



School of Maritime Design and Research

## Dredging, Dredgers and Indigenisation

*Workshop / Interaction Session*

**Presentation by**  
Akula Nidarshan  
Scientist – B (ME)  
nidarshan.a@nsdrc.res.in



## Project Overview

### Plan of Scheme for conducting market study and capacity building for Indigenisation of Dredger Manufacture

*Sponsor : Ministry of Shipping, Govt. of India*

**Principal Investigator**  
Shri U. S. Ramesh  
Chief Manager



Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Workshop Structure

- Dredging Requirements In India**  
IMU, Visakhapatnam
- Dredging Companies Perspective**  
Capt. S. Divakar, GM (Ops), DCI
- Dredgers and Indigenisation**  
IMU, Visakhapatnam
- Need and Indigenisation Techniques**  
Capt. M. V. Rao, GM (Dredging), BEML



Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Dredging and Dredgers



**EXCAVATION**



Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Types and Sectors

### Types

- Capital Dredging
- Maintenance Dredging
- Reclamation
- Combination

### Sectors

- Major Ports
- Non Major Ports
- Fishing Harbours
- Inland Waterways
- Captive Jetties
- Shipyards
- Oil and Gas
- Coastal Protection
- Recreation / Water-bodies
- Agriculture

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Major Projects

- Mumbai Harbour – JNPT Channel Dredging
- Kolkata Port and Haldia Dock Development and Expansion Project
- Mega Container Terminals at Various Ports
  - JNPT, Chennai Port Trust, Ennore Port Ltd.
  - L & T Kattupalli Terminal, ICTT – Increase in Depth Available
- Bulk Terminal by Adani Port
- Karikal Port Expansion Project
- National Waterways
- Coastal Development and Protection
- National Watershed Development Program - ICAR

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Detailed List – Projects

	Estimated Cost (Rs. in Million)	Capacity (MTPA)
<b>Jawahar Lal Nehru Port</b>		
Container Terminal, NSIC	6000.00	15.20
BPCI Jetty	2000.00	5.50
Third Container Terminal	9000.00	15.00
<b>Mumbai Port</b>		
Construction of two new off shore container berths and Development of container terminal on BOT basis in Mumbai Harbour	14600.00	9.60
<b>Marmugao Port</b>		
Bulk Cargo Berths No. 1 & 2	2500.00	5.00
<b>Kandla Port</b>		
Fifth Oil Jetty (IFCO)	215.00	2.00
Oil Jetty related facilities at Vadinar (ESSAR)	7500.00	12.00
Oil Jetty awarded to M/s IOCL	207.00	2.00
Container Freight Station	410.70	3.00
Container Terminal (Phase I & II)	4465.60	7.20
<b>Tuticorin Port</b>		
Container Terminal (Berth No. 7)	1000.00	5.00
Construction of Coal Berth at NVW for NLC – TNEB	490.00	6.30
<b>Visakhapatnam Port</b>		
Container Terminal, Outer Harbour	1080.00	1.60
Multipurpose berths – EQ-8 & EQ-9	1960.00	6.00

Sample List

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Dredging Demand (12<sup>th</sup> Five Year Plan)

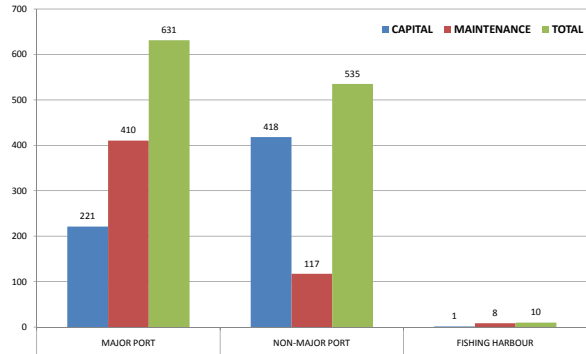
S. No.	Year	Major Ports			Non-Major Ports			Fishing Harbour		
		Capital	Maint.	Total	Capital	Maint.	Total	Capital	Maint.	Total
1	2012-2013	45.44	77.17	122.61	109.95	13.87	123.82	0.7	2.36	3.06
2	2013-2014	84.03	75.17	159.2	129.98	20.43	150.41	0.2	1.07	1.27
3	2014-2015	39.95	84.97	124.92	88.99	27.78	116.77	0.2	1.94	2.14
4	2015-2016	26.58	86.47	113.05	51.46	26.63	78.09	0.2	1.07	1.27
5	2016-2017	25.11	86.47	111.58	37.67	28.48	66.15	0.2	2.04	2.24
<b>Total</b>		<b>221.11</b>	<b>410.25</b>	<b>631.36</b>	<b>418.05</b>	<b>117.19</b>	<b>535.24</b>	<b>1.5</b>	<b>8.48</b>	<b>9.98</b>

**Total**  
Capital 640.66  
Maintenance 535.92

\*In million cubic meters

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

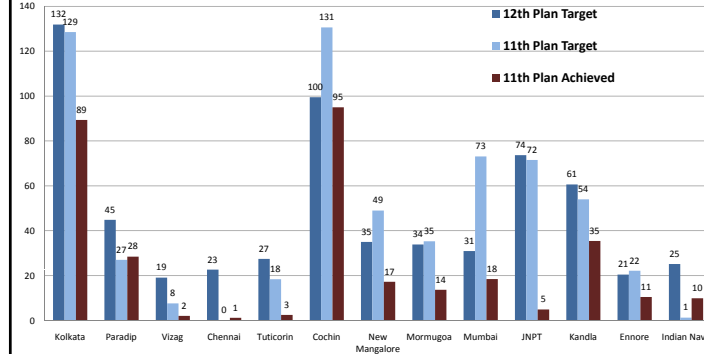
### Dredging Demand (12<sup>th</sup> Five Year Plan)



\*In million cubic meters

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

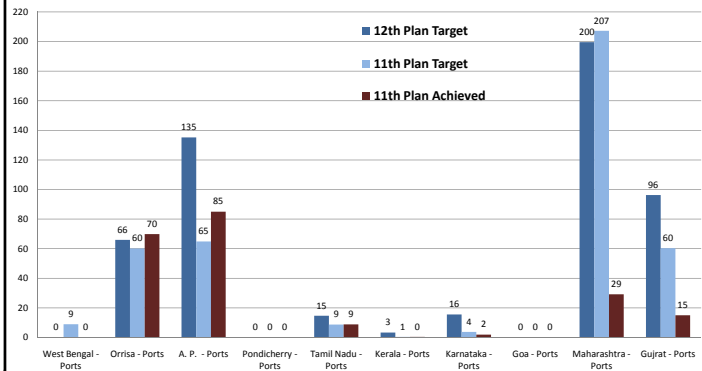
### Dredging Demand – Major Ports



\*In million cubic meters

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

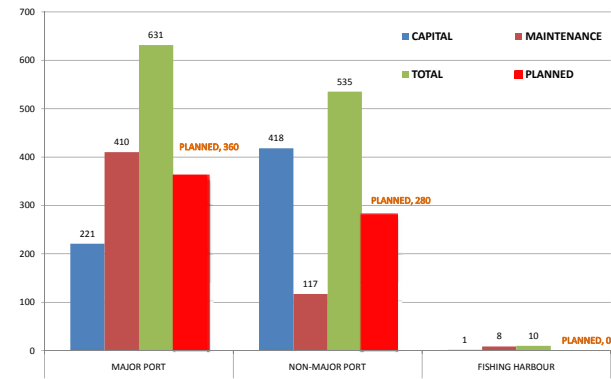
### Dredging Demand – Non-Major Ports



\*In million cubic meters

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

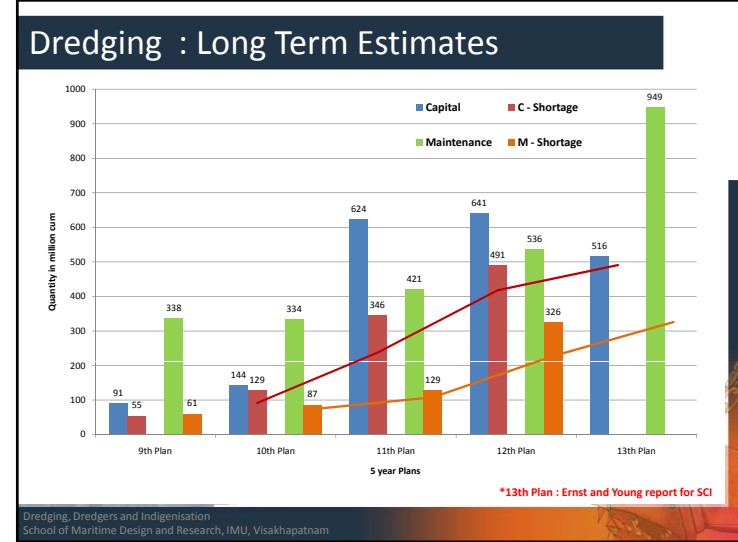
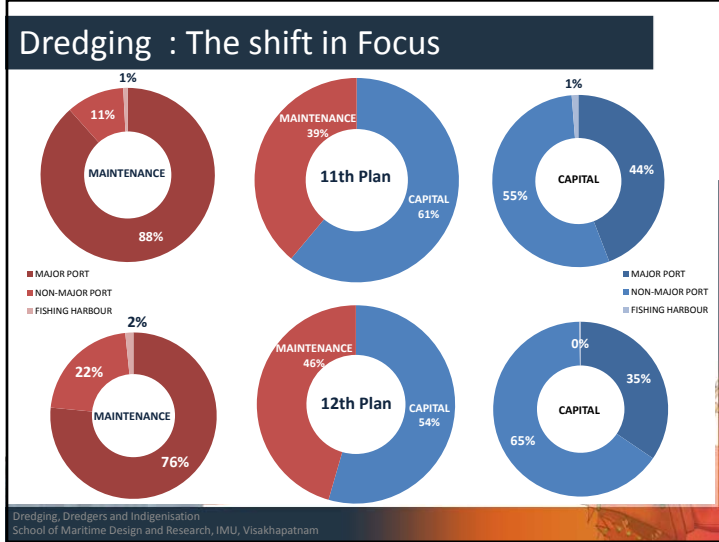
### Dredging Demand (12<sup>th</sup> Five Year Plan)



\*Source : Planned IIR, Dredging in India 2013

\*In million cubic meters

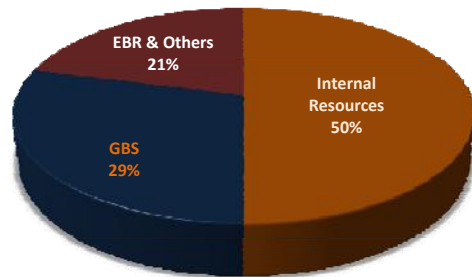
Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam



- ### Key Issues
- ❖ Contracting Practices
  - ❖ Investigation/ Survey techniques of Material to be dredged
  - ❖ Current state of dredging technology and equipment
  - ❖ Management of Dredging Material
    - Measuring Dredged Quantity
    - Alternatives for disposing the dredged material
    - Environmental concerns
  - ❖ Project Economics and Management
- Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

- ### Key Issue – Methods of Funding
- ❖ Gross Budgetary Support
  - ❖ Internal Resources
  - ❖ External Resources
    - Market / Bank Loans
    - Fund Raising through Public Involvement – Bonds, IPOs, POs, etc.
    - Soft Loans from Government
    - Foreign Aid – JICA, ADB : ODA Loans and/or Aid
  - ❖ PPP Model
    - Design, Build, Finance, Operate and Transfer (DBFOT)
    - KoPT : Cabinet Committee for Economic Affairs – 30years
- Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Funding Pattern



Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Key Issue – Govt. Initiatives

- ❖ NMDP and Maritime Agenda 2020
- ❖ 100% FDI in Dredging – both operations and setting up office
- ❖ New Improved dredging policy introduced
- ❖ Focus on research work and specialised training/education in the field of Dredging
- ❖ No import duty on vessels bought by Indian Owners\*
- ❖ Introduction of Tax Free bonds – JNPT, EPL and DCI
- ❖ Focus on PPP Model – BOT/ DBFOT
- ❖ 2012-2013 : 32 Projects awarded, INR 6757 Cr to add capacity of 137 MMTPA  
Highest in terms of awarding capacity augmentation projects
- ❖ 2013-2014 : 30 Projects awarded, INR 25,000 Cr to add capacity of 282 MMTPA
- ❖ Proposed introduction of New Dredging company - SCI + Kandla + Paradip + DCI

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Industry Outlook - MARITIME INDIA 2013

According to **Hemanth Rao**. "It has become a **policy to allow global major to walk away with most of the dredging contracts** in the country unlike what is practiced in the U.S. and other countries.

"In **America** dredging **contracts are given to U.S. companies**, and the bidder has also to ensure he **deploys dredgers made in the U.S. and manned by Americans** only," he said. "Indian companies are never given any such preferential treatment in their own country."

\*Source : Marine Professionals Website

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam

## Thank you All

Dredging, Dredgers and Indigenisation  
School of Maritime Design and Research, IMU, Visakhapatnam