritime sector as it is strategically located on the world's shipping routes, having longest coastline of about 7,517 km. With 12 major and 200+ non-major ports, along with a vast network of navigable waterways, the scope of increasing the trade volume is enormous.

The Major Ports in India have been witnessing sustained growth in the last few years, due to the novel & progressive pathways pursued by Ministry of Shipping. Major fillip to the Port Sector by way of introducing vital and long overdue futuristic Port-led development programmes including Sagarmala has been emplaced. 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.