

## The Port of Paradip : Mangrove Forest to a Major Port

*Prabhat Kumar Nanda*

The Port of Paradip, one of the Major Ports of India was mainly constructed on the land of Sandhakuda, Bhitargarh and Bijaychandrapur of Jagatsinghpur district which was a part of Cuttack district during the period of the inception of the Port. It was a dense mangrove forest with full of flora and fauna. Prior to the sixth decade of the twentieth century, there were no active human activities except a few people of nearby villages, who used to visit the area for collection of wood, hunting of wild animals and catching of fish. The area is blessed by nature being surrounded by Bay of Bengal, river Mahanadi, Atharbanki Creek and a number of small creeks flowing across the land.

The place had a glorious history stretched from Puranas to British rule in India. The area is named after Shree Parashara, the celebrated monk of India. Monk Parashara had divine direction to meditate for years together to inculcate, knowledge and enlightenment. He was in search of a dense forest with natural beauty away from the human activities and disturbances. After a great search, he selected the confluence point of the river Mahanadi as the area was blessed with God-gifted beauty and solitude. He engaged himself in meditation for many years and by the influence of such sacred activities, the entire area was filled with divinity. After the return of

monk Parashara, the area was named as “Paradweepa” (i.e. Sacred Island). The Port of Paradip is mainly situated on an Island surrounded by Bay of Bengal, river Mahanadi and Atharbanki Creek. In due course of time, the public parlance named the area as Paradip.

During the medieval period, the area was a centre of Buddhist activities. Puspagiri University of Buddhism, monuments of Lalitgiri, Udayagiri and Ratnagiri at a distance of about seventy kilometers from Paradip were visited by many foreign tourists. Nearby Ports like Chelitalo, Hariharpur played important role for the voyage of such tourists. From 5<sup>th</sup> to 9<sup>th</sup> century such area was actively used for the alma mater activities of Mahayanic Tantra and Yoga based on principles of Buddhism.

With the decline of Buddhism in Odisha, the area could not play significant role for about eight centuries. During the seventeenth century Sendha Dynasty started ruling the area and emerged as a mighty sea power. “Sendha” title was awarded by the Raja of Dhobaigurh to Mallik Samanth in the year 1645 A.D as the later by his unwanted courage and physical prowess took a frantic bull by the horns and brought an end to it. Kings of Sendha dynasty ruled the area for two hundred thirty years. Bidyadhar Sendh was the last king of Sendha Dynasty at Kujanga. In the

year 1876, Burdhan Maharaja took the possession of Kujang and the administration of the area was taken over by the Anchal Adhikari, Government of Orissa in the year 1952.

Maritime activities around Paradip was recorded in history during the period 1600 to 1800 A.D. The Port of Hariharpur rose to eminence as an effective Port and boat building centre. Later Batighar and Hukitola were Ports of operation used by French, Portuguese and English Traders. Batighar, popularly known as False Point Light House is about one and half century old. Such Port was used mainly for export of rice and spices. The historical Light House near the Port have been serving mariners of east-coast by disseminating marine signals for safe voyage. Hukitola was a prominent Port for small vessels and anchorage point for big vessels. The Ware House constructed one hundred years ago, is now even present in dilapidated condition.

Both Batighar and Hukitola were abandoned for trade for political and economic reasons. The historical light house at Batighar (False Point Light House) is still in operation, flashing during night, breaking the solitude of Mahanadi estuary and Bay of Bengal.

In 1948 the Port (Technical) Committee formed by Government of India felt the necessity of a Port between Visakhapatnam and Calcutta. After the independence, Port of Dhaka was separated from the maritime map of India and to compensate such loss, it was required for another Port on the east coast.

Central Water & Power Commission was requested by Government of Orissa to explore the possibility of commissioning a Port in the Mahanadi river delta. CWPC recommended for a Port at Paradip on Mahanadi river in the year 1950. A group of consulting engineers of France were engaged by the Government of India

in 1951 to offer advice for a particular site for the Port in the delta of the Devi, Mahanadi and Dhamra rivers.

French Mission suggested the construction of Port at the mouth of the Mahanadi river. As per their suggestion the Port facilities should be located within the estuary with an approach channel dredged through the bar and protected by breakwaters. Study was also conducted by Indian Navy in the year 1951 for the movement of vessels from sea to Paradip Port and observed that there was no hindrance to shipping to the Port of Paradip. Central Water and Power Research Station, Pune conducted a model study during 1954 to prefer between two alternatives viz. an estuarine harbour and a coastal harbour. Such study continued upto 1958 and recommended for a lagoon type harbour. Meanwhile during 1956, Mr.I.G. Chacke, Officer-on-Special Duty (Minor Ports) studied the feasibility of investment of funds for the development of Paradip Port under Second Five Year Plan. He suggested to declare Paradip as minor Port. In the same year, Kinoshitra & Company of Japan after detail study through Tokyo University recommended for the harbour just south of the Mahanadi.

In 1958, the Intermediate Port Development Committee of Government of India accepted the report of Mr.Chacke and Paradip was declared as a Minor Port. Port of Paradip started as a fair weather anchorage Port for export of Iron Ore through lighters to take Iron Ore to the Ship at the anchorage. During such period, Chaumuhani at a distance of about 15 kilometers from Paradip was the centre of transportation of Iron ore through barges. Iron Ore transported by big boats from the mines head and brought to Chaumuhani by Taladanda Canal. Iron Ore were further transported to the anchorage point of Bay of Bengal for bading in ships for

shipment to different Ports of Japan. The reminiscences of damaged barges named as Gajaraja, Kites etc are now even visualized at Chaumuhani.

M/s.Rendel, Palmer & Tritton, a consulting engineering firm of United Kingdom, popularly known as 'RPT' recommended for a lagoon type deep water Port at Paradip. After one year study, report was submitted in June, 1962 and Government of Orissa started the construction work on the 15<sup>th</sup> March, 1964.

The 3<sup>rd</sup> January, 1962 is a red-letter day in the history of Paradip Port. Pandit Jawaharlal Nehru, the first Prime Minister of independent India laid the foundation stone of the Port and dedicated the endeavour to the people of India with following enunciation "Willed by the people, I commend you, to this another National Adventure". The foundation stone with the above enunciation in Odia, Hindi and English was laid being prepared in the black granite stone. On careful analysis, it is observed that the writing of the text on the foundation stone was a departure from the prevalent style of writing of foundation stone. Usually in every foundation stone the name of the person laying the foundation stone and the name of the project/industry etc along with the chief guest are engraved/painted on the stone. The foundation stone now displayed in front of the Jawahar Guest House depicts only the saying of Pt.Jawaharlal Nehru and the date of the function. Like that of conventional writing on foundation stones, there are no mention of the dignitaries present during the function. It is analysed that when Biju Pattnaik requested Pt.Nehru for laying of the foundation stone, Pt.Nehru was not sure about the completion of the Paradip Port Project. Hence, instead of normal writing on the foundation stone i.e. the name of the inaugurator, the project and the date of inauguration etc with dignitaries

present during the ceremony, he only preferred for a statement as a message to the nation.

Dignitaries like Biju Pattnaik, the then Chief Minister of Orissa, Sri Y.M.Sukthankar, the then Governor of Orissa, Sri Nilamani Routray, the then Minister of Commerce and Nilakantha Mishra, Chief Engineer of the project were present in the ceremony but their names were not recorded in the foundation stone.

As per the request of Government of Orissa, Government of India took over the management of Port from Government of Orissa on 1<sup>st</sup> June, 1965. Later Paradip Port established the firm position in the maritime map of India as a Major Port on the 8<sup>th</sup> April, 1966. The first Trust Board was formed on 1<sup>st</sup> November, 1967. The Port which was commissioned for export of Iron Ore to Japan, was later developed as a multi cargo Port. The Port commissioned with the single berth for handling of Iron Ore has added 14 more berths in her lap by the 1<sup>st</sup> decade of 21<sup>st</sup> Century. The Port which was started in the year 1966 with the handling of cargo within few thousand tones of iron ore, has achieved the glory of handling more than 50 million tonnes of cargo during the 1<sup>st</sup> decade of 21<sup>st</sup> Century and the Port has also set the target of handling more than 100 million tonnes of cargo by the end of 2<sup>nd</sup> decade of 21<sup>st</sup> Century promising to be the main commercial hub of Eastern India.

#### **LOCATION:**

Paradip Port is situated 210 nautical miles south of Kolkata and 260 nautical miles north of Visakhapatnam at Latitude 20° - 15'-55.44" N and Longitude 86° -40'-34.62" E. It is strategically situated so as to serve a vast hinterland spreading over the States of Orissa, Jharkhand, Chhattisgarh, Madhya Pradesh, Uttar Pradesh, Bihar and West Bengal.

## CARGO PROFILE:

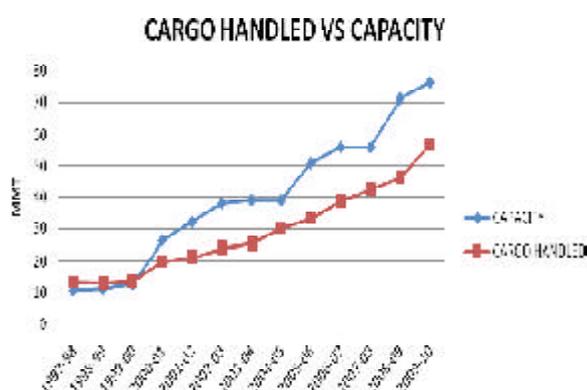
Initially port was started as a monocommodity port to handle iron ore only. There was no rail connectivity to this port for transportation of cargo from hinterland. The port was only connected by an “Express Highway” presently known as National Highway- 5A to Daitari Mines. The Iron ore was transported by Mitsubishi Bottom Dump Trucks and was stored in a twin stackyard. All the activities for cargo handling at the port were carried out manually. The Port could be able to handle eighty-four (84) numbers of vessels with traffic of 67080 metric tonnes during 1966-67.

After nine years, Paradip Port diversified its cargo profile by constructing new facilities. In the year 1975, the first general cargo berth now known as EQ-1 was commissioned for handling of care foods, sugar, wheat, and other general cargoes. Afterward, Paradip Port aggressively continued to augment its capacity by constructing new berths and procuring new state-of-art equipment in order to bridge supply-demand gap. As a result, the traffic of the port started exhibiting upward surge leveraging on its competitive advantage over other ports and locational advantages. The installed capacity in million metric tonne (MMT) vis-à-vis the cargo handled for last thirteen years is charted out in the *Exhibit 1*.

Paradip Port handled an all-time record traffic of 57.01 MMT during the year 2009-10 surpassing the previous year record of 46.41 MMT handled during 2008-09 registering a growth of 22.84% over the previous year. Paradip Port achieved the highest growth rate in traffic handling amongst all the Major Ports during the year 2009-10 beating the competition and slow Export/Import business in international market. Paradip Port’s position had improved to 5<sup>h</sup> position from earlier 8<sup>h</sup> position amongst the

Major Ports in terms of volume of traffic handled. The traffic handled at this port during the last six years has more than doubled. The principal commodity-wise cargo handled during 2009-10 compared to 2008-09 is indicated at **Table 1**. The growth of traffic at the Port since inception over years is charted out in the *Exhibit 2*. The charts showing the cargo handling trends for principal commodities like Iron Ore, Thermal Coal, Coking Coal and POL & Crude are shown in the *Exhibit 3*.

At present, the Port is equipped with eight general cargo berths, two mechanised coal handling berths, one mechanised iron ore handling berth, one oil berth, one single point mooring (SPM), one Ro-Ro Jetty apart from two captive berths for PPL and IFFCO to serve the maritime industry by handling dry bulk, break bulk, liquid bulk, project and over dimensional cargoes as well as containers. Now port is capable of handling almost all types of cargoes like iron ore, thermal coal, coking coal, chrome ore, manganese ore, charge chrome, ferro chrome, ferro manganese, limestone, hard coke, ingots and moulds, billets, finished steel, scrap, fertilizer, clinker, gypsum, project cargo, containers, clean cargo, POL and crude oil.

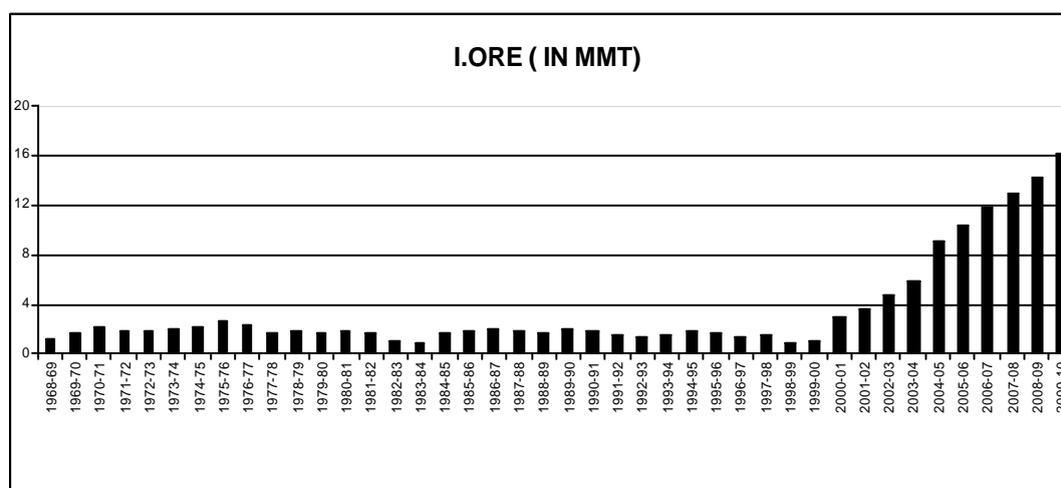
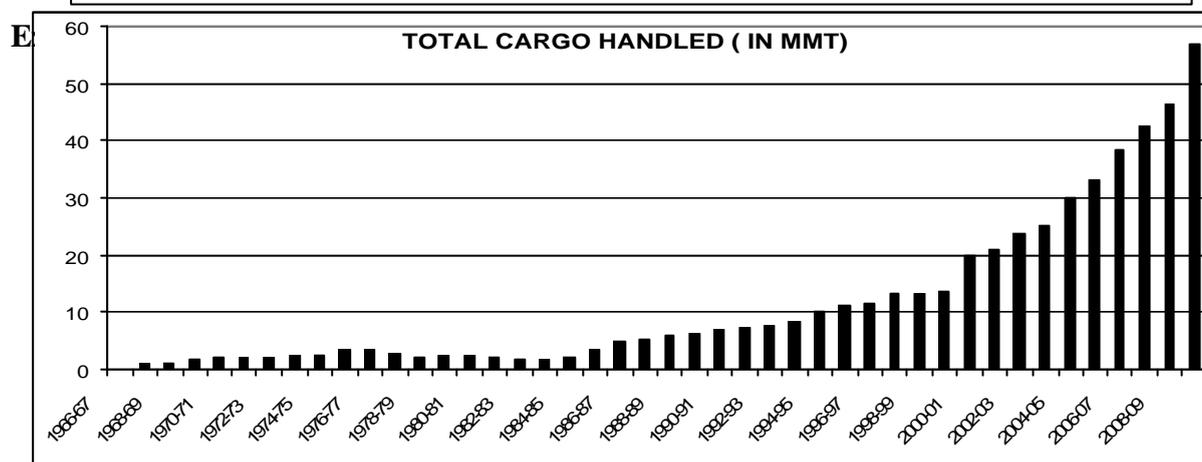


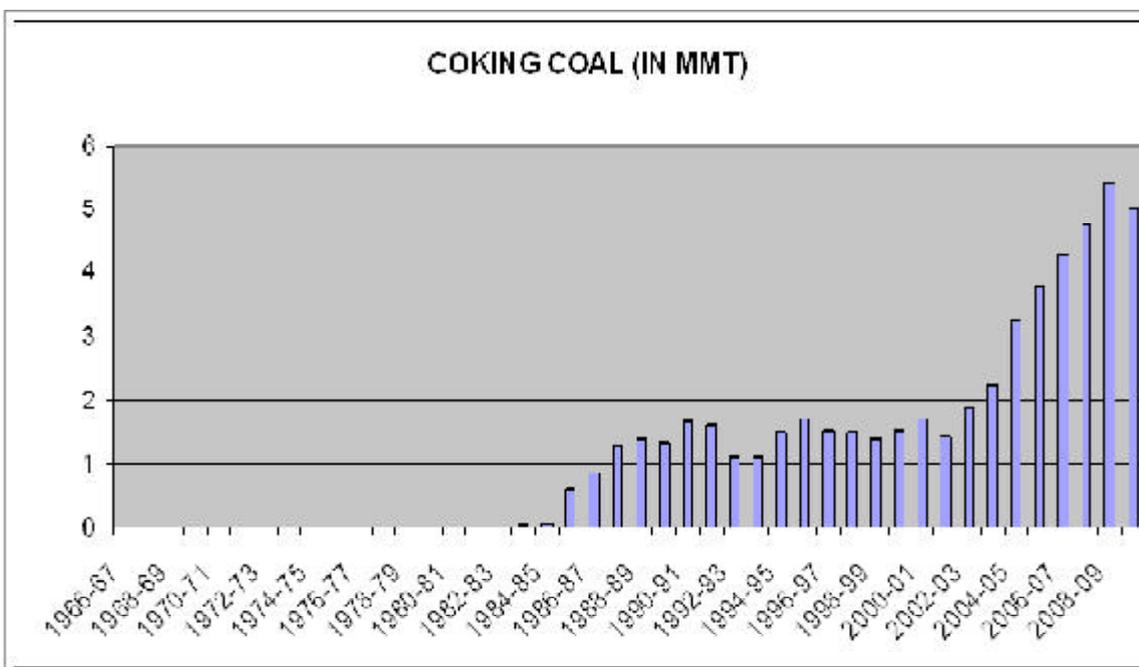
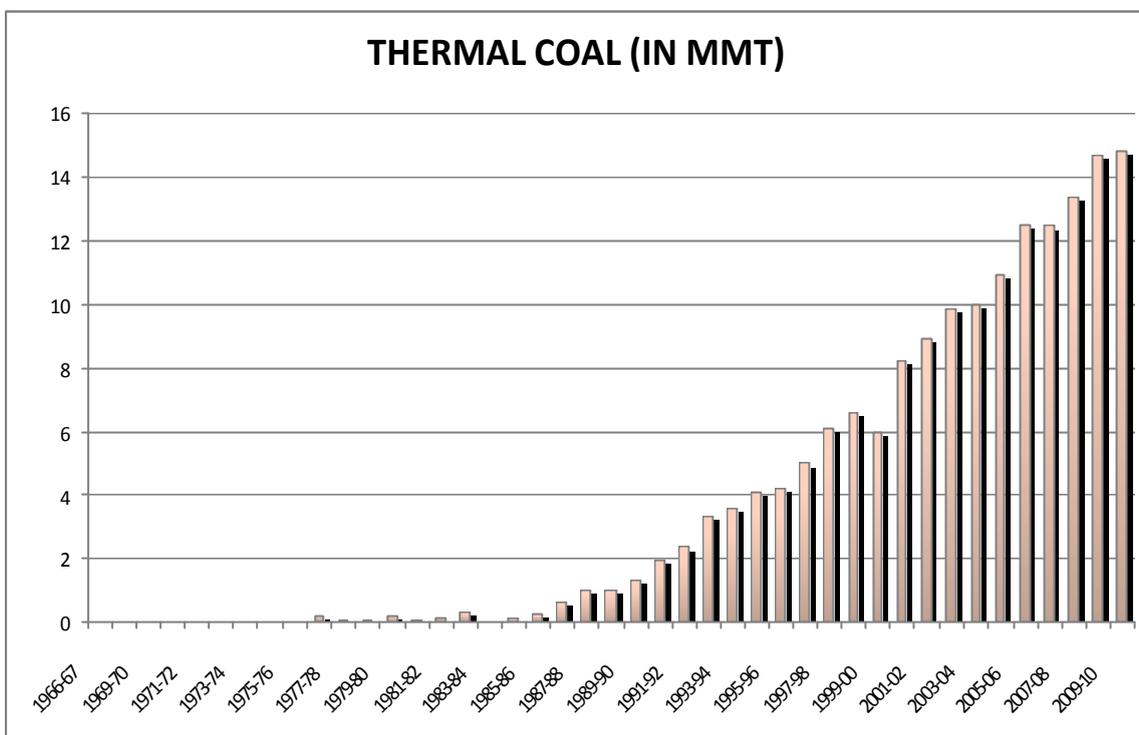
**Exhibit-1**

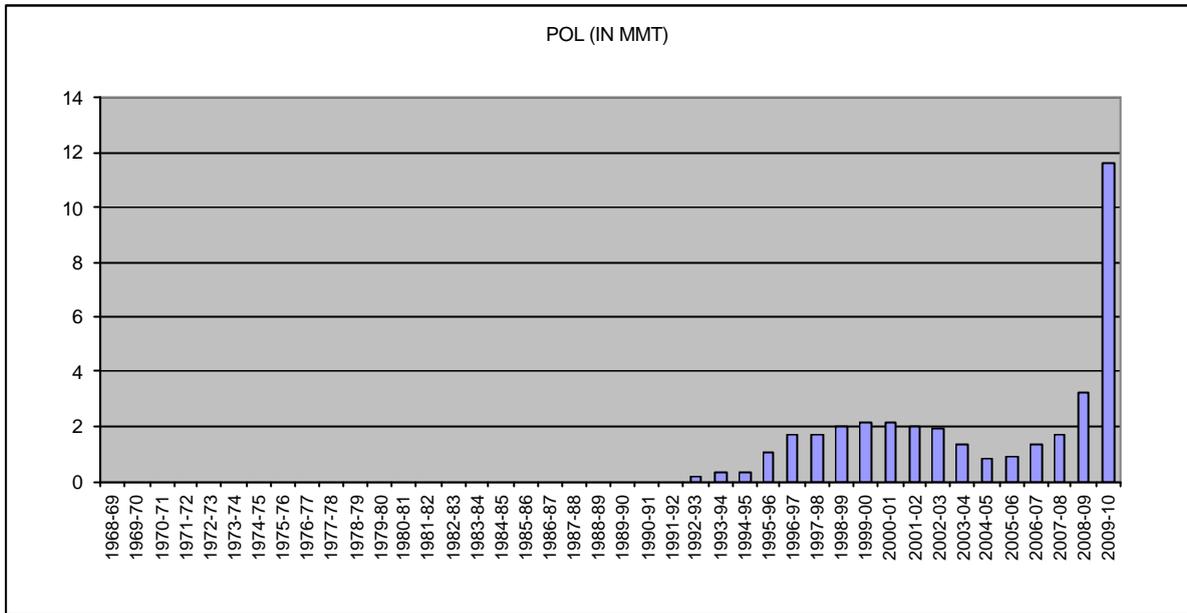
**Table-1**

Principal Commodity-wise traffic handled in MMT

<i>Cargo</i>	<b>2009-10</b>	<b>2008-09</b>	<b>% Variation</b>
P.O.L.	11.65	3.24	259.57
Iron ore	16.16	14.27	13.24
Thermal coal	14.82	14.70	0.81
Coking coal	5.00	5.46	(-) 8.42
Other cargo	9.38	8.74	7.32
<b>T o t a l</b>	<b>57.01</b>	<b>46.41</b>	<b>22.84</b>







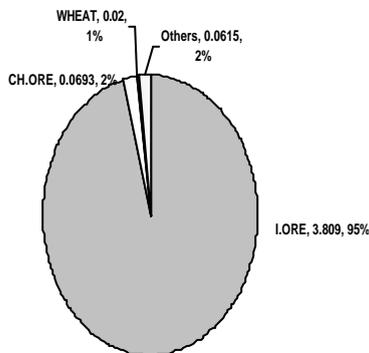
**Exhibit - 3**

**CARGO PROFILE DYNAMICS**

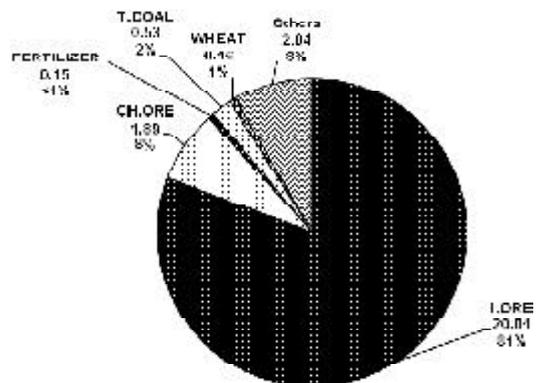
During initial four years of operation as a mono-commodity Port (1966-70), share of iron ore in the total traffic handled was 95%. During the next decades, share of iron ore in total traffic handled reduced to 80% (1970-80), 46% (1980-90), 14% (1990-2000), and 27% (2000-2010) due to diversification of cargo profile in the Port.

Shares of iron ore, chrome ore, POL & crude oil, thermal coal, coking coal and other cargos are 29%, 2%, 7%, 33%, 11%, and 18% respectively in the total traffic handled up to 31/03/2010 (505.28MMT) since inception of the Port. The profiles of cargo handled during the five decades along with the cargo composition in the total traffic handled during the entire operational life of the Port (1966-2010) are as follows:

(i) CARGO PROFILE DURING 1966-70 (IN MMT)



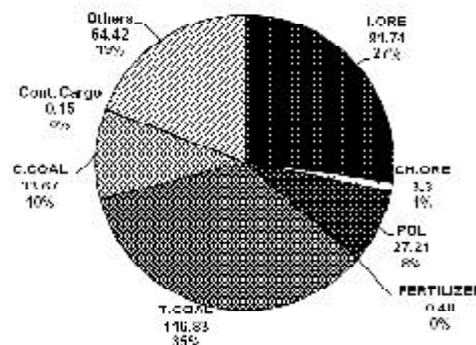
(ii) CARGO PROFILE DURING 1970 - 80 (IN MMT)



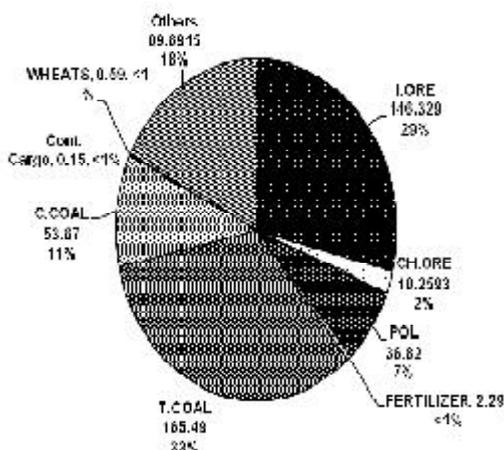
**CURRENT TREND**

The traffic growth of PPT in recent years may be analysed in two phases viz, Phase I (1996-2003) and Phase II (2003-2010). During Phase I, PPT grew at a CAGR of 13% and in Phase II, PPT demonstrated a healthy CAGR of more than 15%. An interesting trend which could be observed in the last ten years is that the share of overseas cargo (Import and Export) grew from 50% in 2001 to 78% in 2010. The main export destination was China which attracted around 60% of total exported cargo in 2010.

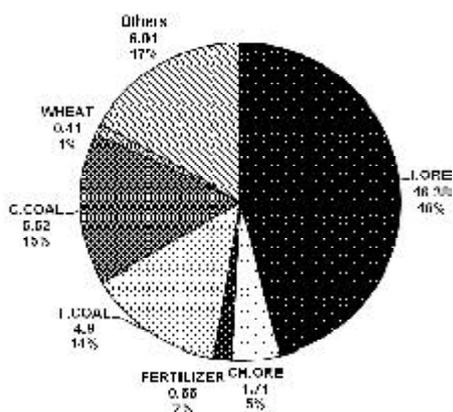
(v) CARGO PROFILE DURING 2000 - 10 (IN MMT)



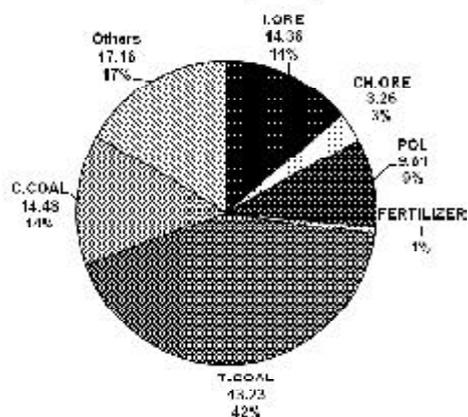
(vi) CARGO PROFILE DURING 1966-2010 (IN MMT)



(iii) CARGO PROFILE DURING 1980 - 90 (IN MMT)



(iv) CARGO PROFILE DURING 1990-2000 (IN MMT)



During the last ten years, the share of iron ore in the total traffic has almost doubled from 15% to 28%. The imported coal share grew from 8% in 2001 to 17% in 2010 and the export coal share dropped from 41% to 17% during the period. The major drive for last years growth was imported cargo which grew by 47% to 29.18 MMT from 19.88 MMT.

Countries of Export cargoes destination and Import cargoes origin, principal commodity-wise, are presented in the **Table – 3**.

**Table – 3**

Export Cargo		Import Cargo	
Commodity	Destination	Commodity	Origin
Iron Ore	China	Crude Oil	Algeria, Brunei, Iraq, Nigeria, Kuwait, UAE
Ch. Ore	China, Japan, South Korea	POL (HSD, SKO)	Coastal (India), Singapore
T. Coal	Coastal (India)	C. Coal	Australia, New Zealand, Indonesia, Singapore
POL (HSD, SKO)	Coastal	N.C.Coal	Indonesia, South Africa, Australia
Container	Singapore, Myanmar, Malaysia, China	Fertiliser	Indonesia, South Arabia, China.
		FRM (Dry)	Jordan, Morocco, Vietnam, UAE, Iran, Qatar, Russia, Ukraine
		Project materials	China, Germany, UAE, Belgium, South Korea

**FUTURE ROAD MAP:**

The State of Orissa is considered as the primary hinterland of Paradip Port. Orissa is rich in mineral reserves having 183 MMT of Chromite (98% of total reserve in India), 440 MMT of Nickel (95% of total reserve in India), 1743 MMT of Bauxite (60% of total reserve in India), 5428 MMT of Iron Ore (26% of total reserve in India), and 61999 MMT of Coal (24% of total reserve in India). Apart from other hinterland, the capex for total projects under implementation in Orissa only and annual average growth rate of export from Orissa as on 01/01/2010 is pegged at ‘ 3240 billion and 33% respectively. About 49 nos. of Steel Plants of 83MMTPA total capacity, 4 aluminium complexes with more than 4 MMTPA capacity and 1MMTPA aluminium smelter, 27nos. of Thermal Power Plants of 32000MW

generation capacity, 15MMTPA mega petrochemical complex by IOC and mega Petroleum, Chemical and Petrochemicals Investment Region (PCPIR) at Paradip are some of the major projects coming up in Orissa. Paradip Port is set to play the role of key member in the supply chain as maritime gateway for import of project materials & input materials and export of finished products. Apart from the opportunities in the primary hinterland, the secondary hinterlands (Bihar, Jharkhand, Andhrapradesh, Chhattisgarh, WB) also provide immense untapped business prospects for Paradip Port. As a proactive action, Paradip Port is presently undertaking major expansion projects like construction of deep draught Iron Ore & Coal Terminals, construction of multipurpose berth,

installation of Single Point Moorings, construction of RO-RO jetty, and deepening of channels and berth face dredging. The cargo forecast up to the

year 2015 – 16 and the major upcoming projects have been indicated in **Table – 3** and **Table – 4** respectively.

**TABLE – 3: CARGO FORECAST**

Year	POL	Iron Ore	Coal	Container	Other Cargoes	Total
2011-12	18.00	17.00	23.00	0.05	11.50	70.00
2012-13	21.00	17.00	23.50	0.05	13.30	74.85
2013-14	23.50	17.00	24.00	0.10	14.80	79.40
2014-15	29.00	17.50	25.00	0.10	15.40	87.00
2015-16	34.50	18.50	26.00	1.00	16.00	96.00

**TABLE – 4: CAPACITY EXPANSION PROJECTS**

Name of Plan	Capacity Addition	Year of Completion	Present Capacity of Port	Total Projected Capacity
Deepening of Channel and berths. MTPA	5.00 MTPA	2011	76.00 MTPA	157.00
Mechanization of CQ-III.	4.00 MTPA	2011		
Installation of second SPM by IOCL.	11.00 MTPA	2013		
Development of new deep draught Iron Ore berth on BOT basis.	10.00 MTPA	2013		
Development of new deep draught Coal berth on BOT basis.	10.00 MTPA	2013		
Construction of one no. of Oil berth.	10.00 MTPA	2013		
Installation of 3rd SPM by IOCL	11.00 MTPA	2014		
Construction of one no. of Multipurpose berth.	5.00 MTPA	2014		
Development of Western dock.	15.00MTPA	2015		
<b>TOTAL</b>	<b>81.00 MTPA</b>			

## CONCLUSION

Leveraging on core strengths, i.e, deep draft, proximity to mineral reserves, vicinity to the large land-locked hinterland, Paradip Port has the potential to become the economic thrust engine for Eastern India by serving the State as well as Nation through world-class services. Delayed Statutory clearances, Long decision making processes, land expansion constraints, and connectivity to land side for seamless cargo evacuation are the key challenges for the Port to be competitive and reactive to market demands. The Port has already developed its core competence in handling Bulk and Break-bulk cargo. Though the major share of total traffic being handled at present is Bulk and Break-bulk cargo,

the Port is striving hard to become the hub port in the Eastern India by diversifying its cargo profile further. As the first step, the Port has decided to construct a Multipurpose berth of 5 MMTPA capacity on BOT basis to handle clean cargo including containers. After commissioning of the multipurpose berth, mega petrochemical complex by IOC and mega PCPIR at Paradip, the cargo profile of the traffic at Paradip Port may witness a change.

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Prabhat Kumar Nanda is the Secretary of Paradip Port Trust.



*Hon'ble Chief Minister Shri Naveen Patnaik giving award to Padmini Rout at the Biju Patnaik Award Giving Ceremony -2011 at Jaydev Bhawan on 5.3.2011. Shri Prabin Chandra Bhanj Deo, Minister for Sports & Youth Services and Dr. Prasanna Kumar Patasani, M.P. are also present.*