



“JAL MARG VIKAS” (RIVER GANGA)

WORLD BANK ASSISTED PROJECT ON
INFRASTRUCTURE DEVELOPMENT FOR NAVIGATION
ON NATIONAL WATERWAYS-1

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INLAND WATERWAYS AUTHORITY OF INDIA
MINISTRY OF SHIPPING
GOVERNMENT OF INDIA



National Waterway-1

Ganga – Bhagirathi – Hooghly river system

Haldia(Sagar island) – Allahabad –1620 km



OBJECTIVE OF JAL MARG VIKAS



- Improving navigability for larger, deeper draft vessels for competitive advantage
- Providing/improving facilities for multi-modal transport with integration with other surface transport modes
- Develop modern, safe, economic, reliable, environment friendly mode of transport

INTERNATIONAL WATERWAYS SCENARIO

China, USA, European Union: maintained and upgraded their river systems on core routes that can support large modern vessel fleets upto 40,000 tonnes of cargo on single voyage

COUNTRY	TONNAGE	VESSELS
USA	615 MT	31,000
EUROPEAN UNION	565 MT	11,000
CHINA	1.1 BT	200,000

CARGO MOVEMENT (MTPA)



Waterway	Nature of Cargo	Quantity (2013-14)
NW-1 (GANGA)	Coal, cement, fertilizer fly ash, hot rolled steel coils, tyres, machinery, jute, spare parts, stone chips, HSD oil, soyabean extracts, lube oil, sand, pulses, manganese ore, coke, ODC	3,349,138 (MT) 1,851,232,081 (TKM) 1.851 (BTKM)

POTENTIAL CARGO

- **Coal is crucial cargo:** 10 TPPS existing in NW-1 area and 10 more envisaged in next 5-10 years
- 20 – 25 million ton (MMTPA) expected to be transported as TPPs expected to consume 20% of their coal requirement through imports over seas
- Project for transportation of 21 MMTPA of imported coal over 7 years from Haldia to Farakka TPP already underway
- **Recent demand:** enhanced demand for waterway transportation of fly-ash, food grains, cement, fertilizer, stone chips, edible oil and ODC
- **Potential shippers** interested for use of NW-1 if adequate infrastructure provided for navigation of larger vessels with 1200-1500 DWT

THERMAL POWER PLANTS ON NW-1



Installed power: around 15,000 MW

Total coal requirement: around 75 MMTPA

> Imported coal: around 15 MMTPA

FERTILIZER PLANTS & CONSUMPTION CENTER ON NW-1



COMPLEXITIES OF NW-1(GANGA)



- Total length of NW-1: 1620 kms (longest stretch in India)
- Typical Himalayan alluvial river; heavy sediment load; multiple channels; braiding & short radius bends
- Substantial seasonal water level fluctuations
- Weak navigation infrastructure
- Low discharge of water in upper reaches upto Ghazipur
- Complex task to maintain navigability of even 2m depth throughout

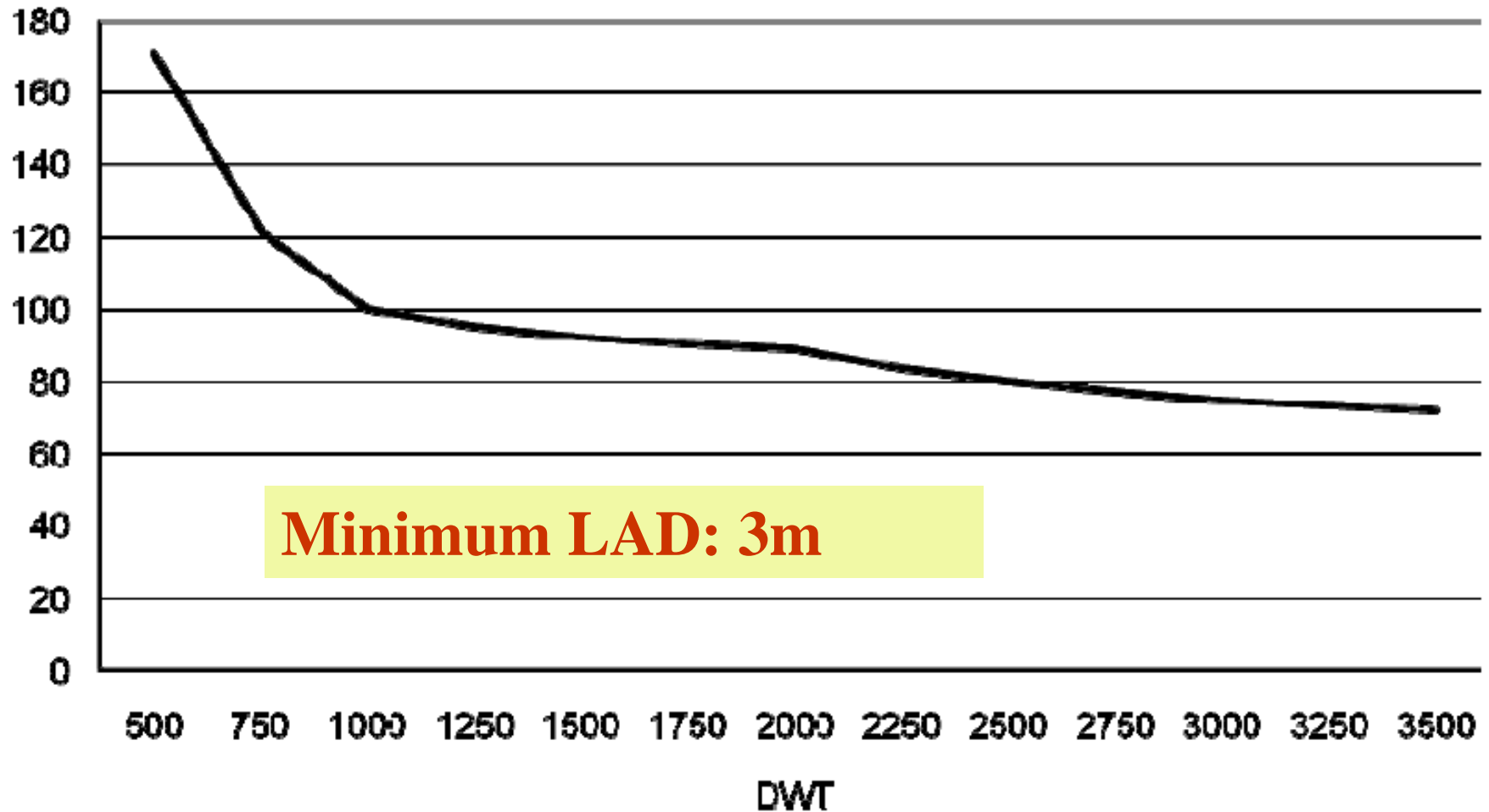
NW-1 FAIRWAY LEAST AVAILABLE DEPTH



- Haldia - Farakka (560 km) : 2.5 m
- Farakka – Barh (460 km) : 2.5 m
- Barh – Ghazipur (690 km) : 2.0 m
- Ghazipur – Varanasi (133 km): 1.5 m
- Varanasi – Allahabad (237 km) : 1.2 m

DEADWEIGHT VIABILITY: BASIC OBJECTIVE

Figure 2.1: Estimated unit cost/tonne-km index for self-propelled dry cargo barge, Europe (1000 DWT barge = 100)



Source: Consultant regression analysis

INFRASTRUCTURE REQUIRED



- Strengthening of open river navigation techniques & hardware
- Dredging
- Modern River Information System (RIS) [Farkka – Patna]
- DGPS station at Varanasi
- Modern methods of channel marking (buoys, beacons)
- Night navigation facilities for 24x7 navigation
- 4 barrages with navigation locks - 2 each between Allahabad-Varanasi and Varanasi-Buxar
- Terminals at Allahabad, Varanasi (multi-modal), Ghazipur (UP), Sahibganj (Bihar) and Katwa (WB)
- Repair & Maintenance facilities; slipways; dry-docking and fueling facilities

IMMEDIATE STEPS TAKEN



- **Project Implementation Agency : IWAI**
- **Project Management Unit (PMU)**
 - Set up in June 2014 with a Project Director + Individual consultants for procurement, environment, structural engineering, economic development aspects in PMU from August 2014
- **Project Oversight Committee (POC)**
 - set up in August 2014 with Chairman, IWAI; representatives of CWC and state governments of UP, Bihar, Jharkhand and West Bengal to provide critical guidance and evaluation.
- **World Bank Scoping Mission**
 - August 2014 and September 2014

SUMMARY OF WB SCOPING MISSION REPORT



- Desired channel dimensions – 3 m depth, 80 m width: single channel and 150 m width: two-way traffic
- Ensure convergence and alignment of this project with environmental programmes on river Ganga & 'Clean Ganga' mission
- Investment support and technical assistance should be for Haldia – Varanasi stretch in the first phase (revised requirement of USD 300 million)
- Multi-modal terminal & industrial zoning at Varanasi in consultation with Eastern Dedicated Freight Corridor of Railways
- **Project preparation in a 2 – track approach :**
 - Track 1 : DPR for ancillary facilities (terminals, river conservancy works, navigational aids) to be fast tracked and tendered out in next 12 months
 - Track 2 : DPR for barrage or other alternatives and subsequently a design, build contract (commencement of this work could take 20-22 months)
- Market development strategy to explore potential cargo; intermodal connectivity and future industrial zoning plans along NW-1
- Riparian notification as per WB group operation policy 7.50 required to be shared with all upstream and downstream riparian countries (China, Nepal, Bangladesh)

DEA, MoF MEETING ON COMPLEMENTARITY OF EDFC & JMV

- Round Table discussion at Varanasi on 25 Sep 2014 between WB, DFCCIL (EDFC Project), IWAI & IFC on EDFC corridor.
- Visit of WB team & IWAI at site proposed for terminal at Varanasi for conceptualization of state-of-art multi-modal logistics hub with rail and road connectivity at Varanasi.
- DEA, MoF meeting for mutual impact/synergy evaluation meeting with MoS, IWAI, MoRly, EDFC project on Kanpur-Mughalsarai corridor and state-of-art multi-modal logistics hub at Varanasi
- Loan I amount of US\$ 300 million approved for Haldia- Varanasi stretch

THANK YOU