

Indian Minerals Yearbook 2012

(Part- I : General Reviews)

51st Edition

PORT FACILITIES

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GOVERNMENT OF INDIA MINISTRY OF MINES INDIAN BUREAU OF MINES

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6 Port Facilities

1. GENERAL

1.1 Growth

Port provides an interface between ocean transport and land to transport and land-based transport. 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 200 minor ports and 12 major ports in India. 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 ship. Approximately, 95% of the country's trade by volume and 68% in terms of value, is being transported by sea. Though India has one of the largest merchant shipping fleets among the developing countries, its retained its 18th rank in the world in terms of dead weight tonnage (DWT) as on 1.1.2011. The gross foreign exchange earnings of Indian Shipping industry in Financial Year 2011-12 was ₹ 10666.45 crores. The Ministry encompasses within its fold major ports and inland water transport, among others. All major ports in the country are at present, having both rail and road connectivity.

1.2 Sethusamudram Corporation Ltd

The Sethusamudram ship channel project, which is being implemented through the Special Purpose Vehicle (SPV) namely, Sethusamundram Corporation Ltd envisages dredging of a ship channel in the shallow portion of sea to connect the Gulf of Mannar and Bay of Bengal through Palk bay to enable the ship moving between east and west coasts of India and to have a continuous navigable sea route around the peninsula within India's territorial waters.

Dredging work of the Sethusamundram ship channel was awarded to M/s Dredging Corporation of India, a Govt. of India enterprise on nomination basis. The project was inaugurated by the Hon'ble Prime Minister of India on 2.7.2005. Subsequently, based on PILs filed in the Supreme Court, the dredging work in Adam's bridge was stopped on 17.9.2007. At present, the project work is in abeyance in view of the litigation in the Supreme Court of India.

1.3 Private Sector Participation in Major Ports

The private sector is envisaged to fund most of the projects through Public Private Partnership (PPP) in Design, Operate, Finance and Transfer (DBFOT basis) or Build, Operate, Own and Transfer (BOOT basis), etc. Till January, 2013, 22 projects have been awarded. These 22 projects involve a capacity addition of 97.34 Metric Tonnes Per Annum (MTPA) and investment of ₹ 5755.72 crore. The selected projects awarded as on 5.2.2003 are given in Table - 1.

Table - 1: Private Sector Participation

Sl. Project Development No.	Estimated Cost (₹crore)	Capacity (Million tonnes)
Conversion of berth No. 8 as Container Terminal at V.O. Chidambaranar Port	312.23	7.20
2. Berth No. 14 at Kandla Port	188.88	2.00
3. Development of 2MMTPA mechanised coal import Terminal at Berth No. 11 at Mormugao Port V.O.Chidambaranar	204.00	2.00
4. Tuticorin Construction of shallow draft berth for handling cement at V.O. Chidambaranar Port	86.17	2.30
5. Tuticorin Development of NCB-IV for handling thermal coal and copper concentrates at V.O. Chidambaranar Port	355.00	7.28
6. Installation of 2 Nos. of share based unloaders of capacity 2000 MT/hr. in coal berth-2 at Ennore Port Ltd. (Captive)	82.88	4.00

1.4 Inland Water Transport

Inland water transport mode is cost effective, fuel efficient and climate-friendly mode of transport for bulk cargo and over dimensional cargo. It has been a neglected sector. Efforts are being made to develop this mode of transportation.

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.

Inland Waterways Authority of India (IWAI) came into existence on 27.10.1986 for development and regulation of inland waterways for shipping & navigation. The Authority primarily undertake projects for development and maintenance of IWT infrastructure on National waterways.

1.4.1 Inland Waterways

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

- National Waterway-1: Allahabad-Haldia stretch of the Ganga-Bhagirathi-Hooghly river system (Total length- 1620 km) in the states of Uttar Pradesh, Bihar, Jharkhand and West Bengal.
 - National Waterway-2: Dhubri-Sadiya stretch of Brahmaputra River (Total length-891 km) 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) in the state of Kerala.
 - National Waterway-4: Kakinada-Puducherry stretch of the canal along with designated stretches of Godavari and Krishna Rivers (Total length- 1078 km) in the states of Andhra Pradesh and Tamil Nadu and the Union Territory of Puducherry.
 - National Waterway-5: Designated stretches of East Coast Canal, Brahmani River and Mahanadi Delta (Total length-

588 km) in the states of West Bengal and Odisha.

2. MAJOR PORTS

There were thirteen major ports in the country; viz, Kolkata-Haldia, Paradip, Visakhapatnam, Chennai, Ennore and Tuticorin on the East Coast and Cochin (Kochi), New Mangalore, Mormugao, Jawaharlal Nehru, Mumbai and Kandla on the West Coast. Of these, Paradip, Visakhapatnam, Chennai, New Mangalore and Mormugao ports were the five leading iron ore handling ports having mechanical ore handling system. The port of Port Blair in Andaman and Nicobar islands is the 13th port. Out of total 560 million tonnes traffic handled at major ports, Kandla Port is the top traffic handler during 2011-12. Except Ennore Port being Public Sector Undertaking, all the major ports are administered by Port Trust which are autonomous bodies.

2.1 Tariff Authority for Major Ports

The Authority was constituted by the Government of India in 1997 to provide for an independent body to regulate all tariffs (vessel related and cargo related) as also the rates for lease of properties in major Port Trusts and private operators located therein and conditions governing application of rates. The jurisdiction of the Authority is restricted to major port trusts and private terminals operating therein.

2.2 Cargo Handling Capacity and Cargo Handled

The capacity of Indian Ports including major and non-major ports have crossed a landmark one billion tonne per annum on 28.1.2011. The capacity of major port during 2011-12 was 689.83 million tonnes as compared to 670.13 million tonnes during 2010-11. The major ports, therefore, continued to maintain a favourable capacity-cargo equation during the year.

The major ports handled a total traffic of 560.15 million tonnes during 2011-12 against 570.03 million tonnes during 2010-11. Traffic handled by major ports during 2010-11 and 2011-12 is as below:

Traffic Handled at Major Ports 2010-11 & 2011-12

(In million tonnes)

Sl. No.	Ports	2010-11	2011-12
1A.	Kolkata	12.54	12.23
1B.	Haldia	35.00	31.01
2.	Paradip	56.03	54.25
3.	Vizag	68.04	67.42
4.	Ennore	11.01	14.96
5.	Chennai	61.46	55.71
6.	V.O.Chidam- barnar (Tuticor	23.73 in)	28.11
7.	Cochin	17.87	20.09
8.	New Mangalore	31.55	32.94
9.	Mormugao	50.02	39.00
10.	Mumbai	54.59	56.19
11.	JNPT	64.31	65.75
12.	Kandla	81.88	82.50
	Total	570.03	560.15

Figures rounded off.

Source: Indian Ports Association.

The commodity-wise traffic handled at twelve major ports during 2010-11 and 2011-12 is as below:

			(In '000 tonnes)
Sl. No.	Commodity	2010-11	2011-12
1.	P.O.L	179882	179104
2.	Iron ore	87686	60692
3.	Fertilizer	19157	20389
4.	a) Thermal coalb) Coking coal	46145 29001	50834 27997
5.	Containerised cargo	114158	120202
6.	Other	94057	100916
	Total	570086	560134

Source: Indian Ports Association.

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 was catering to the entire Eastern India and 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.

During 2011-12, the break up of traffic handled is as under:

Kolkata: 12.23 million tonnes, and

Haldia: 31.01 million tonnes.

Handling capacity of the port as on 31.3.2011 was as below:

Kolkata: 20.86 million tonnes, Haldia: 50.70 million tonnes.

The largest size of the empty vessel that can be received at the Kolkata Port is 484,276 dwt. At Haldia Dock Complex, an empty vessel having up to 1,50,000 dwt can enter the dock.

Salient Features of Kolkata - Haldia Port

Port	Draf min	max	No. of berths		No. of wharves	Stacking area provided (sq m)
Kolkata	5.1	8.5	33	24	4 (V	134722 (Transit Shed) + 10794 Varehouse)
Haldia	6.1	8.1	17*	-	- (25040 (Transit shed) 892840 open area)

^{*} Including three oil jetties and 2 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.

The traffic in mineral/ore/mineral-based commodities handled at Kolkata Port in 2010-11 and 2011-12 was as under:

(In '000 tonnes)

C 1''	Exp	orts	Imp	orts
Commodity	2010-11	2011-12	2010-11	2011-12
Thermal coal	2173	2346	-	-
Coking coal	-	-	6107	4947
Iron ore	7052	4446	-	-
Iron & Steel	742	785	372	216
Rock phosphate	-	-	161	339
Pig iron	23	4	-	-
Sulphur	-	-	59	60
Mica	92	104	-	-
Metallurgical coke	e 12	-	21	211
Limestone	-	-	754	625
Raw Petroleum co	oke -	-	38	90
Gypsum	-	-	-	17
Bauxite	-	-	2	-
Dolomite	-	-	-	14
Ferro-chrome	86	108	-	-
Non-coking coal	-	-	1818	3266
Manganese ore	-	-	826	1129
Other ore	-	-	-	17
Carbon black	37	42	5	9
Silicon/ Silicon Mangane	- ese	-	1	1
Cement clinker	-	-	48	-

Wharfage

Wharfage on foreign Cargo landed/shipped at Kolkata Port Trust w.e.f. 17.3.2011.

Sl. No.	Item	Rate	
1.	Crude oil	76.50	
	Cargo handled through Mechanical system		
2.	Export Iron ore	38.88	
3.	Export Thermal Coal	43.74	
4.	All other types of coal not specification. Fertilizer raw mater soda ash, and all other dry bulk	rials,	
Cargo	handled through other than Me	chanical system	
1.	Salt, Fly ash	19.44	
2.	Iron ore, sand	19.44	
3.	Limestone, Bitumen, Pig iron, sponge 38 iron and other ferrous metals, All types of coal/coke/ore/other dry bulk cargo not specified		
4.	Cement, Clinkers, Gypsum, Sla	ag 48.60	
5.	Magnesite, granite, all types of fire bricks and other refractory mica block/flake/splittings/was powder mica, non-ferrous metall kinds except ingot of zinc/lead,c.i. goods, rock phosphate other fertilizer raw materials lead conc., asbestos.	y materials, ste/scrap/ als of aluminium/copper, es, sulphur,	
6.	Iron & steel, pipes & tubes	58.32	
-	ge on coastal cargo landed/shi n Kolkata Port Trust	pped	
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.	

The only major sea port in Odisha is Paradip serving eastern and central part of the country. It's hinterland extends across Odisha, Jharkhand, West Bengal, Madhya Pradesh and Bihar.

Salient Features of Paradip Port

Draf	t (m)	No. of	No. of	No. of	Stacking
min	max	berths	moor-	wharves	area
			ings		provided
					(sq m)
11.0	13	14	1	_	-

The port handled 54.25 million tonnes of cargo during 2011-12 and during 2010-11, it was 56.03 million tonnes.

The largest vessel that can be handled is 70,000 dwt. The following developmental projects were under progress:-

 Deepening of existing entrance and approach channel to handle 1,25,000 dwt vessels:

The work is substantially completed enabling achievement of a dredge depth of 17.10 metres in the entrances channel. A small debris prone patch adjacent to the turning circle needed to be removed for overall completion of the project.

 Development of Deep Draught Iron Ore berth on BOT Basis-10 million tpy capacity:

Concession agreement has been signed with M/s Blue Water Iron Ore Terminal Pvt. Ltd on 1.7.2009. After receipt of Forest Clearance on 2.7.2012, BOT operators have been asked to complete all formalities by 8.8.2012 and then bring mobilisation activities to the site.

3. Development of Deep Draught Coal Berth on BOT Basis - 10 million tpy capacity:

Concession agreement has been signed on 10.11.2009 with M/s Essar Paradip Terminal Pvt. Ltd After receipt of forest clearance on 2.7.2012, BOT operators have been asked to complete all formalities. BOT operators have requested Paradip Port

Trust to handover the project site and simultaneously they will also fufill their formalities.

4. Development of multi-purpose berth to handle clean cargo, including container on BOT basis (5 Million tpy):

Letter of award has been issued to HI bidder, i.e Consortium of Sterlite - Leighton @ 23.40 % revenue share to the port. PPT has communicated on 28.12.2012, to the selected bidder to SPIM concession agreement.

5. New Railway line between Paradip-Haridaspur:

Paradip port has 10% equity share in this project executed by RVNL. On completion of the project, there will be considerable reduction of the distance from Bansapati to Paradip and the freight will be reduced by 50 percent. The work is under progress.

6. Construction of concrete road from Paradeep to Cuttak (SH-12) work is under progress.

3.3 Visakhapatnam

It is a natural harbour visakhapatnam port handled 67.42 million tonnes traffic in 2011-12 and 68.04 million tonnes traffic in 2010-11. The largest size of vessel that can be handled in the inner harbour is 11 m draft and in the outer harbour 150,000 dwt and draft up to 11 metres. This is the only port having three international accreditations; viz, ISO 14001; 2004 (EMS)/OHSAS/8001 and ISO 9001; 2000 (QMS).

Salient Features of Visakhapatnam Port

	Draft	(m)	No.of	No.of	No.of	Stacking
	min	max	berths	moor- ings	wharves provided	area (sq m)
Inner harbour	10.90	11.00	18	-	-	NA
Outer harbour	-	17.00	6	2	-	NA

Commodities handled by Visakhapatnam port in 2010-11 and 2011-12 were as follows:

(In tonnes)

C	Exp	Exports		Imports	
Commodity	2010-11	2011-12	2010-11	2011-12	
Anthracite Coal	-	NA	148324	NA	
Bentonite	-	NA	61500	NA	
LAM coke	-	NA	190607	NA	
Granite	144036	NA	-	NA	
Limestone	-	NA	493520	NA	
Manganese ore	124692	NA	92319	NA	
Coking coal	582471	NA	7343803	NA	
POL (crude)	_	NA	11567790	NA	
Ilmenite sand	288455	NA	-	NA	
Steam coal	-	NA	2614787	NA	
Chrome ore	_	NA	15549	NA	
Bauxite	-	NA	323415	NA	
Iron ore	14415237	NA	63500	NA	

Following development plans of port were undertaken during 2011-12:

- 1. Phase-II Deepening of inner harbour entrance channel and turning circle to cater the vessels of 12.5 m draft is in progress.
- 2. Strengthening of 5 berths EQ5, EQ6, WQ1, WQ2, WQ3 in the inner harbour to cater to 12.5 m draft vessels is in progress.

3.4 Ennore

Ennore port is situated on the Coromandal coast about 24 km north of Chennai port along the coastal line in Tamil Nadu. Ennore port has been endowed with large chunks of land.

The facilities available at Ennore port are as below:

1.	Berth Max permissible Length Max permissible Draught Capacity of berth CB1 Capacity of berth CB2	2 (Thermal Coal) 240 metres each 15 metres 8 MTPA 4 MTPA
2.	Size of vessels that can be accommodated	65000/70,000 DWT
3.	Breakwater South North Type	1070 metres 3080 metres Rubble mound with accropode armour protection.
4.	Approach Channel Length Width Depth	3775 metres 250 metres 16 metres BCD
5.	Connectivity	 Excellent road connectivity to NH4, NH5, NH45 Linked to Chennai-Kolkata BG main line.
		3) Connectivity to Chennai airport.

Wharfage

Cargo related charges w.e.f. 21.8.2010 are as below:

S.No	. Nomenclature	Unit	Rate
	Coal and Coke	1 tonne	₹ 130.00
	Other goods	1 tonne	₹ 60.00
	Other goods	Ad valorem	₹ 0.5%

Traffic handled during 2010-11 and 2011-12 is as below:

(In million tonnes)

2010-11	2011-12
11.01	14.96
9.37	13.11
0.59	0.60
0.65	1.25
0.40	-
	11.01 9.37 0.59 0.65

(In tonnes)

The Ennore port handled 14.96 million tonnes traffic in 2011-12 compared to 11.01 million tonnes during 2010-11.

Following projects were completed:

- Marine Liquid Terminal with capacity of 3.0 MTPA completed by Ennore Tank Terminal Pvt. Ltd.
- 2. Coal Terminal with capacity of 8.00 MTPA was completed by M/s. Chettinad International Coal Terminal (P) Ltd.
- 3. General Cargo berth of 1 MTPA was completed.
- Iron ore terminal with capacity 12.0 MTPA was completed by M/s SICAL Iron Ore Terminals Ltd.

3.5 Chennai

The port at Chennai is an artificial harbour situated on the Coromandal coast in south-east India. The handling capacity of the port in 2010-11 was 79.72 million tonnes. The largest size of the vessel that can be received at the port is 175,000 dwt, having a maximum 17.4 m draft and maximum 280 m overall length.

Salient Features of Chennai Port

Draf	t (m)	No. of	No. of	No. of	Stacking
min	max	bertiis	ings	whatves	provided (Sq m)
8.5	17.4	24	-	-	46100

Development Plans

Elevated Port Link road from Chennai port to Maduravoyal, modernisation of the Chennai Port, additional open storage area by reclamation, Deepening of channels, basins and berths are development plan of Chennai Port.

The total traffic handled by the Chennai port during 2011-12 was 55.71 million tonnes. The traffic in mineral/ore/mineral-based commodities handled by this port (excluding commodities handled in containers) during 2010-11 and 2011-12 is given below:

G 114	Exp	orts	Imports	
Commodity -	2010-11	2011-12	2010-11	2011-12
Barytes	571000	NA	-	NA
Coal	-	NA	7109000	NA
Coke &	-	NA	606000	NA
briquettes				
Fluorspar	-	NA	26000	NA
Iron ore	2115000	NA	-	NA
Iron ore lumps	198000	NA	-	NA
Manganese ore	11000	NA	-	NA
Non-ferrous metals	-	NA	-	NA
Bauxite	-	NA	2000	NA
Dolomite	-	NA	618000	NA
Limestone	-	NA	1048000	NA

Wharfage

Cargo related wharfage charges levied by Chennai Port Trust in 2011-12 were as follows:

(In ₹ per tonne)

	Item	Rate
i)	Asbestos, cement, clinker, lime and limestone products	17.16
ii)	Thermal coal	23.00
iii)	Coal other than thermal coal, coke of all kinds and charcoal of all kinds	13.80
iv)	Ores and minerals of all kinds including sized kerbstone/cobblestone for export	16.50
v)	Ores and minersls of all kinds in bulk for import.	28.60
	Iron ore handled mechanically or through handling system at Bharathi Dock	85.00
ii)	Charges for cleaning the ore handling system for receiving the shipment of iron ore fines/calibrated iron ore	2.00

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

3.6 V.O.Chidambaranar(Formerly, Tuticorin)

Tuticorin Port Trust has been renamed V.O. Chidambaranar Port trust w.e.f. 19.2.2011. Tuticorin port is situated on the eastern coast in Tamil Nadu.

It has two operating wings, viz, Zone A, comprising new major port, and Zone B, representing old anchorage port. The largest size of vessel that can be received at the port is 75,000 dwt with length of 330 m at Berth No. IX. Zone B can handle lighterage vessels.

Salient Features of Tuticorin Port

Draf	t (m)	No. of	No. of	No. of	Stacking
min	max	berths	moor- ings	wharves	area provided (Sq m)
5.85	12.80	14	-	-	553000

The total traffic handled by the V.O.C port during 2011-12 was 28.10 million tonnes and during 2010-11 was 25.73 million tonnes.

The import was 19.56 million tonnes and export was 8.54 million tonnes during 2011-12. Development projects undertaken by the V.O.C port under progress include deepening the channel and basin to cater to 12.80 m draught facility for berthing of panamax class vessels.

WEST COAST

3.7 Kandla

This port is a natural harbour situated on the western coast of Gujarat.

Salient Features of Kandla Port

	Draf min	max	No. of berths		No. of wharves	\mathcal{C}
Dry cargo	9.10	12.00	2*	-		There is no special stacking area for mineral commo- dities
Liquid cargo	10.00	10.70	6	5	6	_

^{*} Included 2 cargo berth operated by private operator.

In additon, there was 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. Barges handling operations for coal and fertilizer vessels have commenced from July, 2009. A Bunder basin for handling through barges and country crafts also operates.

The total traffic handled by the Kandla port during 2012-13 was 93.63 million tonnes as against 82.50 million tonnes in 2011-12. The traffic in mineral/ore/mineral-based commodities handled in 2010-11 and 2011-12 was as under:

(In tonnes)

C 114	Exp	Exports I		mports	
Commodity	2010-11	2011-12	2010-11	2011-12	
Bentonite	141122	NA	-	NA	
Fertilizer	-	NA	5806780	NA	
Rock phosphate	-	NA	656000	483967	
Salt	2846914	NA	-	NA	
Sulphur	-	NA	98800	NA	
Zinc conc.	123421	NA	-	NA	
Copper conc.	-	NA	10200	NA	

Wharfage

Wharfage levied by Kandla Port Trust as on 31.3.2011 were as follows:

(In ₹ per tonne)

Commodity	Coastal Rate	Foreign Rate
Liquid cargo		
i) Crude oil	12.00	12.00
ii) LPG (per cu m)	60.00	100.00
iii) POL products (bulk)	26.20	26.25
Fertilizer and raw material including sulphur	14.40	24.00
Cement & clinker	10.80	18.00
Ores and minerals (in all forms)	8.10	13.50
Granite and marbles	10.80	18.00
Metal (ferrous/non-ferrous) (including pipes, plates, pig iron, coil, sheet)	18.00	30.00
Metal scrap	21.60	36.00
Construction materials and sand	1 8.10	13.50
Coal and coke	10.80	18.00
Salt	1.80	3.00
Dry chemicals including soda as	sh 10.80	18.00

Note: In addition to above rates, cargos other than bulk; i.e., break-bulk and non-containerised shall be charged @ ₹18.00 per tonne for foreign and ₹ 10.80 per tonne for coastal cargo supply of port labour.

3.8 Mumbai

Mumbai port is a natural deep water multipurpose port handling 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

Draft (m)		No. of berths	No. of	No. of	Stacking
min	max	berths	moorings	wharves	provided (sq m)
8	10.5	27	-	Berths have wharves of different lengths	No special facility for handling minerals

The total traffic handled by the Mumbai port during 2012-13 was 58.04 million tonnes as compared to 56.19 million tonnes in 2011-12. The traffic in mineral/ore/mineral-based commodities handled in 2010-11 to 2011-12 was as under:

(In '000 tonnes)

- 1'.	Ex	ports	Imports	
Commodity	2010-11	2011-12	2010-11	2011-12
Rock Phosphate	-	-	315	163
Iron and Steel	505	721	4105	3505
Coal	-	-	3869	4321

Wharfage

Wharfage levied by the Mumbai Port in 2011-12 were as below:

(In ₹ per tonne)

Sl. No.	Commodity	Foreign	Coastal
1.	Zinc Ingot	101.05	60.65
2.	Asbestos, Construction Material, sand, cement and clinker, Granite and Marble, Metal (ferrous, non ferrous) in the form of ingots, unmanufactured and metal scrap	34.50	20.70
3.	Coal and firewood	48.00	48.00
4.	Ores, ore pellets & minerals	34.50	34.50

3.9 Mormugao

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

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

The total handling capacity of this port in 2011-12 was 33.00 million tonnes for iron ore and other ores and 5.00 million tonnes for coal/coke. The largest vessel that can be received at Berth No. 9 of this port is about 275,000 dwt.

Salient Features of Mormugao Port (2011-12)

Dra	aft (m)	No. of berths	No. of	No. of	Stacking
min	max		moorings	wharis	area provided (sq m)
-	14.10 No.6)	5 (berth	6 -	fo or to No 2) 30 (to 5 co 3) 70 be 11	80000 sq.mr r iron e (attached Berth b. 9), (Approx. 0000 berth & 6) for all & coke (Approx. 0,000 to rth 10 &) for coke 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 loaded in mid-stream by transhippers. There are five such transhippers and three floating crane owned and operated by private parties and their aggregate assessed loading capacity is 11.50 million tonnes per annum. Ore ships are also loaded by ships gears. At West of Break Water (WOB), there is no draft restriction. At times, large size vessels requiring higher drafts are initially loaded at MOHP (Berth No.9) up to permissible limit and then at outer anchorage (WOB) by transhippers. Six Mooring dolphins capable of accommodating panamax size vessels are also available for handling ore, coke and coal using ships own gear. Ore loaded at these facilities is brought by barges from hinter land through inland waterways.

Development of the port was undertaken during 2011-12, as per following details:

- i) Construction of 4 lane road from Verna Junction on NH-17 to Sada Junction, including flyover from Gate No. 9 to NH-17B near Ravindra Bhavan Baina Bay.
- ii) Construction of non- cargo berth along side the break water.
- iii) Development of coal handling terminal at berth No.7 of Marmagoa Port on DBFOT basis.

- iv) Replacement of three numbers rail mounted stackers.
- v) Testing and commissioning of three numbers receiving yard conveyors at Mechanical ore handling plant.

The total traffic handled by the Mormugao port during 2011-12 was 30.90 million tonnes compared to 50.02 million tonnes in 2010-11. The traffic in mineral/ore/mineral-based commodities handled in 2010-11 and 2011-12 was as follows:

	Exp	oorts	Imports		
ity	2010-11	2011-12	2010-11	2011-12	
	40110040	20020204	275001	161250	

(In tonnes)

Iron ore	40119049	28839204	275881	161358
Iron ore pellets	229609	369115	-	-
Bauxite	25200	-	-	-
Coke	20370	20659	345047	355484
Coal	-	-	6566056	6831979

Wharfage

Commodi

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) rate levied by Mormugao Port Trust in 2011-12 was as below:

	Mineral /ore	Rate (₹/tonne)	Remarks
1.	Bauxite	30.00	At Berth
2.	Coal/coke	18.00 30.00	At Mooring Dolphin At Berth

Iron Ore and pellets handling charges (exported through MOHP at Berth No. 9) in 2011-12 are as below:

Sl. Description No. Goods	Import/ Export rate per tonne or part thereof (in ₹)	Remarks
1. Iron ore	84.24	At MOHP B.No.9
2. Iron ore pelletsi) During the periodJune to August each	90.08	During June to August
ii) During the fair season beginning from Septem to May each year.	158.99 lber	During Sept. 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 handling capacity of this port in 2011-12 was 50.97 million tonnes. The largest vessel that can be received at this port is 90,000 tonnes.

Salient Features of New Mangalore Port

_						
	Draft	(m)	No. of berths		No. of	Stacking area
	min	max	bertiis	moorings	wharves	provided (sq m)
	7.0	14.0	14	_	1	58391 open area

Development of port was undertaken during 2011-12 as per following details:

- i) Additional oil berth No. 13 completed and to be operated by April 2013.
- ii) Mechanised Coal Berth (No.15) for handling coal for thermal plant has been completed and became operational during November 2011.
- iii) Second Civil Handling plant by M/s Bajaj Ambuja Cement is nearing completion and expected to be commissioned by April 2013.
- iv) Strengthening of stacking yards near adjacent to berth No.5,6,7 work is almost completed.

The traffic in mineral/ore/mineral-based commodities handled in 2010-11 and 2011-12 was as follows:

(In tonnes)

C 1'	E	Exports		Imports	
Commodity	2010-1	1 2011-12	2 2010-11	2011-12	
Bentonite powde	r -	-	45735	32000	
Coal	26367	-	2830244	4022000	
Granite	34843	95000	-	-	
Crude oil	-	-	12392779	13081000	
Iron ore/fines/ pellets	3114977	1866000	628811	1170000	
Limestone	-	-	326039	55000	
Gypsum	-	-	84888	188000	

Wharfage

Wharfage (wharf dues including unloading, stacking, plot rent and loading charges, etc.) levied by New Mangalore Port w.e.f. 21.2.12 was as follows:

(₹ per tonne)

Commodity	Foreign Rate	Coastal Rate
Chrome ore	22.20	13.32
Iron ore other	25.90	25.90
than KIOCL		
Crude oil	51.80	51.80
Thermal Coal	18.50	18.50
Coal (other than	18.50	11.10
thermal coal) & coke		
Limestone	25.90	15.54
Manganese ore	22.20	13.32
Granite stones	33.30	19.98
Bentonite & Ball clay	14.80	8.88
Gypsum/clinker	22.20	13.32
Any other ore in bulk	25.90	15.54
Perlite ore	22.20	13.32

3.11 Cochin

The handling capacity of this port in 2011-12 was 41.86 million tonnes. The largest size of vessels that can be received at this port is 3,00,000 dwt.

Salient Features of Cochin Port

Draft	(m)	No. of berths	No. of moorings	No. of wharf's	Stacking area
min	max	bertiis	moorings	witari 3	provided (sq m)
9.14	14.50	19	-	2	179140

The total traffic handled by the Cochin port during 2011-12 was 20.09 million tonnes. The traffic in mineral/ore/mineral-based commodities handled during 2010-11 and 2011-12 was as under:

 $(In \ '000 \ tonnes)$

G1		Ex	port	Import	
Sl. No.	Mineral/ore	2010-11	2011-12	2010-11	2011-12
1.	Coal	_	-	40	34
2.	Crude	102	227	8761	9800
3.	Zinc concentrate	-	-	77	49
4.	River sand	-	-	3	-
5.	Sulphur	-	-	194	171
6.	Rock phosphate	-	-	158	146
7.	Salt	-	-	63	137
8.	Sponge iron	-	-	2	-

Figures rounded off.

Wharfage

Wharfage levied by the Cochin Port were as follows:

		(In	₹ per tonne)			
Sl. No.	Commodity	Foreign	Coastal			
1.	Asbestos	84.00	50.40			
2.	Construction and building materials-					
	(a) Sand, stones	52.00	31.20			
	(b) Granites & marbles	67.00	40.20			
	(c) Cement, clinker, clay, chalk	72.80	43.70			
3.	(a) Coal/coke	56.00	33.60			
	(b Thermal coal	56.00	56.00			
4.	Fertilizer and fertilizer raw	material at Q	10 Berth			
	(a) Sulphur	62.00	37.20			
	(b) Rock phosphate	57.00	34.20			
	(c) Finished fertilizers	57.00	34.20			
5.	Metals and metal product	112.00	67.20			
6.	Metal scrap	90.00	54.00			
7.	Liquid Cargo, acids-					
	(a) Phosphoric acid	109.20	65.50			
	(b) Liquid ammonia	119.00	71.40			
	(c) POL & POL products	65.00	65.00			
8.	Minerals & ores	72.80	43.70			
9.	Salt	14.00	8.40			
10.	Fertilizer and fertilizer raw	material at Ot	her Berth			
	(a) Sulphur	86.80	52.10			
	(b) Rock phosphate	79.80	47.90			
	(c) Finished ferilizer	79.80	47.90			
	11. Gypsum	79.80	47.90			
12.	Zinc concentrate 13. Iron ore	79.80 72.80	47.90 43.90			
14.	Ilmenite sand	52.00	31.20			
15.	Sponge iron	72.80	43.70			
16.	River sand	52.00	31.20			

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

JNPT does not have any facility to handle ore/minerals, separately. JNPT has become a world class international container handling port. The largest size of the vessel that can be received at the port is 100,000 dwt. The handling capacity of JN Port as on 31.3.2012 was 64.00 million tonnes.

The total traffic handled by the port during 2010-11 was 64.31 million tonnes and during 2011-12, it was 65.73 million tonnes. JNPT has not handled any mineral/ore cargo during 2010-11 & 2011-12.

Salient Features of Jawaharlal Nehru Port

Draft	(m)		No. of		Stacking
min	max	berths	moorings	whart's	area provided (sq m)
_	12.5	12	8 Tugs 9 Launc	5 hes	-

4. NON-MAJOR PORTS

The available information on traffic handled by non-major ports during 2010-11 to 2011-12 is furnished in Table-2 and that on facilities for handling and transporting minerals from selected non-major ports is given in Table-3.

There are 200 non-major ports in the country controlled by State Governments and Union Territories. These are in Gujarat (42), Maharashtra (48), Goa (5), Karnataka (10), Kerala (17), Tamil Nadu (15), Andhra Pradesh (12), Odisha (13), West Bengal (1), Daman & Diu (2), Lakshadweep (10), Puducherry (2) and Andaman & Nicobar Islands (23). Traffic at

non-major ports and private ports is growing at 11.74% amd their share is expected to grow from 26.30% in 2005-06 to 30% during 2011-12.

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

Gujarat Maritime Board (GMB) is a Government of Gujarat Undertaking. Along the 1600 km of coastline of Gujarat, there are 41 ports of which Kandla is a major port. Out of remaining 40 ports, 11 are intermediate ports and 29 are minor ports under the control of Gujarat Maritime Board. Those ports can be broadly classified into three categories:-

- 1. Three all wheather ports viz., Porbandar, Okha and Sikka with all weather direct berthing facilities.
- 2. Seven ports are all weathered lighterage ports.
- 3. The remaining thirty ports are fair weather lighterage ports for sailing vessels and fishing boats.

The minor and intermediate ports of Gujarat handled about 8.5% of national shipping cargo. Neverthless, Gujarat ports handle about 16 million tonnes of cargo which accounts for 70% of the total cargo handled by all major ports of India.

The Government of Maharashtra has encouraged development of 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, Jaigad Port (Lavgan), Vijaydurg Port, Redi Port, etc.

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

Table – 2: Traffic Handled at Non-major Ports 2010-11 and 2011-12

(In '000 tonnes)

	Total	315358	350042
vi.	Others	48200	51804
	(including Raw Materials)		
v.	Fertilizers	12725	14192
iv.	Coal	58462	78426
iii.	Building material	12327	8210
ii.	Iron ore	38266	36277
i.	POL	145378	161133
Com	modity	2010-11	2011-12

Source: Update on Indian Port Sector (31.3.2012), Transport Research Wing, Ministry of Road Transport & Highways, Government of India.

PORT FACILITIES

Table – 3 : Facilities for Handling & Transporting and Mineral Commodities Handled at Selected Non-major Ports, 2010-11 and 2011-12

State/ Port		es for Ha	ındling &	Transporti	Mineral Commodity Handled (in tonnes)						
	Handling capacity ('000t)	Draft max (m)	No. of wharf's	No. of berths	Stacking capacity (sq m) ('000 dw	Largest vessel received	Commodity		xport 0-11 201		port 11 2011-12
WEST COAS	Г										
GUJARAT Bhavnagar	800 to 1000	12.5	2	1	249039	-	Coal Limestone	-	-	200738 101985	529903 378087
Bedi, Jamnagar	-	14	_	_	_	_					
Dahej Harbour and	3500	13.0	-	1	16500	76.75	Coal Rock	-	NA	315091	NA
Infrastructure Ltd							phosphate Copper	-	NA	371603	NA
							concentrate	-	NA	1266257	NA
Jafarabad	40	9	-	1	-	56.42	Cement clinker 4073	974	3702767	-	-
							Coal	-	-	388988	415273
Magdalla Surat	_	12	_	11	30129	152.06	Coal	-		4141207	
							Iron ore *Limestone *Iron ore	-	-	6970266 844700	6644912 1217893
							fines 948	593	98777	108650	95387
Navalakhi	3000	5.0	5	5	205742	185777	Gypsum	-	-	37700	-
								685	182792	-	-
							Coal Cement	-	-	4244147 32850	68584
Okha	1626	8.0	2	2	50000	-	Bauxite	-	69028	-	-
							Limestone	-	-	420420	-
							Coal Coke	-	12701	681189	-
Pipavav	4000	14.5	-	5	-	90.0	Rock phosphate	-	-	36300	-
							Limestone	_	-	541046	578982
							Gypsum	-	-	123814	235366
							Bauxite Silica sand	-	-	50821	110081 21300
Porbandar	6560	8.5	NA	2	61.41			000	160000	3950000	
							Limestone	-	-	-	1540000
Hazira Surat	12.3		1	_		_	Bauxite	-	690000	-	-
Along Bhavnag		-	-	-	-	-	-	-	-	-	-

(Contd.)

PORT FACILITIES

Table - 3 (Contd.)

					Transportin	<u> </u>					n tonnes)	
State/ Port	Handling capacity	Draft max (m)		No. of berths	Stacking capacity (sq m)	Largest vessel received ('000dwt)	Commodity	Export 2010-11 2011-12			port	
	('000t)							2010-11	2011-12	2010-11	2011-12	
Sodia	-	-	-	-	-	-	-	-	-	-		
Salaya Adani Dahej	2.136	14	- 2 15	- 58000	106.67	-	-	-	-	-		
Sikka	-	-	-	-	-	-	-	-	-	-		
Veraval Port	38.14	3.5	-	2	30000	-	-	-	-	-		
Mandvi Port	-	4.0	1	1	-	-	Bentonite	97370	261750	-		
							Bauxite	80766	135964 31500	-		
							China clay Cement	30730	4300	-		
Jakhau Port	-	6.0	-	3	-	-	Coal	-	-	386513	534159	
AP & SEZ LT	D63381	17.3	-	17	30000	306	Bentonite	332057	246420	-		
Mundra							Kaolin	61300	-	-		
							Clay Bauxite	2000 307821	553921	23844		
							Gypsum	-	-	_		
•							Salt	32200	6870	-		
							Cement	50	19800	-		
Mundra	-	7.30	1	1	-		Clinker	39412	-	-		
							Iron ore Met coal	49000 497493	374100	_		
							Bauxite	-	-	6014		
							Bentonite	7001	33730	-	,	
KARNATAKA		,	2	.0000			NT A	N. A	NT A	NT A	NT 4	
Bilikere	60.9 N tr	iction	(Iro	60000 on ore) 20000 n ore)	_	_	NA	NA	NA	NA	. NA	
Karwar	-	3.5	1	2	50 (acre)	60	-	-	_	_	-	
Kundapura	200	4.50	-	2	12000	2	_	_	-	-	-	
MAHARASH Dahanu	TRA 445	6.0	-	1	-	-	NA	NA	NA	NA	. NA	
Dharamtar	5088	5	-	2	-	-	NA	NA	NA	NA	. NA	
Dighi	2	10	-	1	_	_	NA	NA	NA	NA	. NA	
Jaigad	371	5.5	_	_	_	_	NA	NA	NA	NA	. NA	
Kelshi	305	3.0	1	1	_	0.8	NA	NA	NA	NA	. NA	
Ratnagiri	365	5	_	1	_	_	NA	NA	NA	NA	. NA	
Redi	529	4.0	-	2	_	_	NA	NA	NA	NA	. NA	
Revdanda	1029	8.0	_	-	_	_	NA	NA	NA	NA	. NA	

Table - 3 (Concld.)

		Faciliti	es for Handli	ing & Tr	ansporting	Mineral Commodity Handled (in tonnes)					
State/ Port	Handling	Draft	No. of No		C	Largest vessel received ('000dwt)	Commodity	Export		Import	
	capacity ('000t)	max (m)	wharves be		apacity sq m)			2010-11	2011-12	2010-11	2011-12
EAST COAS ANDHRA PE											
Kakinada # 819502 (Anchorage Port)		Open road-sted-port, no separate stacking yard for minerals					Cement (million tonne)	NA	NA	. NA	NA
							Rock Phosphate (million tonne)	NA	NA	. NA	NA
							Non Coking (million tonne)	, NA	NA	. NA	NA
(Kakinada 3 s deep water po		9.5	_	_		NA	NA	NA	NA	. NA	NA
Krishnapat- anam	10000	14.2	-	4 2	77548	120	Iron ore Gypsum Rock	NA NA	NA		NA NA
Rawa	2500	_	_	_	_	_	phosphate -	NA NA	NA		NA NA
TAMIL NAD Cuddalore 20	-	@	_	_	80000	@@	_	-	-	_	-

[@] not applicable being a roadstead port.

Two ports namely 1. Kakinada Anchorage Port working under Govt. of Andhra Pradesh and 2. Kakinada deep water port working under private organisation M/s Kakinada Sea Port Ltd in East Godavari district, Andhra Pradesh are working at Kakinada. Two more ports namely, 1. Gangavaram Port in Visakhapatnam district owned by M/s Gangavaram Port Ltd and 2. Krishnapatnam Port in Nellore district owned by Krishnapatanam Port Ltd.

5. PRIVATE PORTS

5.1 Major Development Projects International Container Transhipment Terminal (ICTT) at Vallarpadam

The International Container Transhipment Terminal (ICTT), Vallarpadam is India's first dedicated International Container Transhipment Terminal. It was developed by Cochin Port Trust and M/s India Gateway Terminal Pvt. Ltd (IGT), a subsidiary of M/s Dubai Port World (DPW) through a Public Private Partnership on Build, Operate and Transfer (BOT) basis. It was dedicated to the nation by the Hon'ble Prime Minister of India on 11th February, 2011.

This is a major milestone achieved in maritime sector in the development of the country's logistics infrasructure. The ICTT has been developed with facilities for handling mother container ships of 8000 - plus TEUs capacities and is a state-of-the-art terminal with modern cargo handling equipment and related super-structures to have an annual throughput of 3 million TEUs. The BOT operator has completed the construction of phase-1 of the Terminal with an investment of approximately ₹ 1,600 crore. The first phase has a quay length of 600 m, with a handling capacity of one million TEUs. This will be increased to 1,800 m in the final phase.

^{@@} Any size being an anchorage port.

5.2 Adani Ports and Special Economic Zone Limited (APSEZ)

India's largest private port and special economic zone, was incorporated as Gujarat Adani Port Limited (GAPL) in 1998 to develop a private port at Mundra, on the west coast of India. The company commenced commercial operations in October 2001. Mundra Special Economic Zone Limited (MSEZL) was incorporated in November 2003, to set up an SEZ at Mundra. MSEZL was merged with GAPL in April 2006 and the company was renamed as Mundra Port and Special Economic Zone Limited to reflect the nature of business. The board of MPSEZL on Nov 21, 2011 has approved a proposal to change the company's name to Adani Ports and Special Economic Zone Ltd. and this change in name from MPSEZL to APSEZL has come into effect from Jan 6, 2012.

Mundra Port is strategically located for global trade on the northern coast of the Gulf of Kachchh in Gujarat on the west coast of India. Mundra Port provides a convenient international trade gateway to Europe, Africa, America and the Middle East. Mundra has a deep draft (12.5 m – 17 m) which enables large vessels like Panamax and Super Post Panamax carriers to dock alongside its berth. It also has a large land area available for development, part of which is now the Mundra SEZ which proposes to attract port-led industrial development.

Mundra Port is well connected to the Indian railway network. The port has 7 railway sidings and two dedicated diesel locomotives which can handle double stack container trains. A 64 km private railway line has been developed which connects the port with the national network at Adipur. Adipur falls on the broad gauge route from Mumbai to Bhuj.

The storage facilities are as follows:

- 1. Closed godowns measuring 1,37,000 sq m for wheat, rice, sugar, de-oiled cakes (DOC), fertilizer, fertilizer raw materials (FRM), etc.
- 2. Well demarcated open storage space of 8,80,000 sq m for steel sheets, plates, coils, scrap, clinker, salt, coal, coke, bentonite, etc.

3. Open storage alongside rail siding of 26,000 sq m.

APSEZ has an effective capacity to handle 185 million tonnes of cargo per annum - the largest amongst all operational ports in India. APSEZ handled 64 million tonnes of cargo in 2011-12 and 51.68 million tonnes in 2010-11. The port operations in India started with Mundra and at present APSEZ has presence in Mundra, Dahej, Hazira, Goa, Visakhapatnam and Kandla.

The 64 kms private rail line was developed by APSEZ and connect the port to handle the nearest Indian rialways railhead at Adipur. APSEZ is connected to northern and western states and NCR through Palanpur route and rest of hinterland by Ahmedabad route.

5.2 Essar Ports

Essar Ports is India's second-largest private sector port and terminal company by capacity and throughput. It develops, owns and operates ports and terminals.

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.

The company is in the process of expanding its existing aggregate ports capacity to 158 million tpy. Besides, a new port at Salaya in Gujarat and two terminals at Paradip in the state of Odisha on the east coast of India is being developed.

The company's sites at Vadinar, Hazira and Salaya are strategically located on the western coast of India in the state of Gujarat to cater the growing demand from the land-locked northern, north-western and central regions of India and are well connected to the state highways and will have connectivity to the railway network in

future. Its sites at Paradip are located on the eastern coast of the state of Odisha to serve mineral and metal-rich eastern India and are well positioned to serve cargo for the steel and power industries.

The highest-ever cargo handled in a year by ESSAR is 54.52 MMT in FY 13 compared to 43.23 MMT in FY 13 showing an increase of 26 percent.

Projected performance:

The construction of a 20 MMTPA coal berth of Saloya is in progress. Construction of a deep draft coal terminal at Paradip is expected to commence during 2014. Environment clearance and forest clearance has been received.

FUTURE OUTLOOK

As per the 12th Five Year Plan period (2012-17), the projected capacity during the terminal year of 12th Five Year Plan for the major ports would be 1229.24 MT, nearly 1.76 tonnes of the existing capacity. The expected demand by the end of 12th Five Year Plan in terms of cargo handling at major port as per 12th Five Year Plan is 943.06 MT with an estimated annual growth of 10.98 percent. The total plan outlay projected to augment the capacity by 532.71 MT is ₹ 67295.54 crores. Most of investment is expected to flow from private sector i.e. ₹ 51,036 crores (76%) and the remaining share, of 24% is anticipated from internal resources and budgetary support of the Government.