“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

Legend
Declared waterway
Road
Rail
Important places
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
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

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>TONNAGE</th>
<th>VESSELS</th>
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</thead>
<tbody>
<tr>
<td>USA</td>
<td>615 MT</td>
<td>31,000</td>
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<tr>
<td>EUROPEAN UNION</td>
<td>565 MT</td>
<td>11,000</td>
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<tr>
<td>CHINA</td>
<td>1.1 BT</td>
<td>200,000</td>
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<tr>
<td>Waterway</td>
<td>Nature of Cargo</td>
<td>Quantity (2013-14)</td>
</tr>
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<td>-------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>------------------------------------------</td>
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<tr>
<td>NW-1 (GANGA)</td>
<td>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</td>
<td>3,349,138 (MT)</td>
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<td></td>
<td></td>
<td>1,851,232,081 (TKM)</td>
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<td></td>
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<td>1.851 (BTKM)</td>
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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
THANK YOU

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

Minimum LAD: 3m

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)
- 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