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जलमार्ग • Jalmarg

(त्रैमासिक ई-पत्रिका)

भारतीय अन्तर्देशीय जलमार्ग प्राधिकरण ● INLAND WATERWAYS AUTHORITY OF INDIA
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INSIDE THE ISSUE:

संदेश

भारतीय अंतर्देशीय जलमार्ग प्राधिकरण की विकासात्मक गतिविधियों को प्रदर्शित करने वाली त्रैमासिक ई-पत्रिका "जलमार्ग" के पांचवां अंक हेतु संदेश के रूप में अपने विचार व्यक्त करते हुए मुझे अत्यंत प्रसन्नता हो रही है। ऐसा अनुभव किया गया है कि संगठन के विकास को हितधारकों के साथ साझा करने के लिए ई-पत्रिका संसूचना का एक अच्छा माध्यम है। मैं सचिव, भाअजप्रा के नेतृत्व में संपादकीय टीम के दृढ़ संकल्प की सराहना करता हूं।

साथ ही पत्रिका के जरिये भारतीय अंतर्देशीय जलमार्ग प्राधिकरण द्वारा किए गए विकास कार्य और आशा करता हूं कि तिमाही के दौरान अंतर्देशीय जल परिवहन की उपलब्धियां तीव्रता से अनुगामियों तक पहुंचती हैं।

भारतीय अंतर्देशीय जलमार्ग प्राधिकरण द्वारा निर्धारित लक्ष्य की प्रगति के दृष्टिगत सभी हितधारकों के सामूहिक प्रयासों से भा.अ.ज.प्रा. ने न केवल 75 एमएमटी के लक्ष्य की प्राप्ति की है बल्कि वित्त वर्ष 2020–21 में यह निर्धारित लक्ष्य से अधिक 83.64 एमएमटी हो गया और इस प्रकार वित्त वर्ष 2019–20 में हुई 1.8% की वृद्धि की तुलना में इसमें 13.54 की तेज वृद्धि दर्ज की गई।

इस पुनीत कार्य को जारी रखने के लिए मैं सभी सहयोगियों को हार्दिक शुभकामनाएं देता हूं और ई-पत्रिका को निरंतर व समय पर सफलतापूर्वक प्रकाशित करने के लिए तथा इस हेतु भावी प्रयासों के लिए शुभकामनाएं देता हूं।

MESSAGE

It gives me immense pleasure to pen down the message for the Fifth Quarterly e-Magazine "JALMARG" showcasing the developmental activities of IWAI. It has been experienced that sharing of development in the organization through e-magazine is the best way to communicate with the stakeholders. I appreciate the editorial team lead by Secretary, IWAI, for their focused determination.

The development work carried out by the Inland Waterways Authority of India and the achievements in Inland Water Transport during the quarter reach to the followers in a quickly manner.

IWAI has taken measures to increase movement of cargo through National Waterways. With close monitoring of the progress of target set by IWAI along with concerted efforts of all stakeholders, IWAI has not only achieved the target of 75 MMT, but surpassed it at 83.64 MMT in FY 2020-21 and recorded a steep increase of 13.54% as compared to 1.8% in the FY 2019-20.

I extend my warm wishes to all concerned to continue the good work and make the e-Magazine continuation a timely and successful one and wish the very best in future endeavours.

जयंत सिंह, आई आर टी एस,
अध्यक्ष

परिचय:

(i) रेलवे, सड़क परिवहन, तटीय नौवहन, अन्तर्देशीय जल परिवहन, पाइपलाइन और वायु परिवहन युक्त परिवहन क्षेत्र किसी भी देश के आर्थिक विकास हेतु अहम अवसंरचना है। एक विकसित परिवहन प्रणाली मल्टीमॉडल नेटवर्क में परिवहन की ईष्टतम लागत को मामला दर मामला आधार पर सभी मॉडलों की शक्तियों का प्रयोग करते हुए संभव बनाती है। ऐसे गलियारों में जहां अन्तर्देशीय जल परिवहन को तुलनात्मक रूप से बड़े आकार के नौचालन चैनल के साथ विकसित कर इन्हें तकनीकी- वाणिज्यिक व्यवहार्य बनाया जा सकता है, वहां ये लागत प्रभावी, पर्यावरण सुलभ और ईंधन दक्ष परिवहन साधन प्रदान कर सकते हैं, विशेषकर इसका प्रयोग भारी मात्रा में सामानों, संकटपूर्ण कार्गो और अति बड़े आकार के कार्गो के लिए किया जा सकता है। कुछ विकसित देशों (जैसे अमेरिका, चीन और अनेक यूरोपीय देशों में) जहां अन्तर्देशीय जल परिवहन (आई डब्लू टी) क्षेत्र के विकास पर विशेष ध्यान दिया जाता है, वे अपनी अर्थव्यवस्थाओं के विकास में इसका काफी उपयोग कर रहे हैं।

(ii) भारत में अनेक नदियां, नहरें, संकरी खाड़ी और बैकवाटर है, जिन्हें लागत प्रभावी और पर्यावरण अनुकूल परिवहन साधन के रूप में उपयोग में लाने की काफी संभावनाएं हैं। 20वीं शताब्दी के प्रारंभ तक आईडब्लूटी को देश के विभिन्न भागों में परिवहन के महत्वपूर्ण साधन के रूप में प्रयोग किया गया था। तथापि, सड़कों और रेलवे के तीव्र विकास, देश में थोड़े औद्योगिक विकास, सहित अनेक कारणों से अन्तर्देशीय जल परिवहन इत्यादि के अनुरक्षण और विकास पर काफी कम ध्यान दिया गया, अनेक जलमार्ग, रेल और सड़क साधनों की तुलना में प्रतिस्पर्धात्मक रूप से पीछे रह गए।

(iii) अपर्याप्त अवसंरचनात्मक सुविधाएं जैसे वर्ष भर प्रचालन हेतु आईडब्लूटी जलयानों की आवाजाही हेतु आवश्यक गहराई और चैड़ाई, कार्गो के लदान और ढुलाई के लिए टर्मिनल और सड़क/रेल के साथ संपर्क, दिन और रात के दौरान सुरक्षित और अबाधित नौवहन हेतु नौवहन सहायता और आईडब्लूटी जलयानों की कमी कुछ ऐसी मुख्य बाधाएं हैं, जिनका सामना अन्तर्देशीय जल परिवहन क्षेत्र द्वारा किया जा रहा है। पर्याप्त आईडब्लूटी आवाजाही के लिए इस बात पर बल दिया जा रहा है कि आवश्यक अवसंरचना (मुख्यतः सरकारी वित्तपोषण) का निर्माण हो और इसके साथ-साथ मुख्यतः निजी क्षेत्र द्वारा आईडब्लूटी बेड़े में वृद्धि की जाए।

(iv) भारतीय अंतर्देशीय जलमार्ग प्राधिकरण को वर्ष 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।

(v) भारतीय अन्तर्देशीय जलमार्ग प्राधिकरण (भा.अ.ज.प्रा.) अधिनियम, 1985 की धारा 14 के तहत भा.अ.ज.प्रा. ऐसे जलमार्गों के विकास और विनियमन के लिए अधिदिष्ट है जो राष्ट्रीय जलमार्ग के रूप में घोषित हैं। वर्ष 2014 तक निम्नलिखित जलमार्गों को राष्ट्रीय जलमार्ग (रा.ज.) घोषित किया गया था:-

i. **राष्ट्रीय जलमार्ग -1**: उत्तर प्रदेश, बिहार, झारखण्ड और पश्चिम बंगाल राज्यों में गंगा-भागीरथी-हुगली नदी प्रणाली (हल्दिया से इलाहाबाद तक-1620 किमी.) - वर्ष 1986 में घोषित किया गया।

ii. **राष्ट्रीय जलमार्ग -2:** असम राज्य में ब्रह्मपुत्र नदी (धुब्री से सदिया तक - 891 किमी.) - वर्ष 1988 में घोषित किया गया।

iii. **राष्ट्रीय जलमार्ग -3:** केरल राज्य में उद्योगमण्डल और चम्पाकारा कैनाल सहित पश्चिम तट कैनाल (कोट्टापुरम से कोल्लम तक) (205 किमी.) - वर्ष 1993 में घोषित किया।

iv. **राष्ट्रीय जलमार्ग -4:** आंध्रप्रदेश, तमिल नाडु और संघशासित प्रदेश पुडुचेरी राज्यों में गोदावरी और कृष्णा नदियों सहित काकीनाडा से पुडुचेरी कैनाल तक (1078 किमी.) - वर्ष 2008 में घोषित किया गया।

v. **राष्ट्रीय जलमार्ग -5:** पश्चिम बंगाल और उड़िसा राज्यों में ब्राह्मणी नदी और महानदी डेल्टा सहित पूर्व तट कैनाल (588 किमी.) - वर्ष 2008 में घोषित किया गया।

वर्ष 2016 में संसद द्वारा राष्ट्रीय जलमार्ग अधिनियम, 2016 पारित किया गया, जिसके तहत देश के 106 नए जलमार्गों को राष्ट्रीय जलमार्ग के रूप में घोषित किया गया। इस प्रकार, देश में पूर्व के 5 राष्ट्रीय जलमार्गों को मिलाकर अब कुल राष्ट्रीय जलमार्गों की संख्या 111 हो गई है। इन जलमार्गों में व्यवहार्य जलमार्गों के विकास हेतु भा.अ.ज.प्रा. द्वारा कई विकासात्मक कार्य किए जा रहे हैं।

इसके अलावा, भा.अ.ज.प्रा. व्यापार और पारगमन हेतु भारत-बांग्लादेश प्रोटोकॉल मार्ग के तहत कई कार्य कर रहा है, जिससे एक देश का अन्तर्देशीय जलयान दूसरे देश के विनिर्दिष्ट मार्गों से होकर चल सकता है।

Importance of Integrated Puducherry- Kakinada canal system (The Buckingham & Irrigation cum Navigation canal) for the viable Inland navigation system on National Waterways No: 4

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1. Introduction

While consolidated power in India during the 18th century, the British Govt had to depend on the inland waterways developing as the suitable means and mode of commodity movement in pursuing its primary goal of trade and commerce and territorial expansion in the absence of transport infrastructure, what it exists today. They used natural water resources like rivers, creeks, lagoons, and lakes for inland navigation & Inland Water Transport as the first surface mode of transport. Subsequently, for IWT system from the coastal regions and smaller stretches of river courses to the interiors and away from the rivers & connectivity to different natural water bodies, the navigation through irrigation canal or exclusive canal system was conceptualized by the end of the eighteenth century and developed several such canal systems in different parts of India during the 19th century. These canal systems provided the dynamic and essential mode of transportation being the lifeline wherever such system of inland navigation and IWT system developed, and same continued till the independence of India and beyond, depending on the development of road and mode of transport. The integrated Kakinada-Puducherry canal system comprising Buckingham canal and irrigation cum navigation canal system originated from the barrages on the river Godavari and Krishna running parallel to the coromandel coast was one of such made-made canal systems being vibrant & bustling with activities till 1960-70. Although these canal systems are now the integral part of NWs- 4 since 2008, no tangible developmental action stated to be in the absence of any economic viability is yet to be framed up and execution commenced.

2. Brief History

The Buckingham Canal system

The Buckingham Canal system, a saltwater navigation canal running from Pedaganjam in Andhra Pradesh to Marakkanam in Tamil Nadu and through Kalluvelly tank in Puducherry for a total length of 448 km, was developed by the British Government in phases. The vision to build a canal system started in 1782 by Stephen Popham, a great administrator noticing the need for connectivity between two water bodies, i.e., Elambor river and Tiruvottiyur river with Ennore lake disconnected by a landmass for commencement of the inland navigation. The

canal's construction began in 1806 initially for a 16.5 km stretch from Madras Port to Ennore by the Basil Cochrane company. Subsequently, the entire span of the canal system was developed in phases and completed in the late nineteenth century. The planning and development of the canal system was on the Design-Build-Operate project delivery system similar to the present day much-acclaimed Build-Own- Operate-Transfer model.

The canal was initially named the "Cochrane" canal, later on, Lord Clive and, during 1878, renamed as Buckingham Canal system after the Duke of Buckingham & Chandok. Out of 448 km, 189 km are in Tamil Nadu, 257 km in Andhra Pradesh and remaining 2 km are in Poduchery. The canal system traverses through different west-east flowing rivers, Pullicat lake & Ennor lake, and finally, Kalluvaly Tank connected through the artificial canal system with natural backwaters along the coast having sea mouth at various locations. The stretch of the canal from Peddaganjam to Chennai Port for 326 km is called the "**North Buckingham canal,"** and the canal path from Chennai to Marakkanam for a total length of 112 km is **"South Buckingham canal".**

Kakinada to Pedaganjam stretch irrigation cum Navigation canal system

This Irrigation cum navigation canal system for 347 km from Rajahmundry-Kakinada- Pedaganjam comprises three distinct canal stretches of the Kakinada, the Eluru, and Commamur canal developed by the British Government after the construction of anicuts on the river Godavari and the Krishna at Rajahmundry and Vijayawada, respectively. The eminent British Hydraulic Engineer, Sir Cotton Arthur, conceptualized these anicuts and constructed them as multipurpose projects for providing irrigation and navigation. The anicut built over the Godavari River in 1850, named as Dowleswaram, was subsequently renamed Cotton Arthur Thomas barrage in 1970 after its reconstruction. The anicut built over the river Krishna from 1852-55 was named as Prakasam Barrage on its reconstruction during 1952-77.

3. Waterways system with engineering marvels

The British Government developed the entire canal system from Marakkanam to Kakinada with the intersection of different rivers, lakes, and backwaters opening to the sea mouths with 48 navigation locks of different types and sizes to facilitate smooth navigation of the boats in different water levels. The fairway development for both the irrigation, tidal & non-tidal stretches as stated to be of contemporary technology as prevailing worldwide for facilitating the operation of the boats of different types and sizes **(Fig-1)** along with irrigation and drainage purpose in the cities & towns considering it a creation of an engineering marvel. Besides the irrigation mitigating the frequent famines used to occur in the delta of Krishna-Godavari River because of the draught, the multipurpose utilities were to provide the cheap transportation mode to the local populace for the movement of all types of cargo, passengers, livestock, and fishing with the socio-economic growth of the areas.

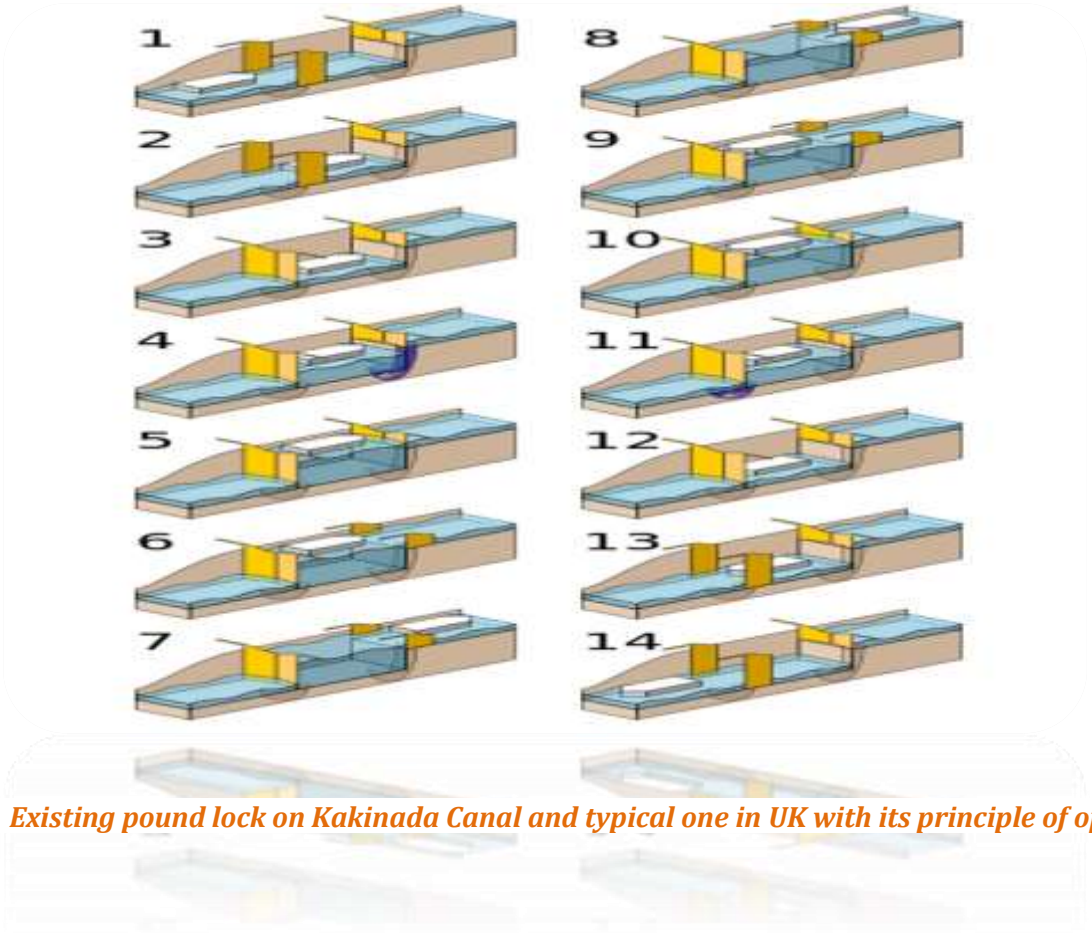
As clear from the report of Mr. A. S. Russell on ***'History of the Buckingham Canal Project (1898)'*** in erstwhile Madras Presidency, the integrated canal system facilitated the freight transportation to and from Madras Port and Kakinada Port connecting various intermediate trade centres such as Cocanada (Kakinada), Bezwada (Vijayawada), Masulipatam (Machhilipatnam), Ongole, and Nellore, etc. The freight movement slowly declined after middle of the twentieth century with the development of rail and road infrastructures coming to a total halt.

Fig-1: *Map of the integrated Buckingham and Irrigation cum Navigation canal system*

Fig-2: *Heavy traffic of boats on Buckingham canal in nineteenth century*

The Buckingham Canal had 29 navigation locks, the Kakinada - Pedaganjam canal system 19 locks. The navigation locks provided on the Buckingham canal were to regulate the water level from the sea, rivers, and backwaters at each sea mouth and the intersection of the rivers & lakes with less level difference having lock system of the same types and sizes. But the navigation locks built on the irrigation

canal system where for the smooth operation of the boats with a water level difference of maximum 30 ft (10mt). Out of six locks built on the Kakinada canal, three were with multi-chambered navigation locks known as **"Pound locks"** with operation technology. The navigation lock system installed at Padaganjam, joining Commamur canal with Buckingham canal is stated to negotiate the water level of 30ft (10 mt) known as the "**lift type of lock"** as being first of its type in India. On discontinuance of the inland navigation on these canal systems and the lack of further repair & maintenance, the structures no longer exist, becoming history.



Existing pound lock on Kakinada Canal and typical one in UK with its principle of operation

Existing damaged lock at Pedangajam and Typical lift type navigation lock installed in UK and its principle of operation (Source: Wikipedia on Anderson Lift Lock)

4. Status of the canal system

Present status

The historic Buckingham canal system, which used to be bustling with activities, is now ravaged with multiple problems like dumping grounds for the sewerage, garbage, the untreated wastes of the industries, and urban populates. There is severe encroachment of the canal land, siltation, and damages caused by natural disasters like floods, cyclones, and tsunamis **(Fig-8).** The most pathetic situation is the encroachment of MRTS (Mass Rapid Transit System) of Chennai for construction right on the canal bed, forcing IWAI to de-notify the stretch from Ennore to Sholinganallur for 32 km with discontinuity of the south and north Buckingham canal **(Fig-7).**

Fig-7 & 8 : Encroachment of Chennai Metro and polluted canal with sewerage and garbages

Construction of the several bridges and structures over the canal system without complying with the provision of the Classification of Inland waterways Regulation-2006 has destroyed the canal system. The absence of the reconstruction of the channel after the flood and tsunami and the sea mouth closures have also contributed immensely to the deterioration of the canal system.

Effort for development:

With preparing the DPR during 2010 for the entire stretch of NW-4, an attempt was made to develop the economically viable bit from Kakinada to Padaganjam irrigation canal through PPP modes. The studies were carried out during 2013 and 2016 through M/s Grant Thornton Pvt Ltd, and M/s Feedback Infra Private Ltd to develop the PPP project and engagement of concessioners. On failing to find the viability, IWAI attempted to develop the stretch through the Andhra Pradesh Govt was made during 2018, which is understood to have been dropped because of the requirement of high investment. For the Buckingham canal system, only for the minor stretch from Sholinganallur to Mahabalipuram for 65 km, the development project was prepared during 2014-15. The same was also abandoned in the absence of any commitment from the state government on the acquisition of the land for widening the narrow canals, terminals, etc. After that, no such action for these canals systems has yet been taken up.

5. Importance of these canals system in twenty-second century

The agricultural development, making the region the rice bowl of the country, along with more industries, has opened up the region's economic growth, with more human settlement & urbanization on the banks of the canal system. Under the flagship Sagarmala project of the Government of India coupled with the integrated port policy with clear vision and mission of the coastal states, both Tamil Nadu and Andhra Pradesh are planning to develop the major and minor ports and harbors with port-led infrastructures, hinterland connectivity. Several SEZ (Special Economic Zones) & industrial parks for promoting trade and commerce have also been planned and executed. The integrated canal system can also ensure convenient connectivity to all the existing ports like Chennai, Kamaraj Port at Ennore, and minor ports such as Kakinada, Krishnapatanam, Kattupally, Puducherry, and the upcoming ports at Durgarajpatnam, Gangavaram, Narasapur, Bhavanapadu, etc. There is also the proposal for developing industrial corridors and clusters such as East Coast Economic Corridor funded by ADB (Asian Development Bank), connecting four states, i.e., West Bengal, Odisha, Andhra Pradesh, and Tamil Nadu. Besides, local industrial corridors such as Visakhapatnam - Chennai Corridor and Kurnool-Bangalore may be essential for the economic growth in this region, requiring efficient transportation infrastructures. Therefore, it has been a need for financial and environmentally efficient transportation infrastructure with multi-modal facilities. The planners and investors have also recently evinced inclination & interest to revive the inland navigation and IWT wherever such facilities exist. The locations of the existing and upcoming port infrastructures on NW-4 with the

perennial waterways systems on the canal system & both the rivers with vast hinterlands may be ideal in adapting the need for the efficient & vibrant multi-modal transport infrastructures with the rail and road mode of transport because of the prospect and potential in playing a decisive role for assisting in the evacuation of the traffic most efficiently.

The integrated canal system can contribute to the socio-economic benefits of the multipurpose project besides transportation and agriculture. The same could be on:

- To provide drainage facilities in the cities like Chennai in the event of calamities like cyclones, flooding & tsunami.
- Fishing activities with stable sea mouths ensuring round the year water flow to the Buckingham canal system
- Entrainment through water parks.
- Afforestation on both sides of the banks because of the Buckingham canal system passing through sandy and arid lands.

6. Way Forward

The revival of the canal system of 750 km with modern waterways engineering and state-of-the-art infrastructures such as terminals, navigation locks, sluices gates, and AtoN, finding of an alternative route for de-notified stretch making it an economically viable and sustainable inland navigation system through a multi-purpose project for the overall socio-economic growth of the region, will be a gigantic task with challenges aplenty. This multitude of functions can be planned, developed, and executed only with political will and the active cooperation & assistance of all the concerned departments of central & state governments, local authorities, and through a special purpose vehicle. The project's development, including the cost estimate and planning for execution, obtaining the required finance and funds on internal or external sources, is essential for a comprehensive TEF, DFS, preparation of the DPR and engineering details & drawings, etc. Environmental, ecology, forest & wildlife issues, including the fragile fauna & flora of the existing wildlife sanctuaries, and compliance to CRZ regulation may be necessary. The socio & economic issues, including R &R due to land acquisition and project development, need to be studied and adopted to address the same accordingly. The indicators towards the sustainability approach may be as in **Fig-9**.

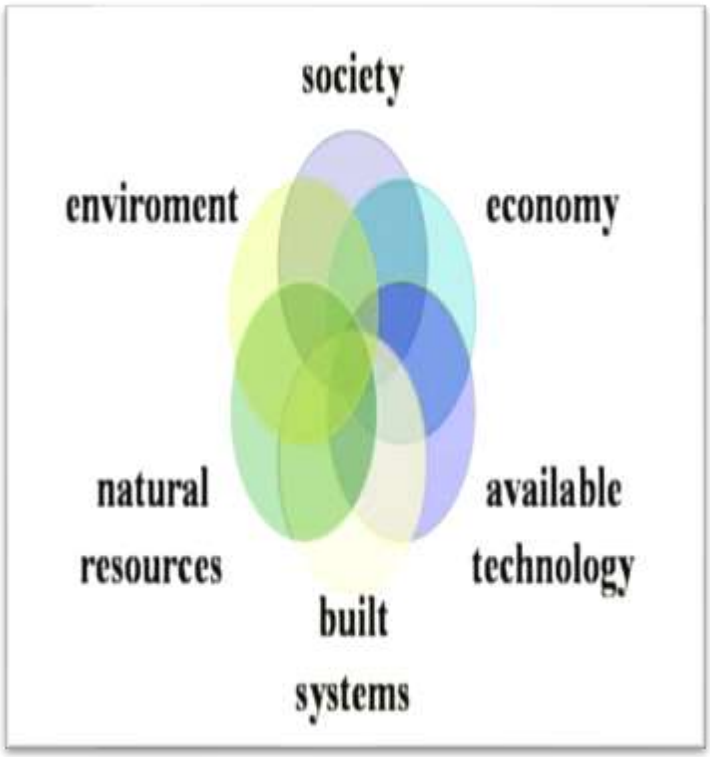


Fig-9: Indicators for studies & development of sustainable Inland navigation system

7. Conclusion

There has been a demand for alternative transportation modes because of the region's economic growth with sustainable and efficient transportation infrastructure. There is also a dire need for the transformation to a greener mode of transport to decrease carbon footprints and increase green growth to achieve zero emissions as per the recent campaign of the UN (United Nations). In the present scenario for the above goals, the importance of the unique characteristics of IWT being environment friendly & the cheapest mode of transport has been widely acknowledged. Transportation of cargo through inland waterways has recently received the renewed attention of policymakers and investors alike. Therefore, the development & revival of the British era inland navigation & IWT system through these two-canal systems assume great importance.

Acknowledgement:

My special thanks to *Mr. P. Srinivas, AHS, Mr. P. S. Rao, Director and Mr. Neeraj Khare, ACO* of *IWAI* for their assistance & cooperation by sharing the information, pictures & map etc for the article.

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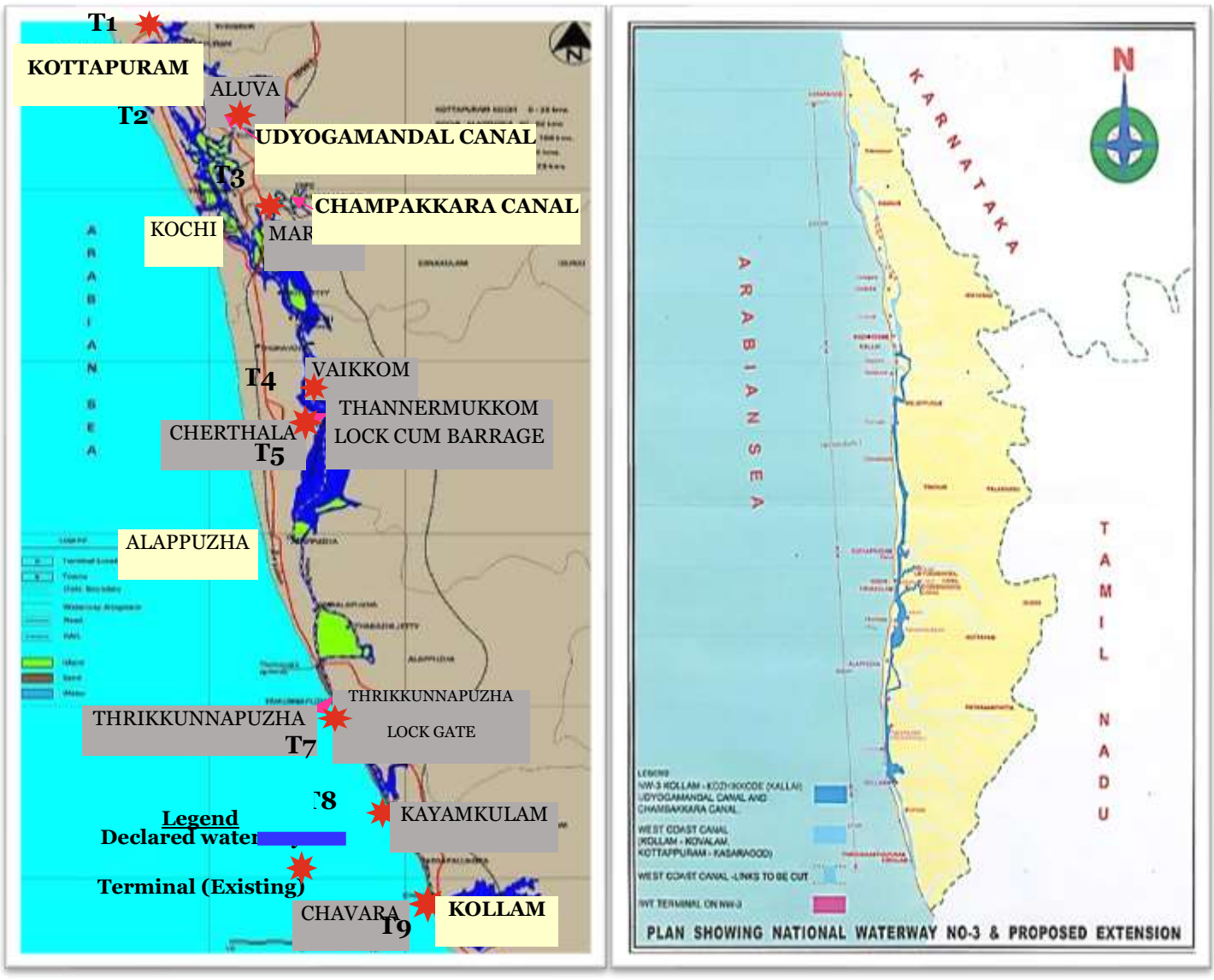
Introduction:

The West Coast Canal between Kottappuram and Kollam (168 km) together with the Udyogmandal canal (23 Km) and the Champakkara canal (14 Km) for a total length of 205 Km was declared as National Waterway (NW) during February 1993. Since then, IWAI is carrying out various works for developing to maintain a safe navigational channel of 2 m Least Available Depth (LAD), minimum width of 32 m, 24 hours navigational facilities and terminal facilities equipped with mechanical cargo handling equipment in the National Waterway. As a result, the National Waterway is now navigable in its entire length.

The National waterway No.3 has been further extended from Kottappuram to Kozhikkode (165 Km) during April 2016. The developmental works of the extended stretch of NW.3 will be carried out after finalization of DPR.



National Waterway No. 3 (Map) & Proposed Extension

Present status and major works completed:

A. Waterway:

At the time of declaration as NW, requirement of dredging in estimated 87 Km, route length was identified. This included widening of the canal in about 12 Km spread over two Districts. The total estimated capital dredging requirement has been 40 lakh Cu.m. So far, more than 39 lakh Cu.m dredging has been completed over a shoal length of 85 Km. Widening of canal has been completed in 13.10 Km. For the purpose of widening of narrow canals, IWAI acquired 21 Hectares of land in Alappuzha & Kollam Districts. Navigability has been established in the entire National Waterway through capital dredging. The widening work in the balance shoal in Edappallikkotta – Kollam stretch (1.20 Km) will be commenced shortly.

B. Terminals:

IWAI has constructed 9 IWT terminals at Kottappuram, Aluva, Kayamkulam, Vaikkom, Thanneermukkom, (Cherthala), Thrikkunnapuzha, Alappuzha, Maradu and Kollam. Out of which 3 terminals i.e., Kottappuram, Aluva & Kollam has been leased out to KSINC for utilization of the same in IWT mode.

In view of the development of International Container Transshipment Terminal (ICTT) at Vallarpadam in Cochin Port Area, there is tremendous potential for transport of containerized cargo through NW-3. To capture this potential, terminals at Willingdon and Bolgatty Islands have been constructed at a cost of Rs 16.60 Cr with RO-RO (Roll On- Roll Off) and LO-LO (Lift On- Lift Off) facilities specially for transportation of containers between ICTT Vallarpadam and Willingdon Island (3.5 Km). The Ro Ro service was in operation for the period from February 2011 to June 2017 earlier.

Now, IWAI is constructed two Ro-Ro Vessels namely **M.V Adishankara** & **M. V. CV Raman** through Cochin Shipyard Ltd., and the **Hon'ble Prime Minister** has dedicated the same to the nation on 14th February 2021. The Ro–Ro service is under operational through **KSINC** a Govt. of India undertaking.

C. Navigational Aids:

24 hours navigational aids are installed in entire route from Kottappuram to Kollam incl. Chamapakkara & Udyogmandal Canals. IWAI is maintaining these aids as a result of which transportation of all kinds of goods including hazardous goods like Liquefied Ammonia Gas, Acids & Petroleum products are taking place round the clock.

Beacon

Buoy

Cargo Movement:

Average 10 lakhs tonne of cargo moves on these waterways per year till 2017 and further it is reduced to 4.5 lakhs tonnes per annum which is much less than the waterway capacity. The expected modal shift from road to Waterway has not taken place till now. To improve the utilization of the NW.3 Government of Kerala has introduced a subsidy scheme @ Rs. 1 per tonne-km for goods transported by IWT mode with effect from 01.01.2016. As per the data, the cargo movement has been improved to 7.35 L. MT for FY 2020-21 and will improve coming years.

Cargo Movement in NW.3 during last 5 years:

Financial Year	Cargo Movement (in L. MT)		Total Cargo Movement (In L. MT)
	Champakkara Canal	Udyogmandal Canal	
2016 – 17	3.20	7.13	10.33
2017 – 18	2.83	1.90	4.73
2018 - 19	3.50	0.78	4.283
2019 – 20	4.44	1.30	5.74
2020 - 21	5.37	1.98	7.35

Milestones achieved during last 5 years:

i. The capital dredging & widening in Alappuzha-Kayamkulam stretch that was pending for long time (since 2010) was completed in October 2015 at a total expenditure of Rs. 22 crores.

ii. Three more waterways (NW-8, 9, & 59) in Kerala have been declared as National Waterways. In addition, existing NW.3 has been extended by 165 km up to Kozhikode. All w.e.f. 12.04.2016.

iii. Operation of cruise vessel in organized sector started in October 2019. It was suspended due to Covid – 19 pandemics.

iv 3 terminals i.e., Kottappuram, Aluva & Kollam has been leased out to KSWC for utilization of the same and earning income.

v. The awarded work of capital dredging in Edappallikkotta – Kollam stretch has been completed in June 2020 at a total estimated cost of Rs. 12.26 Cr.

vi. 2 Nos. Ro-Ro vessels were constructed by IWAI and the same has been dedicated to the nation by Hon'ble Prime minister of India on 14th February 2021.

Dedication ceremony of Ro - Ro Vessels during February 2021

vii. IWT Terminal land at CSEZ, Kakkanad has been leased out to M/s KMRL during March 2021 for development of passenger jetty and amenities.

KMRL Passenger Jetty & Terminal at Kakkanad

Cargo potential being pursued

i. Construction of one jetty by govt. of Kerala at KMML exclusively for unloading Hydrochloric Acid & furnace Oil is nearing completion and simultaneously trial run was conducted by KMML during last year. After completion of construction of jetty, KSINC is agreed to start the movement of Hydrochloric Acid from Travancore Cochin Chemicals at Udyogmandal and Furnace oil from Kochi.

ii. Transportation of containers between Kottayam Port and ICTT Vallarpadam, through NW-9 and NW-3 for which trial was successfully completed in March 2019.

iii. Completion of construction work of navigational lock at Thrikkunnapuzha is expected by March 2022. By the reconstruction of Thrikkunnapuzha Lock, the movement of barges having reasonable size will become possible. For transportation of cargo through small barges like 300 Tonne capacity etc. are not economically viable. After reconstruction of Thrikkunnapuzha lock, the movement of bigger size vessels having a capacity of about 500 tonne can be moved from Kochi to Kollam. This will boost transportation.

Lock wall construction under progress

iv. The Kochi water metro project, connecting the islands around the city is to be operational by December 2020. The water metro will enhance the transportation options available to commuters residing in islands around Kochi.

River tourism on NW-3

Kerala is one of the most preferred tourism destinations as on date. Tourism in Kerala cannot be seen detached from the unique house boats of the state. The tourists get an opportunity to experience the scenic beauty, village life and traditional food of Kerala during their cruise along the backwaters. The National Waterway stretching from Kottappuram to Kollam is host to nearly 90% of house boats of Kerala.

IWAI is developing and maintaining the National Waterway to certain standards of minimum width and depth. Navigational aids to facilitate day and night navigation have already been installed all along the National Waterway. Two central regulations namely; (i) Rules & Regulations for Prevention of Collision on NWs and (ii) Rules & Regulations for Safety in Navigation in NWs have already been notified and circulated among all waterway users. More importantly, the Govt. of Kerala in consultation with the IWAI has made rapid strides towards notifying its updated and unified Inland Vessels Act applicable to the whole state, aimed at achieving orderly and safe navigational practices. It is felt that a renewed commitment to create awareness on safety aspects and preservation of the natural streams from pollution combined with systematic enforcement of regulations is the most important need of the hour for sustainable water borne tourism. IWAI is committed to fulfilling its role in this regard in full cooperation with the Govt. of Kerala.

IWAI is willing to share its cargo terminals located at strategic places along the NW-3 for tourist operations also. The impetus in systematic development of navigation provided by IWAI through the National Waterway-3 will open up immense business opportunities in tourism, water sports and allied spheres.

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Introduction:

Inland Waterways Authority of India (IWAI) is under Ministry of Ports, Shipping and Waterways (Govt. of India) having its regional office at Swaraj Maidan (PWD grounds), State Guest House Road, Governorpet, Vijayawada – 520 002, Andhra Pradesh. The 1,078 Km long National Waterway (NW-4) was notified in 2008 comprises nearly 750 Km of Canals sections and 328 Km of River sections. In turn, the river section of the NW-4 comprises two major "Godavari River section (Bhadrachalam to Rajahmundry) and "Krishna River section" (Wazirabad to Vijayawada). The canals in the NW-4 are Kakinada Canal (Kakinada to Rajahmundry), Eluru Canal (Rajahmundry to Vijayawada), Commamur Canal (Vijayawada to Pedaganjam), North Buckingham Canal (Pedaganjam to Chennai), South Buckingham Canal (Chennai to Marakkanam) and Kaluvelli tank (Marakkanam to Kaluvelli).

Later on, vide the National Waterways Act 2016 (No.17 of 2016), the NW-4 has been further extended up to Nasik on the river Godavari and up to Galagali Bridge on the river Krishna taking the National Waterway-4 length up to 2,890 Kms.

IWAI, Vijayawada is a Regional office for the total stretch of **2,890 Kms** of **National Waterway No-4** in the Southern part of India covering the States of Andhra Pradesh, Telangana, Karnataka, Maharashtra, Tamilnadu and Puducherry. IWAI is primarily responsible for development, maintenance and regulation of Inland Water Transport (IWT) on the National Waterways (NW) in the country. Inland Water Transport is fast emerging as one of the viable supplementary modes for movement of passengers and goods. IWT has the potential to provide a cost efficient, economic, reliable, safe and environmentally friendly form of transport.

Inland Waterways Authority of India (IWAI) is undertaking various developmental activities of National Waterway (NW) – 4 in a phased manner. In **Phase – I** of the Project in Muktyala to Vijayawada stretch on Krishna River covering a distance of 82 Kms. The developmental works in Phase -1 stretch from Muktyala to Vijayawada of Krishna River are in progress. **Phase - 2 from** Vijayawada - Kakinada and Rajahmundry to Polavaram (233 Km), Survey has been completed and the stretch developmental activities will be carried out later by the approval of Ministry.

Hon'ble Chairperson, IWAI has visited R.O. Vijayawada where three no's floating pontoons berthed at Bhavani Island in the river Krishna in NW-4 on 25/06/2021. The Managing Director, Executive Director, Chief Engineer and other officials of Andhra Pradesh Tourism Development Corporation (APTDC), Govt. of A.P. have attended and discussed with the Chairperson, IWAI for further course of action on operation and maintenance of floating pontoons**.**

a) F.P. Krishna – I

b) F.P. Krishna – II

c) F.P. Krishna – III

The draft revised agreement for execution with APTDC, Govt. of A.P. for operation of the three nos of floating steel pontoons has already been communicated with H.Q., Noida for approval of the Competent Authority.

The monthly Cargo transportation data which includes the rivers Godavari and Krishna from the sand extraction points to stock points under Department of Mines and Geology, Govt. of A.P., Ibrahimpatnam in NW-4 and Cargo transportation at Krishnapatnam Port in Buckingham canal in NW-4.

F.Y. 2021-22	Month & Year	Cargo in MTs. (NW-4)	
		Sand transportation data	Krishnapatnam port cargo data
2nd quarter	July, 2021	----	2,09,279
	August, 2021	----	2,17,490
	September, 2021	----	2,66,311

The sand transportation data of the rivers Godavari and Krishna from May, 2021 (i.e., 14/05/2021) to September, 2021 is yet to be received from the Dept. of Mines and Geology, Govt. of A.P.

The available cargo data for every month is being uploaded in Car-D portal (online) which is the digital platform initiated by IWAI.

Land acquisition status:

Land acquisition for construction of permanent IWT terminals at three no of locations such as Muktyala (8.57 Acres), Harischandrapuram (3.63 Acres), Ibrahimpatnam (3.80 Acres) and also construction of permanent office building (0.57 Acres) is under progress with the State Govt. of Andhra Pradesh.

Participation in virtual stake holders meeting for deliberation on Draft Inland Vessels Rules, 2021:

The Inland Vessels Act, 2021 (No.24 of 2021) has been published in the Gazette of India on 11/08/2021. IWAI has got the ten draft rules prepared through Indian Register of Shipping under the IV Act, 2021.

1. The Inland Vessels (Design and Construction) Rules, 2021.
2. The Inland Vessels (Crew and Passengers Accommodation) Rules, 2021.
3. The Inland Vessels (Prevention and Containment of pollution) Rules, 2021.
4. The Inland Vessels (Safe Navigation, Communication and Signals) Rules, 2021.
5. The Inland Vessels (Life Saving Appliances) Rules, 2021.
6. The Inland Vessels (Fire Fighting Appliances) Rules, 2021.
7. The Inland Vessels (Survey and Certification) Rules 2021.
8. The Inland Vessels (Manning) Rules, 2021.
9. The Inland Vessels (Insurance, Limitation of liability, Inquiry and investigations, Obligations of service providers and service users) Rules, 2021.
10. The Inland Vessels (Registration and other technical issues) Rules, 2021.

The virtual meeting was held by IWAI, Noida with the stake holders for the deliberation / discussions on the draft Inland Vessels Rules on 13th and 14th September, 2021.

On-campus training Program on "Project and Contract Management" held from 20th to 24th September, 2021:

The officers of IWAI attended the on-campus training Programme on "Project and Contract Management" conducted by Administrative Staff College of India (ASCI), Hyderabad from 20th to 24th September, 2021.

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- Sh. Birendra Kumar Vimal, JHS transferred from Vijayawada to Sahibganj under Kolkata RO on 01-July -2021.
- Sh. Gurivelli Prasada Rao, JHS transferred from Shilchar to Vijayawada on 01-July-2021.
- Sh. Gautam Halder, JHS transferred from Kolkata to Guwahati on 01-July-2021.
- Sh. Subrata Parei, Master 2nd Class transferred from Patna to Kolkata on 01-July -2021.
- Sh. Nilratan Samanta, Master 2nd Class transferred from Patna to Kolkata on 01-July -2021.
- Sh. Ranjan Naskar, D'man Grade-ll transferred from Guwahati to Kolkata on 01-July -2021.
- Sh. G.J. Reddy, D'man Grade-ll transferred from Kolkata to Vijayawada on 01-July -2021.
- Sh. Sarvan Kumar, JHS transferred from Sahibganj to Varanasi on 01-July -2021.
- Sh. Bhanu Kumar Jain, Accounts Assistant has joined IWAI, Noida on 14-Sepetember -2021.
- Sh. Shankar, Accounts Assistant has joined IWAI, Noida on 16-Sepetember -2021.
- Sh. M. Govind, Accounts Assistant has joined IWAI, Kolkata on 15-Sepetember -2021.
- Sh. Anuj Sharma, Accounts Assistant has joined IWAI, Guwahati on 22-Sepetember -2021.
- Sh. Sandeep Sharma, Accounts Assistant has joined IWAI, Kolkata on 30-Sepetember -2021.
- Sh. Sita Ram Maurya, Director Superannuated on 31-July-2021.
- Sh. Prasant Kumar, Dy. Director Superannuated on 30-Sepetember -2021.

THEME FOR NEXT QUARTERS:

- October to December - Vessels and activities of Mech. Marine / I.V. Act.
- January to March - Project Management and NW.