



जलमार्ग • Jalmarg

(त्रैमासिक ई-पत्रिका)



भारतीय अन्तर्देशीय जलमार्ग प्राधिकरण • INLAND WATERWAYS AUTHORITY OF INDIA

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संदेश

त्रैमासिक ई-पत्रिका "जलमार्ग" के प्रथम अंक को जारी करते हुए मुझे अत्यंत प्रसन्नता हो रही है। यह ई-पत्रिका अंतर्देशीय जल परिवहन के क्षेत्र में उपलब्धियों, गतिविधियों और भारतीय अंतर्देशीय जलमार्ग प्राधिकरण के योगदान को प्रदर्शित करेगी। इस प्रकार यह सभी आगंतुकों, हितधारकों और संगठन के भीतर भी जानकारी को प्रसारित करने के प्रयोजनार्थ कारगर होगी। आशा है कि वेबसाइट का अवलोकन करने वाले आगंतुकों तक यह पत्रिका सुलभ हो सकेगी और देश को अंतर्देशीय जल परिवहन के विकास के बारे में जागरूक करेगी।

MESSAGE

It is immense pleasure to issue the first edition of quarterly e-Magazine "JALMARG". The e-Magazine will showcase the achievements, activities in the field of IWT and contribution of IWAI, thus becoming a tool for disseminating the information to all visitors, stakeholders and also within the organisation also. The magazine will reach visitors visiting the website and will generate awareness on development of IWT in the country.

डॉ. अमिता प्रसाद, भा.प्र.से.
अध्यक्ष

: EDITORIAL TEAM :

- Col. Manish Pathak,
Secretary
- Sh. U. K. Sahai,
Dy. Secretary
- Sh. A. K. Bansal,
Director
- Sh. Arvind Kumar,
Hindi Officer

परिचय :

भारतीय अंतर्देशीय जलमार्ग प्राधिकरण को 1986 में संसद के अधिनियम द्वारा स्थापित किया गया है। प्राधिकरण के गठन का उद्देश्य नौवहन और नौचालन के लिए और उनसे जुड़े या प्रासंगिक मामलों के लिए अंतर्देशीय जलमार्गों का विनियमन और विकास करना है।

तदनुसार गंगा नदी पर इलाहाबाद और पटना के बीच 600 कि.मी. प्रखंड में रु. 9.79 करोड़ की अनुमानित लागत पर पायलट परियोजना शुरू की गई थी। इस हेतु दिनांक 19.02.1985 को रु. 9.79 करोड़ मंजूर किए गए थे जिसे संशोधित कर रु. 18.76 करोड़ कर दिया गया था। इसके अलावा अक्टूबर, 1985 के दौरान निम्नलिखित उद्देश्यों के लिए नीदरलैंड और भारत सरकार के बीच साइड लेटर और परियोजना दस्तावेजों के आदान प्रदान सहित डीएफएल 181.31 लाख की उच्च वित्तीय सहायता के साथ पायलट परियोजना को भी क्रियान्वित किया गया था :-

- i) इलाहाबाद और पटना के बीच नियमित नदी सेवाओं को शुरू करने के लिए आवश्यक उपायों की पहचान करना अल्पकालिक उद्देश्य है।
- ii) इलाहाबाद और पटना के बीच राष्ट्रीय जलमार्ग-1 पर नियमित वाणिज्यिक नौचालन को विकसित करना दीर्घकालिक उद्देश्य है।
- iii) इलाहाबाद और पटना के बीच नियमित नदी सेवाओं को शुरू करने के लिए आवश्यक उपायों की पहचान हेतु परियोजना के प्रमुख उद्देश्यों और अल्पकालिक उद्देश्यों के तहत निम्नलिखित गतिविधियां की गई थीं।

नौचालन सहायता/चौनल मार्किंग बंडालिंग, सर्वेक्षण, निकर्षण, बार्जिंग और प्रशिक्षण। निकर्षक "यमुना", कार्य बोट "लिली", सर्वे लॉन्च "कोसी" और कार्गो जलयान "राजगोपालाचारी" नीदरलैंड सरकार द्वारा 25 नवंबर, 1988 को कोलकाता में सुपुर्द किए गए थे। यमुना, लिली और कोसी के जहाजों का प्रबंधन और संचालन भाअजप्रा के कर्मचारियों द्वारा किया जाता है। उथले ड्राफ्ट जलयान राजगोपालाचारी का प्रबंधन सीआईडब्ल्यूटीसी चालक दल द्वारा किया जाता है। जलयानों के संचालन और रखरखाव के लिए उच्च तकनीकी कर्मियों द्वारा भाअजप्रा और सीआईडब्ल्यूटीसी कर्मचारियों को प्रशिक्षण दिया गया। सर्वे उपकरण ड्रेजर, टग, हाउस बोट, वर्क बार्ज, उथले ड्राफ्ट वेसल, सर्वे लॉन्च और क्रू लॉन्च भी खरीदे गए।

टर्मिनल :- वर्तमान निकट भविष्य के यातायात के स्तर और नदी के प्लेटफॉर्म में शिपट पर अपर्याप्त डेटा को देखते हुए प्रारंभिक चरण में केवल अस्थायी पटून-गैंगवे टर्मिनल प्रस्तावित किया गया था।

टर्मिनलों स्थलों का चयन करते समय निम्नलिखित बिंदुओं की सावधानीपूर्वक जांच की गई थी :

- स्थिर तटीय नगर भाग (स्टेबिल वाटरफ्रंट) - जल आपूर्ति और बिजली प्रदान करने में आसानी।
- उच्च तट के पास पानी की पर्याप्त गहराई - पर्याप्त बैक-अप क्षेत्र की उपलब्धता।
- सड़क और रेलवे संपर्क

प्रत्येक टर्मिनल को औसतन 2.50 एकड़ भूमि पर स्थापित करने का प्रस्ताव था।

संचार :

प्रारंभ से इलाहाबाद से पटना खंड तक की समग्र संचार प्रणाली को कवर करने के लिए और नौएड में मुख्यालय के साथ जोड़ने के लिए प्रत्येक 25 किमी की रेंज के साथ वीएचएफ स्टेशनों हेतु स्थापन के अतिरिक्त नौएडा, इलाहाबाद, वाराणसी और पटना में एचएफ वायरलेस स्टेशनों का प्रस्ताव था। वीएचएफ संचार प्रणाली के साथ सभी ड्रेजिंग-यूनिट, सर्वेक्षण, एफएसबी, एलसीडी यूनिट और सीपीबी भी प्रदान किए जाने थे। पायलट प्रोजेक्ट के अध्ययन ने बाधाओं का पता लगाने के साथ तकनीकी व्यवहार्यता की पुष्टि की है। स्पष्ट है, अगला चरण इन्फ्रास्ट्रक्चर सुविधाओं, टर्मिनलों, जलयानों और संगठन के प्रावधान द्वारा आईडब्ल्यूटी प्रणाली के विकास के लिए था।

प्रशिक्षण :

अक्टूबर 1987 और जून 1989 के दौरान निम्नलिखित विषयों में उच्च विशेषज्ञों द्वारा प्राधिकरण के कर्मियों को प्रशिक्षण दिया गया था :

कम्प्यूटर तकनीक, डीबीएमएस, और कम्प्यूटर सॉफ्टवेयर जैसे एचवाईएमओएस, एसईएफएलओडब्ल्यू, एसएचआईपीएमए, ड्रेजिंग तकनीक, रिवर इंजीनियरिंग, नौचालन, आईडब्ल्यूटी, टर्मिनल, रिमोट-सेंसिंग, प्रयोगशाला विश्लेषण, जलीय सर्वेक्षण और डेटा संग्रह एवं विश्लेषण, सर्वेक्षण उपकरण, प्रयोगात्मक नौका, कम लागत वाली ड्रेजिंग एचडब्ल्यू मार्किंग। जुलाई और दिसंबर, 1988 के दौरान प्राधिकरण के अधिकारियों के लिए नीदरलैंड में फैलोशिप प्रशिक्षण भी नीदरलैंड सरकार द्वारा आयोजित किए गए थे। अक्टूबर, 1985 से जून, 1989 तक इलाहाबाद और पटना के बीच नदी खंड पर पायलट परियोजना निष्पादित की गई।

Theme : HYDROGRAPHY :

Hydrography: Hydrography is the science which deals with measurements and description of the under-water features of the oceans, seas, lakes, rivers, and their adjoining coastal areas, with particular reference to their use for navigational purposes. Hydrographic surveys are also useful in determining information needed for design and construction of structures adjacent to or under water. Such information is also needed when dealing with desilting of Seas, Rivers, Lakes and channel bottoms.



Lead line and sounding pole survey

History of Hydrographic Surveying:

Seas and River are major source of transport from ancient time. Maritime transport was the most effective mean and major development occurred along the river banks. The history of hydrographic surveying dates almost as far back as that of sailing. For many centuries, a hydrographic survey required the use of either a sounding pole or a lead line. these techniques were used from the start of hydrographic surveying, dating back to at least the ancient Egyptians and continued in wide use until the 1930's. For obvious reasons, these techniques were slow, relatively inaccurate, and prone to missing important details in the bathymetry

between "spot" soundings. The process was labour-intensive and time-consuming and, although each individual depth measurement could be accurate, even a thorough survey as a practical matter could include only a limited number of sounding measurements relative to the area being surveyed, inevitably leaving gaps in coverage between single soundings. Determine absolute location/ position and direction of any line on the surface of the Earth.

Lead line and sounding pole survey

Astronomical observation to celestial bodies such as Moon, Sun, Star and planets were carried out to determine absolute location of any points /object and Orientation.



LIDAR

Single-beam echo sounders began to enter service in the 1930s which used soundwaves to measure the depth beneath a vessel. This greatly increased the speed of acquiring sounding data over the lead lines and sounding poles by allowing information on depths beneath a vessel to be gathered in a series of lines spaced at a specified distance.

eventually made the wire-drag system obsolete. Side scan sonar could create images of underwater obstructions with the same fidelity as aerial photography, while multibeam systems could generate depth data for 100 percent of the bottom in a surveyed area. These technologies allowed a single vessel to do what wire-drag surveying required two vessels to do, and wire-drag surveys finally came to an end in the early 1990s.



AUV

The rise of new electronic technologies:

With the introduction of Side scan sonar and multibeam swath systems – in the 1950s, 1960s and 1970s

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Modern surveying:

Modern surveys use advanced technology such as LiDAR to map hydrographic surveys. Equipment can be installed on inflatable craft, such as Zodiacs, small craft, autonomous underwater vehicles (AUVs), unmanned underwater vehicles (UUVs) or large ships, and can include side scan, single-beam and multibeam equipment. At one time different data collection methods and standards were used in collecting hydrographic data for maritime safety and for scientific or engineering bathymetric charts, but increasingly, with the aid of improved collection techniques and computer processing, the data is collected under one standard and extracted for specific use (for example, navigation charts, Digital Terrain Model, volume calculation

for dredging, topography, or bathymetry).



AUV

The final output of charts can be created with a combination of specialty charting software or a computer-aided design (CAD) package.

Applications of Hydrographic Survey: The followings are the major applications of Hydrography:

- a) Route Survey/ Pipeline Survey
- b) Deep sea Mining
- c) EEZ /CRZ Survey
- d) Pre and Post dredge Analysis
- e) Hydrological Modeling
- e) Environmental Protection
- f) Resources Management
- f) Chart Preparation for Navigational safety.

IWAI is specialized organization to carry out the bathymetric survey in the Inland Waterways. Regular bathymetric surveys are being carried out on National Waterways to provide the safe navigation route on National Waterways.

JAL MARG VIKAS PROJECT (JMVP) :

The Jal Marg Vikas Project for capacity augmentation of National Waterways -1 (Ganga-Bhagirathi-Hooghly) river system is implemented by the Inland Waterways Authority of India, Ministry of Shipping with technical and financial assistance of The World Bank with estimated project cost of INR 5369.18 Crores.



The development objective of JMVP project is to enhance transport efficiency and reliability of Inland Waterways for handling logistics. The project comprises of several components and subset activities that aiming to develop Inland shipping, the improvement in ports and marine infrastructure may increase navigability for 1000-1500 Dead Weight Tonnage barges along NW-1 stretch from Haldia-Varanasi (1320 Kilometres) by FY 2023.

National Waterways-1 from Allahabad – Haldia stretch of Ganga-Bhagirathi-Hooghly river system truly considered for national economic importance perspectives, the National Waterways-1 corridors of NW-1 passes through densely populated states of Uttar Pradesh, Bihar, Jharkhand and West Bengal, the hinterlands located potential Industries, economic clusters, urban settlements, regional rural villages and towns etc.



Jal Marg Vikas Project is the first major infrastructure project on development of Inland Water Transport sector in India, the various scoping missions of World Bank & several market feasibility studies and detailed engineering studies revealed that operationalization of NW-1 corridors enables transportation of bulk cargo like cement, fly ash, fertilizer, food grains, edible oil, containers, construction materials, project cargo and over dimensional cargo etc. Additionally the regional economic integration may improves due to enhanced connectivity with support of Ro-Ro & Ferry services and the development of cruise vessel operations may also spurt roots for promoting several tourism sites of historical, cultural, religious and pilgrimages etc.



The major engineering interventions are proposed under the Jal Marg Vikas Project are as follows:

- Construction of three multi-modal terminal at Varanasi, Sahibganj and Haldia
- Construction of Inter-modal terminals at Ghazipur and Kalughat
- Construction of New Navigational Lock at Farakka
- Fairway development to provide LAD of 3 meter from Haldia – Barh, 2.5 meter from Barh-Ghazipur and 2.2 meter from Ghazipur-Varanasi etc.
- River training works and re-engineering and bend corrections works
- Strengthening of Navigational Aids such as Channel Marking, Bandalling, Night Navigational Aids, including DGPS, river maps and charts etc.
- Provision for development of River Information System and Vessel Traffic Management System along NW-1
- Construction of five Ro-Ro Pairs
- Construction of Integrated ship repair facility and maintenance complexes etc.

The project has also encouraged several private sector participation under PPP model and the institutional arrangements are aligned for speedy and efficient implementations of plan on ground.



IWT Traffic :

- One Over Dimensional Cargo (436 MT) of Bharat Heavy Electricals Ltd. (BHEL) for the Project Bangladesh - India Friendship Power company (Private) Limited transported from Kolkata to Mongla, Bangladesh successfully through Indo - Bangladesh Protocol route under PIWT&T.
- A webinar on "Sonamura - Gateway to Tripura through Waterways" was conducted (on 4th August 2020 from 3pm to 5 pm) with an objective to promote the Daudkandi - Sonamura trade route among industry and stakeholders and provide necessary information on the use of newly added waterway to PIWT&T.
- Trial run of two Ro-Ro Vessels M.V. Adi Shankara and M.V. CV Raman under construction at Cochin Shipyard for NW-3 has successfully been carried out.
- Newly built Ro Pax vessel M.V. Swami Vivekanand & Ro-Ro Vessel M.V. RN Tagore arrived in Varanasi and Ro Pax vessel M.V. Sam Manekshaw and cargo vessel M.V. Lal Bahadur Shastri arrived in Patna. A webinar on "Sonamura - Gateway to Tripura through Waterways" was conducted (on 4th August 2020 from 3pm to 5 pm) with an objective to promote the Daudkandi - Sonamura trade route among industry and stakeholders and provide necessary information on the use of newly added waterway to PIWT&T.

Events & other highlights :

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- An e-Conference - Atmanirbhar in Indian Maritime Industry: Fuelling the Growth of Indian Economy held on 21st August 2020.



- e-Conference on India Maritime Technology : Inland Water ways - Possible Futuristic Mode of Transportation CII held on 21 August, 2020.

Employee corner's :

- Member (Finance), IWAI repatriated to his parent office on 31.08.2020.
- Sh. Kunwar Bahadur Singh, UDC, IWAI, Noida superannuated on 31.08.2020.

Major IWT activities carried at a glance



The first consignment of goods from Munshiganj / Daudkandi (Bangladesh) to Sonamura (Tripura, India) as a part of trial run was successfully carried out from 3rd Sep'2020 to 5th Sep'2020 in new IBP route no. 9 & 10 of PIWT&T. The vessel was received by Hon'ble Chief Minister, Govt. of Tripura on 05.09.2020.



Bangladesh flag vessel M.V. Premier on her way to Sonamura from Daudkandi



Newly built Ro-Pax vessel Swami Vivekananda on her voyage on NW-1



Cargo vessel RN Tagore berthed at MMT Varanasi on NW-1



Newly built Ro-Pax vessel Sam Manekshaw berthed at High level Jetty, Patna on NW-1