

JAL MARG VIKAS PROJECT

FREQUENTLY ASKED QUESTIONS AND THEIR ANSWERS

1. What primarily constitute inland waterways in India?

Answer:

India is bestowed with innumerable rivers, lakes, canals, backwaters and reservoirs. Some of the rivers are extensively long and perennial, while others are comparatively short and seasonal. These rivers, lakes, canals, backwaters and reservoirs primarily constitute the source for inland waterways in India.

2. What are the provisions in the Constitution of India with regard to inland waterways?

Answer:

According to item 24 of the Central List of the Constitution, matters relating to shipping and navigation on inland waterways, declared by Parliament to be national waterways, as regards mechanically propelled vessels; and the rule of the road on such waterways are now the responsibility of the Central Government. According to item 32 of Concurrent List, matters relating to shipping and navigation on inland waterways as regards mechanically propelled vessels, and the rule of the road on such waterways, and the carriage of passengers and goods on inland waterways, subject to the provisions with respect to national waterways, fall under the purview of both the Centre and the States.

3. Which are the National Waterways operational or under process of development?

Answer:

Five National Waterways are operational or under the process of development:

- i) Allahabad-Haldia stretch on the Ganga-Bhagirathi-Hooghly river system in the states of Uttar Pradesh, Bihar, Jharkhand and West Bengal, with a length of 1,620 Km (declared National Waterway No.1 in 1986).
- ii) Sadiya-Dhubri stretch on River Brahmaputra in the state of Assam, with a length of 891 Km. (declared National Waterway No.2 in 1988).
- iii) Kottapuram-Kollam stretch of the West Coast Canal, along with Udyogmandal and Champakara Canals in the state of Kerala, with a total length of 205 Km (declared National Waterway No.3 in 1993).
- iv) Kakinada- Puducherry canals along with Godavari and Krishna rivers in the states of Andhra Pradesh, Tamil Nadu and Union territory of Puducherry, with a total length of 1,078 Km. (declared National Waterway No.4 in 2008).
- v) Brahmani river and Mahanadi delta rivers, integrated with East Coast Canal in the states of West Bengal and Odisha, with a total length of 588 Km. (declared National Waterway No.5 in 2008).

4. How many additional National Waterways have been declared recently?

Answer:

Under the National Waterways Act, 2016 declared in March 2016, 106 additional National Waterways have been notified.

5. What is the status of studies on the 106 waterways?

Answer:

The Government of India with the objective of augmenting the average effective networks of Inland Water Transport has recently also declared 106 new National Waterways (NWs) spanning over 24 states in addition to the existing five NWs. These have been divided into three categories for carrying out studies on 106 NWs.

The Category -1 consists of eight viable waterways on which development activities have been initiated. Category- II consists of 46 NWs. Out of these, 24 NWs have been shortlisted for Detailed Project Report (DPR) preparation after feasibility study. Further, on four NWs, more information is sought from the two stage DPR consultants. The rest of the 18 NWs are not viable technically and due to traffic issues identified during feasibility studies. For balance 52 NWs, reports are being assessed and final decision regarding their viability has to be taken.

6. Will these waterways be commercially viable independently?

Answer:

It is expected that many of these waterways would act as feeder routes to the main bigger waterways and help in evacuation of deep hinterland cargo through smaller vessel, thus adding to the economic development of the hinterland, besides acting as an aggregator of cargo for main bigger waterways. IWAI would take up development of 37 NWs in next three years. These are; NW-1 to NW-5, Eight NWs indicated in Category-II of the new waterways, namely, (Barak, NW-16), (Gandak, NW-37), (Ghagra, NW-40), (Kosi, NW-59), (Sunderbans, NW-97), (Mandovi, NW-68), (Zuari, NW-111) and (Cumbarjua, NW-27). DPR work of 24 new NWs selected for development have been awarded. DPRs would be available from February, 2017 onwards.

7. What are the other potential uses of the waterways?

Answer:

Apart from cargo transportation, waterways can be used for tourism purposes, cruise operation, water sports activities etc. They will also enhance across the river connectivity of various remote villages by providing better and safer navigation.

8. Has consultations with the concerned state governments been made for declaring 106 waterways?

Answer:

Consultations with State Governments have been undertaken following which the new National Waterways Act 2016 was promulgated in April 2016.

9. What would be the role of State Governments in developing these waterways?

Answer:

As part of the development of national waterways, land acquisition for widening of fairway and construction of terminals are required to be carried out by the State Governments at the request of the Central Government. Further, maintenance of law and order along the national waterways is the responsibility of the State Governments. Any obstruction in the fairway by way of fishing nets etc. will have to be relocated by the State Governments to ensure smooth sailing of vessels. Assistance of State Government(s) would also be necessary for modification of cross-structures as per the category of waterways. Disposal of dredged material and its uses for other infrastructure works as per State Support Agreement are also being formulated.

10. Will the rights of the State Governments over the waterway or the appurtenant land be affected on declaration of these waterways as national waterways?

Answer:

Navigation being non-consumptive of water, there will be no loss of water due to it. Moreover, due to declaration of a waterway as a national waterway, the rights of State Government on the water, its appurtenant land and soil and minerals therein do not get affected at all. On the contrary, due to development of waterway with navigation infrastructure, which may include river training works, the depth in the waterway would increase which may also reduce to some extent damage due to flood etc.

11. What are the functions and responsibilities of the Inland Waterways Authority of India?

Answer:

Inland Waterways Authority of India is a statutory body set up in 1986 through the Inland Waterways Authority of India Act, 1985 for regulation and development of inland waterways for the purposes of shipping and navigation in the country. It primarily administers the provisions of the Act and frames the rules thereunder and is directly responsible for the regulation and development of national waterways. The mandate of IWAI is fast evolving from a regulator to a facilitator in development of waterways, improving navigation and enhancing transportation capacity on such waterways through Private participation.

12. How many of the National Waterways have been developed so far?

Answer:

National Waterways nos. 1, 2 and 3 have been developed significantly to meet the present requirement of traffic potential by providing targeted depth, terminal facilities with loading and unloading facilities and navigational aids.

13. What are the steps involved in declaring an inland waterway as a national waterway?

Answer:

Unlike in the case of declaring roads as national highways, an inland waterway can be declared a national waterway only through an Act of the Parliament. Therefore, the proposal has to go through the processes involved in enacting an Act of Parliament, such as approval by Cabinet, introduction of a Bill in one of the Houses of Parliament, debates in both the Houses, etc.

14. What are the steps involved in development of a national waterway?

Answer:

Once an inland waterway is declared a national waterway, the following steps are taken to develop it for smooth navigation of the vessels:

- (a) **Hydrographic Survey:** A longitudinal (Thalweg) survey is conducted every fortnight in the entire waterway to ascertain the available depth. Wherever less than required depth is observed during the Thalweg survey, detailed survey in the particular location is conducted.
- (b) **Conservancy measures:** If the detailed survey shows that the current in the fairway is around one metre per second and shoal to be improved is small in length (100-150 metres) and depth to be increased is about 50 centimetre, bandalling work is carried out. Bandalling is the process by which the flow of water is diverted from the secondary channel to the main channel by installing bamboo poles and bamboo mats at a length of 15 to 30 meters across the river. However, if the current is either less than 1 meter / second or shoal is large in length (greater than 150 metre) or depth to be improved is greater than 50 centimetre or when there is no scope for diversion of water from secondary channels, dredging of the channel to provide the desired depth is carried out.

- (c) **Day and night navigational aids:** These are installed in the waterway for safe navigation of the vessels during the voyage as well as for facilitating round-the-clock navigation.
- (d) **Floating/ fixed terminals:** Floating/fixed terminals are constructed along the national waterways for providing berthing, loading and unloading facilities.

15. What are the basic infrastructures and other facilities required to make waterways commercially viable mode of transportation?

Answer:

- a) Development of fairway or navigation channel with targeted depth and width for the passage of optimum size of cargo vessels.
- b) Providing navigation aids for round-the-clock safe navigation.
- c) Construction of terminals/ports/jetties for berthing of vessels, loading/unloading of cargo, warehouses/storage places, boarding and lodging facilities, etc.
- d) Providing connectivity to the terminals with rail and road networks.
- e) A robust marketing strategy to ensure both upstream and downstream movement of cargo.

16. What depth in an inland waterway is considered adequate for plying cargo vessels of commercially viable size?

Answer:

It is generally considered that if an inland waterway is capable of plying 1000 DWT vessels, it is commercially viable. For this, normally a depth of 2.5 meters in the fairway is essential under the

present circumstances. For movement of 1000 to 2000 DWT cargo vessels, the navigational channel should have at least 45-meter width and 3-meter depth.

17. What are the challenges in developing of National Waterways?

Answer:

The major challenges are:

- (i) Development and maintenance of Fairway width of 2.5 m to 3.0 m depth.
- (ii) Recurring siltage and irregular siltation
- (iii) Speed Control regulations to avert bank erosion and safety of other users.
- (iv) Safety against cross ferries
- (v) Connectivity to Terminal Locations
- (vi) Clearance at Cross Structures/bridges
- (vii) Identification of navigational channel in a wide river.
- (viii) Discharge control by regulations
- (ix) Difficulty in land acquisition for development of terminals.

18. What type of cargo can be transported on national waterways?

Answer:

National waterways are ideally suited for transportation of bulk goods, such as coal, cement, food grains, fertilizers, stone chips, jute, steel, POL, LPG, Tea, containers, water, liquids, etc.; hazardous goods, such as chemicals, acids, etc.; and over-dimensional cargo.

19. What is the potential of inland water transport in the country?

Answer:

As per National Transport Policy Committee (NTPC) Report of 1980, the approximate length of navigable waterways in the country was 14,500 km. Out of this, a total 4,382 km have been declared as national waterways. The estimated cargo movement on these waterways by the year

2022 is estimated to be 159 million tonnes according to the report on Integrated National Waterways Transportation Grid submitted by M/s RITES in 2014.

20. What is meant by capacity augmentation of navigation in inland waterways?

Answer:

Capacity augmentation of navigation in inland waterways means creating conditions in the fairway channel of an inland waterway through appropriate interventions in such a way that vessels of higher capacity can move on the fairway. This will result in movement of large quantity of goods and passengers, with minimum congestion and in a short time span.

21. How does India compare with other countries?

Answer:

China, USA, European Union maintained and upgraded their river system on core routes that can support large modern vessel fleets up to 40,000 tons of cargo in single voyage. IWT in India has only 0.5% modal share; China 8.7%; USA 8.3% and Europe 7%. China invested USD 15 billion in 2005-2010; Germany invested 12 billion Euros in 2012 alone; India on the other hand spent USD 250 million between 1986 -2014 (28 years).

Country	Tonnage	Vessels
USA	615 MT	31,000
European Union	565 MT	11,000
China	1.1 BT	200,000

22. Why is the IWT mode in India not so much developed compared with other countries?

Answer:

The major reasons for the poor development of IWT in India are:

- i) **Very low level of investment:** The level of investment on preservation and development of IWT mode in India has been abysmally low compared to road and rail modes. As a result, this mode of transportation remained underdeveloped and its share in overall internal cargo transport remained very low (less than 1 % in terms of ton-kilometer). This is a great economic opportunity loss to the country. A comparison of the investment in IWT in India with that in other countries shows that the expenditure by China in IWT between 2005-2010 (five years) was US\$ 15 billion; and the budget for IWT development in Germany for the year 2012 alone was 15 billion Euros. As against this, the expenditure on IWT in India between 1986 and 2010 (25 years) was just Rs. 1117 crore, i.e., US\$ 200 million. This is considerably very low for India, which has, as per data available from various studies, a total length of 14,500 kms of navigable inland waterways.

- ii) **Lack of convergence between IWT and other modes of transport** The inland waterway transport in India is one of the oldest modes of transport. It developed over the years mainly on private participation for transportation of passengers and local produce, with minimum State intervention. This, coupled with absence of a common transport policy to bring convergence between all the four main modes of transport, viz., rail, road and air, resulted in relegation of IWT to backstage and low investments. The cumulative investment in IWT in India is only Rs.200 million, while the cumulative investment in road infrastructure is Rs.12 billion.

- iii) **Emphasis on development of rail and road networks:** Over the years, successive planners in India placed emphasis on development of road and rail networks to provide last mile connectivity to all habitations and trade centers. The following statistics speak of the comparative position with regard to development of roads, rails and IWT in India.

(a) The National Highway Authority of India (NHAI) was created in the year 1988 through an Act of Parliament. (b) The road network consists of the following as in 2013-14:

Expressways - 200 kms.

National highways -96,260

Kms

State highways- 1,31,899 kms.

Rural roads- 26,50,000 kms.

NHAI alone invested Rs. 106,378 crore on national highways.

(b) The State Governments also put considerable emphasis on development of state highways and rural roads. Introduction of Prime Minister's Grameen Sadak Yojna (Rural Roads Programme) in 1992 gave a big fillip to bringing connectivity to all habitations with a population of 500 households with either a major thoroughfare and/or with a commercial center.

(c) Similarly, the Indian Railways, with a dedicated Railway Board, with handsome revenue earnings and investment opportunities, was able to invest significant amounts in the sector. Focus on the above two sectors deprived IWT of vital investment opportunities.

iv) **High cost of development of Ancillary facilities:** Multi-modal and inter- modal terminals are part of the fairway development of an inland waterway. Development of modern day multimodal terminals, jetties, ferry points and river information systems is highly capital intensive and, therefore, the private sector was not prepared on its own to bring in the required level of capital for investment.

v) **Perception of IWT investment as high-risk investment:** This was a disincentive for the banks to advance loans to private players.

- vi) **Lack of investment interventions through Public-Private-Partnerships (PPP):** There is negligible PPP investment interventions in inland waterways for transport compared to the investments in road networks.

23. What are the major environmental, social and economic benefits from development of inland waterways for transport?

Answer:

The following major benefits are expected from development of inland waterways for transport:

- i. It's a non-water consumptive transportation project with minimal resource depletion.
- ii. It will facilitate reduction of pressure on Railway network and Road Network, relieving congestion, reduced emissions from vehicles and railway engines on non-electrified routes, thereby reducing carbon emission.
- iii. Use of modern inland water vessels, with natural gas (LNG/CNG) as fuel will reduce emission of SO_x, NO_x (70%), particulate matter (95%) and CO₂ (25%). Hence will have negligible impact on ambient air quality.
- iv. LNG/CNG engines have lower noise level than diesel engines, hence less impact on ambient noise level.
- v. Land acquisition is a major hurdle for all infrastructure projects including highways, railways and urban transportation projects. But transportation through waterways does not involve huge land acquisition except in few places where terminals are likely to be constructed. In comparison to other infrastructure projects, it is almost negligible. Due to minimum requirement of land acquisition, there will be insignificant impact on ecology & biodiversity, agricultural activities as well as on the livelihood of the people.
- vi. Improved river flow due to improvement / augmentation of navigation facilities will in turn benefit aquatic flora and fauna.
- vii. Increase in economic opportunities in the form of employment and business opportunities (both in relation to cargo movement and peripheral petty business activities).
- viii. Access to local communities in the form of a mode of transport to conduct activities on both sides of the river.

- ix. Better water flow through maintenance of minimum water levels will provide for better fish production and catch, which in turn will directly enable enhanced income for the fishing communities along the river stretch.
- x. The cost of transportation of goods across waterways will be considerably lower compared to rail and road transportation.
- xi. Burden on road and rail transportation will come down resulting in less fuel consumption and consequent environmental pollution.
- xii. Improved access to trading centers and ancillary infrastructure (cargo handling, etc.) along the rivers and navigation will benefit local, regional and international business.
- xiii. Tourist spots along the rivers will attract considerable number of tourists.
- xiv. IWT is best for bulk cargo and over dimensional cargo.
- xv. Fairway development does not need land acquisition
- xvi. Lesser per ton per kilometre rate than Railways and Roadways

The socio-economic and environmental advantages of IWT mode of transportation over other modes such as rail and road are enormous. Few important advantages are given below:

(a) Capital Savings: A normative cost of up-gradation/construction of existing two lane roads is estimated at Rs. 1 crore per km, upgrading an existing single lane road into two lane road is estimated at Rs. 4 crore per km and construction of a new two-lane road is estimated to cost Rs. 5.5 crore per km. Similarly, the cost of construction of rail line is estimated at Rs. 5 crore per km outside the terminal and Rs. 10 crore for rail siding inside a terminal. Compared to this, the capital cost for development of inland waterways is much lower. The capacity augmentation of navigation on NW-1 through the Jal Marg Vikas Project, with strengthening of open river navigation techniques and hardware, [dredging, modern river information system (RIS), Digital Global Positioning System (DGPS), night navigation facilities and modern methods of channel marking] is estimated to entail a capital expenditure of Rs. 2.53 crore per km only.

(b) Savings in transportation costs:

- 1 Horse Power energy moves 150 kg on road, 500 kg on rail and 4000 kg on water
- 1 litre of fuel moves 24 ton-km on road, 85 ton-km on rail & 105 ton-km on Inland Waterways.
- Reduces transportation and transition losses.

(c) Environment friendly:

- Least fuel consumption per ton-km
- CO₂ emission is 50% that of trucks
- Negligible land requirement
- Safe mode for hazardous and over-dimensional cargo

(d) Supplementary mode:

- Reduces pressure on road and rail
- Reduces congestion and accidents on road.

Best suited mode of transportation for bulk goods, hazardous goods and over dimensional cargo.

NW-1 serves nearly 42 traffic regions between Allahabad and Haldia. Major ports, viz., Haldia and Kolkata and important cities like Kolkata, Patna, Varanasi and Allahabad fall under its primary hinterland. The river system serves richly endowed natural reserve areas as well as a large number of industrial units comprising thermal power plants, Iron & steel plants, sugar mills, cement industry, small scale industry, etc. and vast areas of agrarian hinterlands. A study conducted by RITES in 2014 revealed that, out of the entire range of commodities germane to IWT services on

the National Waterway-1, 11 cargo groups were formed with common handling and storage requirements. For example, coal, stone and fly ash are products that require the same type of handling in terms of transshipment and storage and can, therefore, be handled at the same terminal. The same is applied for kerosene and POL. Raw jute, jute textile, food grains and sugar are cargoes that also have certain features in common. These types of cargoes are transported in sacks or bales and can be offloaded with same type of machinery. These cargoes are valuable and arrangement must be made for their storage in locked warehouses. Important commodities identified were: coal, fertilizers, stone, fly ash, POL+ kerosene, raw jute, jute textile, food grains, sugar, iron & steel products and salt. The RITES study estimated 25.90 million tons divertible traffic from Rail and 17.44 million tons divertible traffic from Road to National Waterway-1, if it is appropriately developed. There are ten commissioned and eleven under construction thermal power plants along the NW-1. The NTPC Thermal Plant at Barh alone is expected to transport 3 million metric tons of imported coal per year over a period of ten years. Therefore, if the capacity for navigation on NW-1 is developed to allow vessels of capacity of 1500-2000 DWT with appropriate warehousing, cargo handling facilities with road and rail connectivity, it will be best suited to transport bulk goods, hazardous goods and over dimensional cargo.

24. Is there any subsidy in Inland vessels building?

Answer:

To promote ship building industry under the 'Make in India' initiative, the Government provides financial assistance of up to 20 percent for ships build in the country. Further details may be found here: <http://shipping.nic.in/showfile.php?lid=2425>

25. Is there any freight subsidy in Inland Water Transport sector?

Answer:

The Government in November, 2016 extended the policy for reimbursement of freight for movement of phosphatic and potassic (P&K) fertilizers under the Nutrient Based Subsidy (NBS) and for movement of Urea by coastal shipping and Inland Water Transportation.

The subsidy that was earlier only applicable to the movement of fertilizers by rail from the plant or the port to various rake points in various districts , will now also apply to the movement of fertilizers through coastal shipping and IWT.

26. What are the recent developments in cargo movement on National Waterways?

Answer:

Dalmia Bharat Cement Ltd, on February 5, 2017 transported a consignment of 350 tonnes of cement from Haldia in West Bengal to Patna in Bihar on Iwai vessel MV Zakir Hussain.

The Hon'ble minister for Road Transport, Highways and Shipping on August 12, 2016, flagged off the trial run of two cargo vessels from Varanasi on NW1. The first vessel MV VV Giri (300 tons capacity) carried newly assembled cars of Maruti Suzuki India Ltd from Varanasi to Kolkata. The voyage of this vessel was completed in six days. The second vessel, MV Joy Basudev (1400 tons capacity) carried construction material from Varanasi and offloaded it at Gahzipur and Patna.

Iwai is planning to start the transportation of fertilizers from IFFCO Paradip to various destinations on NW1 by integrating coastal movement with IWT

27. What is the importance of National Waterway – 1?

Answer:

National Waterway- 1 (NW-1) on the Allahabad- Haldia stretch of Ganga-Bhagirathi-Hoogly River System is a waterway of truly national significance passing through the States of Uttar Pradesh, Bihar, Jharkhand and West Bengal. It potentially serves the major cities of Haldia, Howrah, Kolkata, Bhagalpur, Patna, Ghazipur, Varanasi and Allahabad, their industrial hinterlands and several industries located along the Ganga Basin. The rail and road corridors of this region are already saturated. Hence, development of NW-1 would result in an environment friendly, fuel-efficient and cost-effective alternative mode of transportation, especially, for bulk goods, hazardous goods and over-dimensional cargo.

28. What is 'Jal Marg Vikas'?

Answer:

The Hon'ble Union Finance Minister, in his Budget Speech for 2014-15, delivered on 10.07.2014, made an announcement that a project on the river Ganga called '**Jal Marg Vikas**' (National Waterways-I) would be developed between Allahabad and Haldia to cover a distance of 1,620 kms,

which would enable commercial navigation of at least 1,500 ton vessels and that the project would be completed over a period of six years at an estimated cost of Rs. 5369 crore. Thus Jal Marg Vikas is a project for capacity augmentation of navigation on National Waterway-1 (Allahabad-Haldia stretch of the Ganga-Bhagirathi-Hoogly River System).

29. Which is the Implementing Agency for Jal Marg Vikas project?

Answer:

Inland Waterways Authority of India has been designated as the Implementing Agency for the Jal Marg Vikas Project; vide Ministry of Shipping Gazette Notification No.WTC/-15025/7/2012-IWT (Vol.II) dated October 15, 2014.

30. What are the interventions envisaged in the capacity augmentation of navigation on NW-1 through Jal Marg Vikas Project?

Answer:

The interventions required for capacity augmentation of an inland waterway depends on various factors specific to each river, such as geophysical features and hydro-morphological characteristics. Depth on the navigational channel is the foremost requirement for making a waterway navigable and commercially viable. Ganga is a large alluvial Himalayan river and it typically has more depth in its lower reaches compared to upper reaches, since it is joined by tributaries carrying discharge from their own catchment areas. While IWAI has been able to maintain a Least Available Depth (LAD) of 2.5 meter between Haldia and Farakka, even a LAD of 2.0 meter could not be achieved in the upper reaches of NW-1 between Patna and Allahabad due to very low discharge and difficult hydro morphological characteristics. As a result, currently, vessels of the capacity of up to 750 DWT only can navigate on the NW-1.

In order to augment the capacity of NW-1, both short and long term interventions are envisaged.

Based on the numerical modelling and new bathymetric data which includes the survey of full width and banks of the river, the use of bandalling in combination with maintenance dredging and

use of agitation training methods for maintaining depth improvement and river training works are the short term solutions.

In this regard, IWAI is working on a proposal for Performance Based Maintenance Dredging Contract for Provision of least available depth (LAD) of 3 metres between Semaria to Barh, LAD of 2.5 metres between Barh to Ghazipur and LAD of 2.2 metres between Ghazipur to Varanasi.

More relevant solutions with widespread applicability and long term affect includes use of wider shallower draft vessels to reduce the required water depth and more vessels with improved manoeuvrability. In this regard, IWAI has awarded a contract to M/s DST, Germany to design vessels specially suited to navigate the 1620 Km stretch of NW-1.

31. What are the major benefits expected from capacity augmentation of National Waterway-1 through the Jal Marg Vikas Project?

Answer:

The major benefits expected from capacity augmentation of NW-1 through the Jal Marg Vikas Project are:

- i) **Decongestion of the road and rail transport:** The existing road and rail systems in the region are congested and a supplementary mode of transport is necessary to divert the traffic from the rail and road networks. Capacity augmentation, coupled with appropriate infrastructure interventions, on NW-1 would lead to increased cargo traffic on large vessels between the trade centres along the Ganga-Bhagirathi-Hooghly River System and its hinterland and would help in de-congesting the road and rail networks.
- ii) **Environmental, social and economic benefits:** Inland water transport reduces transport cost for shippers, reduces congestion and accidents on highways, bring convergence between river transport with the other modes of transport, namely, road transport and rail transport, and provide savings in carbon emissions for traffic.

Savings in transportation costs:

1 Horse Power energy moves 150 kg on road, 500 kg on rail and 4000 kg on water

1 litre of fuel moves 24 ton-km on road, 85 ton-km on rail & 105 ton-km on Inland Waterways.

Reduces transportation and transition losses.

- iii) **Best suited mode of transportation** for bulk goods, hazardous goods and over-dimensional cargo.

32. Which studies have been commissioned by IWAI on NW-1 in connection with the Jal Marg Vikas Project?

Answer:

The following three Studies have been commissioned:

1. Detailed Feasibility Study for Capacity Augmentation of NW-1 and Detailed Engineering for its Ancillary Works by the Joint venture of M/s Howe Engineering Projects (India) Pvt. Ltd. and M/s Rodic consultants Pvt. Ltd. The Consultant has submitted the following reports/documents so far:

- a) Feasibility Report
- b) Intervention Measures Report
- c) Detailed Project Report for NW-1
- d) Topographic and Bathymetric survey report for complete NW-1

2. Environmental and Social Impact Assessment Study (ESIA), including Environment Management Plan (EMP) and Resettlement Action Plan (RAP) by the Joint Venture of M/s. EQMS India Pvt. Ltd., M/s. Abnaki Infrastructure Application & Integrated Development Pvt. Ltd. and IRG Systems South Asia Pvt. Ltd. The Consultant has submitted the following reports so far:

- a) Basin level Critical Resource Study
- b) EIA and EMP reports for the Varanasi, Sahibganj and Haldia multi-modal terminals
- c) SIA and RAP reports for the Varanasi, Sahibganj and Haldia multi-modal terminals
- d) SIA & RAP and draft EIA & EMP Reports for the new Navigational Lock at Farakka
- e) EIA Report for the Turtle Sanctuary near Varanasi
- f) Consolidated EIA Report for NW-1
- g) Cumulative EIA Report for NW-1.

3. IWT Sector Development Strategy and Market Development Study for capacity augmentation of NW-1 by the Joint Venture of M/s. Hamburg Port Consulting, M/s. Universal Transport Consulting, M/s. IMS Ingenieure sell chat GmbH and M/s. Ramboll India. The Consultant has submitted the following reports so far:

- a) Traffic study reports for the Multi-modal terminals at Varanasi, Haldia, Sahibganj, Ghazipur and GR Jetty at Kolkata
- b) Market Development Analysis Report
- c) Institutional Development Study
- d) IWT Development Strategy

33. What are the main interventions planned to make the Jal Marg Vikas Project successful?

Answer:

Movement of larger quantities of goods and passengers will necessitate other infrastructural development, such as construction of multimodal and intermodal terminals with rail and road connectivity along with state-of-the-art loading and unloading facilities, provision of warehouses, commercial complexes, customs clearance facilities, boarding and lodging facilities, provision of jetties/ Ro-Ro crossings.

Following are the major interventions being planned and executed:

- a) Three multi-modal terminals at Varanasi (Uttar Pradesh), Sahibganj (Jharkhand), and Haldia (West Bengal)
- b) Three inter-modal terminals at Kalughat and Ghazipur, Triveni/Kalyani (tentative)
- c) New Navigation Lock at Farakka
- d) Five Ro-Ro terminals
- e) Development of Ferry services at Allahabad, Varanasi, Patna, Munger, Kolkata and Haldia.
- f) Vessel repair and maintenance facilities

34. Will development of terminals at different locations affect the aquatic life on NW-1, particularly the habitats of the river dolphins and turtles?

Answer: No

35. Is there any proposal to construct barrages on National Waterway-1?

Answer:

A detailed feasibility report of the engineering consultants engaged through the World Bank procurement procedure has completely ruled out any barrages on National Waterway-1 stretch (Varanasi to Haldia). No barrage will be constructed on this stretch of National Waterway-1 (river Ganga) under this project.

36. The riparian countries of Bangladesh, China and Nepal may be affected by development of National Waterway -1. Have any steps been taken to have a dialogue with the governments of these countries?

Answer:

As per the applicable World Bank Group Operational Policy 7.50, prior notification on the Jal Marg Vikas Project is required to be shared with all upstream and downstream riparian countries, namely, China, Nepal and Bangladesh. The World Bank advised IWAI to start discussing this project at a bilateral level with the counterparts in Bangladesh, while Notifications to China and Nepal could be

issued by either the Government of India (GOI) or the World Bank, as advised by Department of Economic Affairs of the GoI.

Accordingly, the matter was taken up with the Ministry of External Affairs. Ministry of External Affairs has intimated that there is no need for Government of India to issue notifications to China and Nepal or to take up the matter relating to Jal Marg Vikas Project bilaterally with Government of Bangladesh; and that, if it is a procedural requirement for World Bank, the Bank may issue such notifications to all the three countries. This position has been conveyed to the World Bank on 25.06.2015 by IWAI.

37. What is the basic requirement for making National Waterway -1 navigable and commercially viable?

Answer:

- i) Adequate discharge release regulations
- ii) Fairway maintenance (Three metre Least Assured Depth)
- iv) Multimodal terminal facilities
- v) Cargo commitments by industry/operators

38. Has any financial assistance been received from the World Bank for the Project?

Answer:

An Agreement for advancing a Project Preparation Fund Advance (PPFA) of US \$ 3.50 million has been signed between the World Bank and Department of Economic Affairs on 03.06.2015. The effective date of the PPFA is 03.06.2015. All admissible expenditure incurred on the project preparation activities for the Jal Marg Vikas Project from this effective date till the date of loan sanction by the World Bank will be met out of this PPFA as per the procedure prescribed in chapter 10 of General Financial Rules, 2005. The expected date of loan appraisal by the World Bank is November, 2016.

39. What are the various management/institutional arrangements made to ensure timely and quality execution of the Project?

Answer:

- (i) **Project Management Unit:** A Project Management Unit (PMU) with Member (Finance & Traffic) as Project Director was set up in June, 2015 in IWAI Head Office for immediately going ahead with the preparatory work relating to the Project. Other functionally essential Consultants/Specialists for Project Administration, Engineering, Procurement, Environmental and Social Development, Business Development Strategy, Communication and Finance have been engaged in the PMU in accordance with the Guidelines issued by the Ministry of Finance and the World Bank for engagement of Consultants. The required services of skilled manpower to provide assistance to the activities undertaken in the PMU are procured through outsourcing to an HR Agency, as per the procedure prescribed in the GFRs-2005.
- (ii) **Project Oversight Committee:** A Project Oversight Committee (POC) under the chairmanship of Chairman, IWAI was set up in September 2014 to provide critical guidance and evaluation of the Project. The POC comprises senior officers of IWAI, representatives of the stakeholder State Governments of UP, Bihar, Jharkhand and West Bengal and Central Water Commission.
- (iii) **Project Implementing Agency:** Ministry of Shipping, vide Gazette Notification dated 15
- (iv) 2014, has designated the Inland Waterways Authority of India as the Project Implementing Agency for the “Jal Marg Vikas Project”. With this notification, IWAI has the necessary legal backing to take forward all actions required for implementation of the Project, including collection of data from various authorities/State Governments.

- (v) Project Implementing Units have been set up at Varanasi, Patna and Kolkata to have onsite supervision and monitoring of work related to the Project.

40. What are the major projects envisaged under JMVP?

Answer:

(i) Construction of multi-modal terminal at Varanasi:

IWAI has awarded the contract for construction of Phase-I (A) of the terminal at an estimated cost of Rs.169.60 crore to M/s AFCONS Infrastructure Ltd. In May,2016. The Hon'ble Minister for Shipping, Road Transport and Highways laid the foundation stone for phase-I of the Terminal on August 12, 2016. The cargo handling capacity of the Terminal is estimated to be 0.58 MMTPA. The cargo to be handled in the Terminal include cars, stone chips, coal, cement, food grains, fertilisers, and sugar among others.

(ii) Construction of multi-modal terminal at Haldia:

IWAI has awarded the contract for constructing a Rs 517 crore state-of-the-art multi-modal terminal at Haldia, West Bengal to the infrastructure firm M/s ITD Cementation Limited.

To be completed by August, 2019, the cargo handling capacity of the proposed terminal is estimated to be 3.18 MTPA in Phase I. IWAI expects 7.95 MillionTonnes Per Annum (MTPA) of cargo traffic at the Haldia terminal by 2020. The cargo projection for 2025 is 15.59 MTPA, growing up to 24.04 MTPA in 2045. Given its location, the terminal will be used to transport coal, fly ash, chemicals, petroleum & gas, construction materials, fertilizers and edible items.

The Terminal will have facilities including terminal administrative building, electric sub-station building, fuel bunker, storage shed, parking etc.

(iii) Construction of multi-modal terminal at Sahibganj:

IWAI has awarded the contract for construction of phase-I (A) of the terminal at an estimated cost of Rs.280.90 crore to M/s Larson & Toubro (L&T) Infrastructure Ltd. In October, 2016. The state

of the art terminal at Sahibganj will have cargo handling capacity of 2.24 MTPA on completion of Phase-1 in 2019. The Terminal will have facilities including berthing space for two vessels, stockyard for storing, belt conveyer system with fixed hoppers, barge loader, shore protection works, roads, ramps & parking area, and terminal buildings. Other than coal, stone chips is another cargo expected to be transported through the Terminal.

(iv) Construction of a new navigation lock at Farakka Barrage:

IWAI has awarded the contract for construction of a new navigation lock to Larsen and Toubro (L&T) Infrastructure Ltd. in November, 2016.

A navigational lock is a structure used for raising and lowering ships/vessels between stretches of water of different levels on river and canal waterways.

The existing navigation lock at Farakka constructed in 1975 is critical to the smooth movement of traffic on NW-1. It provides the link between the Bhagirathi-Hooghly system and the main Ganga river. The size of the existing chamber limits the dimensions of vessels that can transit through the lock. Heavy siltation at the lock and its approaches are also slowing down navigation. This lock is also in need of major repair and maintenance. When the lock is not operational, all navigation between the lower and middle sections of NW-1 comes to a standstill. A new parallel lock designed to allow concurrent two-way movement of vessels with least usage of water is being constructed.

The new navigation lock, which will be constructed at an estimated cost of Rs 359 cr, will incorporate latest technology concepts when it comes to designing critical elements such as the lock gates (Mitre, Caisson) or the filling and emptying system, as well as in setting norms for its operation and maintenance and reliability so as to minimise downtime. It is likely to reduce the time a vessel takes to cross from current 2 hours to 38 minutes. If movement of a vessel is followed by movement of another vessel in the reverse direction, the operating time is likely to be 23 minutes only.

Further the construction of new navigation lock will have no impact on the treaty signed in 1996 between India and Bangladesh.

(vi) Development of Kolkata and Patna terminals under PPP mode: In order to scale up private investment in the IWAT sector, IWAI has identified Kolkata terminal (GR Jetty-1, GR

Jetty-II and BISN) and Patna terminal (Gaighat and Kalughat) for their development and operation under the Public-Private-Partnership (PPP) mode. The International Finance Corporation, a constituent of the World Bank Group, with whom IWAI has an agreement for lead advisory support services, has been assigned through a notification dated 19.06.2015 the task of bringing on board a private sector player to install required cargo handling equipment and subsequently operate the Terminal on a long term basis.

vi) **Ferry terminals in six cities :**

IWAI has awarded contract to a joint venture of Thompson Design Group (TDG), Boston (USA) and Infrastructure Architecture Lab of Massachusetts Institute of Technology (MIT) (USA) for identifying suitable locations for construction of 18 ferry terminals in six cities - Allahabad, Varanasi, Patna, Munger, Kolkata and Haldia on NW-1. The consultants will also prepare Detailed Project Report (DPR) and tender documents for the 18 terminals

(vii) **Least Available Depth (LAD)**

One of the most important navigational challenges for NW-1 is maintaining a depth of the river which is navigable for vessels with the capacity of 1500-2000 tons. The objective of the project is to achieve a depth of 3 metres from Haldia to Barh, 2.5 metres from Barh to Ghazipur and 2.2 metres from Ghazipur to Varanasi with 45 metres width to enable commercial navigation of vessels with capacity of 1500-2000 DWT. IWAI is working on a proposal for Performance Based Maintenance Dredging Contract for Provision of least assured depth (LAD) of 3 metres between Semaria to Barh, LAD of 2.5 metres between Barh to Ghazipur and LAD of 2.2 metres between Ghazipur to Varanasi.

(viii). **Low draft vessels**

Keeping in view the difficult hydro-morphological characteristics of the river in the upper reaches between Patna and Varanasi, it is important to have vessels which can ply on low draft, with high carrying capacity, and are economically viable and environment friendly. In keeping with this objective IWAI in August, 2016 signed a contract with M/s DST, Germany to design vessels, especially suited to navigate the 1620 km stretch of NW-1. Considering the expected growth of the

inland waterways sector in India, the company is expected to develop a combination of standardised vessels to meet the requirement of various types of cargo.

(ix) River Information Services (RIS) on National Waterway -1:

IWAI has taken up a technologically challenging project of setting up of River Information Service System on NW -1 for the first time in India. River Information System (RIS) are equipment, hardware and software information technology (IT) related services designed to optimize traffic and transport processes in inland navigation. The system will enhance swift electronic data transfer between mobile vessels and shore (Base Stations) through advance and real-time exchange of information. RIS aims to streamline the exchange of information between waterway operators and users. This would facilitate inland navigation safety, optimization of the resource management of waterborne transport chain by enabling information exchange between vessels, lock and bridges, terminals and ports, status of fairways, calamity abatement etc.