

# TOLANI MARITIME INSTITUTE



Attitude - Skill - Knowledge

**THEME: SUSTAINABLE INNOVATIONS FOR ENHANCING INDUSTRIAL GROWTH**

**SUBTHEME: INLAND WATERWAYS TRANSPORTATION**

**TOPIC: DEVELOPMENT STRATEGIES FOR NATIONAL WATERWAY III**



**BY**

## **ROBIN SAXENA**

### **ABSTRACT**

Inland Waterways have played an important role in the Indian transport system since ancient times. There is a growing realization that inland water transport has to be an integral component of the overall transport system of any region/country since it is one of the most advantageous transport modes, having the least impact on environment, the lowest cost for domestic and international transport, enormous capacity reserves and the least energy consumption. The potential of inland water transport (IWT) to encourage and support increased economic and social development is enormous.

In this Paper, an attempt is made to understand Kerala's inland waterway - National Waterway 3, various issues involved and development strategies to make the waterway transportation more efficient for a sustained industrial growth.

### **KEYWORDS**

- Inland
- Waterway
- Navigation
- Development

### **INTRODUCTION**

Kerala, though small in size is affluent of water sources. 44 rivers water the land of which 41 are west flowing and 3 flow east. Apart from these 44 main rivers, their tributaries and distributaries and a countless number of streams and rivulets crisscross the land making it green and fertile and also serves as inland waterways. Aside from these rivers, Kerala is bestowed with a number of lakes and backwater lagoon. Vembanadu Lake with an area of 260 sq. km is largest in state. Shastamkotta Lake is the largest natural fresh water lake.

In February 1993, Inland waterways authority of India (IWAI) had its third national waterway (NW) in Kerala. The initial route was from Kottapuram that is the north end to the south end,

Kollam. The waterway is being operated by Central Inland Water Transport Corporation. The total route is 205 km in length divided into 3 stretches - west coast canal (Kottapuram - Kollam) 168 km, Udyogmandal canal (Kochi - Patthalam bridge) 23 km and Champakara canal (Kochi - Ambalamugal) 14 km. Otherwise total navigable route in Kerala is 1900 km and the navigable rivers constitute about 54 per cent of the waterways which leaves a wide scope for further development. There are eleven terminals on NW3, which facilitates loading, unloading, storing and inter-city cargo movements. NW3 is connecting 'Kochi Port', the business hub of the state, with main land of Kerala. The IWAI looks after the task for developing, monitoring and administering national waterways. It is the first NW in the country with **24 - hour navigation facilities** along the entire stretch. The state has a dedicated company to run transportation services across Inland waterways in the state - the Kerala Shipping and Inland Navigation Corporation (KSINC). This company operates cargo services within the state, while the State Water Transport Department (SWTD) is responsible for passenger ferry services in the state.

## FACTS & CURRENT NEWZ

Ernakulum is one city which has a very huge inland navigation potential. The city is surrounded on all sides by navigable water bodies. In fact, the easiest connection between the city Centre (Ernakulum) and parts of the old city (Mattanchery, Fort Kochi, etc.) is through inland waterways. The SWTD operates frequent boats from Fort Kochi/Mattancherry/Vypeen/W.Island and Ernakulum Main Boat Jetty. Recently, the SWTD also proposed new boat services from Thevara to Kakkanad, while will help reduce traffic on the roads by a huge margin.

Boats Specifications used for water transport by SWTD in Kerala

Boat Capacity – 50 to 150 passengers (wooden boats)

Speed of operation – 10 to 15 km per hour

Boat Size- Length: 20 to 35 mars, Width: 3 to 4.5 m, Depth: 2 m

Empty Weight – 5 to 15 tones

Crew per boat – 5 max.

Fare- ratio of 1:5 between waterways and roadways

SWTD boats usually carry around 100 passengers, and are generally made of wood or steel. A few fiber-made boats were introduced, but were discontinued on most routes following operational difficulties during adverse conditions. Recently, the department announced plans to

add about 15 Steel boats. These boats, being built by Steel Industries Limited Kerala (SILK) Kannur, are being introduced in a phased manner. Few such boats were introduced recently.

International Container Trans-shipment Terminal (ICTT) at Vallarpadam at Cochin Coast is one external factor which will create lot of future potential for IWAI in Kerala. The expectations from ICTT are to attract more international cargo movement through India and to reduce the freight cost of India's international trade. IWAI has already taken steps to utilize such opportunity. Two special terminals, which support the interchange of containers by LO-LO (Lift On, Lift Off) and RO-RO (Roll On, Roll Off) barges, are constructed on NW3, near Kochi port.

To divert a share of goods and passenger traffic to the waterway, agencies in the field are toying with the idea of linking the Cochin International Airport and the Kochi port, which are 17.2-km apart. This will be a first of its kind endeavor in the country. A few water bodies on the route will have to be widened and dredged for the project to materialize. Another proposal is to connect navigable canals in Kochi with the waterway.

## PROBLEMS

The main constraints to the expansion of Inland Water transport in the State are:

- # Lack of depth in the waterway caused by silting
- # Lack of maintenance of navigation system and bank protection
- # accelerated growth of the water hyacinth
- # Lack of modern inland craft terminals and cargo handling system.
- # Development of three part Goshree bridges (connecting islands of Bolahatty, Vypeen and Vallarpadam - impact on passenger ferry services) leading to shift in transport culture from water to land
- # Labor management
- # Lorry lobby – protesting since shifting to this mode of transportation will affect their business
- # Unsafe jetties

# Illegal fishing nets

## DEVELOPMENT STRATEGY FOR INLAND WATERWAY TRANSPORT

The inland waterway transportation in Kerala is effective and efficient in many ways but using strategical ideas may help in developing the mode further.

Let us look at European transport policy which is based on few essential principles. The principles ought to represent the external determinants of strategically planning of individual transport sectors, inland transport being one of them. These principles are:

- Establishment of balance in developing different means of transport
- Equal utilization of all transport resources
- Freedom of the market
- Harmonization of regulations and standards
- Coordinated and sustainable development

In defining the development strategy for Inland Waterway Transport, Kerala needs to follow the European transport policy, but also to take into account its own specific qualities for the adjustment process to be more successful and favorable to Kerala economic operators. It should look into following five areas for planning development.

- 1) Safety of navigation and environmental protection
- 2) Market
- 3) Infrastructure
- 4) Administrative capacity and promotion

## SAFETY OF NAVIGATION AND ENVIRONMENTAL PROTECTION

The establishment, maintenance and improvement of conditions of the safe and reliable inland navigation are a continuous mission of the government. This aspect should be analyzed separately regarding the type of cargo and the expected growth in demand of dangerous goods transport.

A new dimension was added to the safety of navigation at the level of European network of waterways by introducing the River Information Services (RIS), especially by the vessel tracing and tracking system – VTS as well as to upgrade the systems of marking and monitoring of the inland waterway navigability.

River Information Services (RIS) are modern traffic management systems enhancing a swift electronic data transfer between water and shore in advance and real time exchange of information.

The Automatic Identification System (AIS) is an automatic tracking system used on ships and by vessel traffic services (VTS) for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations, and satellites. AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.

Some of the benefits of an AIS-based virtual (Aids to Navigation) ATON are:

\*Physical inventory of buoys and other monitoring devices to not have to be purchased, deployed, and maintained in the water.

\*An AIS base station can serve an extended geographical region – often in excess of 50 square miles per station.

\*Since the AIS base station is typically deployed in a fixed location on land (or on an offshore platform), acquisition and maintenance costs are typically lower than physical ATONs.

**Kerala can adopt these safe navigation aids from Europe which are very effective and would reduce the risk of accidents to the utmost.** (No other waterway in India are using these advance navigational aids up to date)

Apart from safe navigation, environment protection is another important topic to be taken care of. Ensuring that a vessel do not release oil / lubricants / mud or faecal waters /dangerous chemicals. Port authorities can check this by looking at the oil book necessary for every vessel to carry. All the notes regarding the waste disposal in admission stations authorized by the competent body should be entered and updated regularly.

Implementation measures:

# full implementation of River Information Services and establish national control Centre for it.

# Implementation of Automatic Identification System

# Facilities for treatment of polluted water.

# to draft plans for search and rescue as well as emergency plans in cases of water pollution in order to enable joint coordination and mobilization of available nation resources.

# It is important to strengthen the administrative sector to increase efficiency of inspection in both safe navigation and environment pollution

## INFRASTRUCTURE

Inland Waterway Transport Infrastructure consists of waterways with the associated buildings, objects and equipment for safe navigation, ports and quays. Its management and development are specified by multiannual development plans.

The development concept for the infrastructure of inland waterways is targeted at the increase of **safety and efficiency of inland navigation**. Waterway technical maintenance has to be in the service of users, and that means ensuring the smooth and safe navigation for the ships with maximum draught in accordance with the class of the waterway. In practice, this means the **minimum depth of 2.5 m for 300 days per year** for the international waterway class.

Some actions that can be taken for smooth transfer of goods from one mode of water transport to the other, the integration points should necessarily have facilities for:

- \* Permanent berths
- \* Handling gears like shore cranes and gantries (for containers)
- \* Mobile cranes, forklift trucks and trailers
- \* Storage sheds warehouses and open stacking yards
- \* Sufficient lighting and power
- \* Water supply
- \* Bunker supply

This will help in development of waterway as well as add to advantage in the expansion of market and employment.

## MARKET

Internal waterways are reliable to the degree to which they meet the minimal navigation requirements necessary for the cost effectiveness of the navigation. The increase in the share of inland waterway transport in the transport services market can be achieved if this sector is integrated into the intermodal transport network. Upgrading waterways to international navigability classes and initiating development cycles may help in expansion of market. Implementation of river information system (representing the core of IT interconnection and electronic data exchange).

Other measures:

- \* modernize fleet and transport technology
- \* increase the no. of vessels to meet demand
- \* To ensure safe navigation

## ADMINISTRATIVE CAPACITY & PROMOTION

An important factor in the implementation of this document is the organization and planning.

# supervises regulations on navigation safety.

# strengthening of inspection service.

# Training of employees of inland waterways agency (use of new technologies).

# Program for research and development of the technologies and systems in inland waterway navigation

# Connecting development sectors for maritime, rail and inland waterways sector.

The government with a view to promote IWT has launched several schemes. Some of the same are listed here under:

# Vessel building subsidy of 30%

# Joint venture by IWAI

# Tax exemption similar to National Highways

# Enhancement in depreciation rate for inland vessels

# Customs duty concessions.....etc. . . .

## CONCLUSION

Inland waterway transportation is an efficient mode of transport. Its operating cost is low and so is the pollution as compared to movement by road, rail or air. A major advantage is the natural occurring of it which then has to be maintained and upgraded.

National Waterway 3, in Kerala is one such inland waterway which has a great scope in development for future benefits. State has 44 rivers, 41 flowing west and 3 flowing east. This enhances the scope of expanding the water channel (under 10th plan of planning commission expansion of NW3 is planned). Currently, 205 km is being operated but involves problems in transportation of cargo and passenger. Safety, time lag are two major reasons for not adopting this mode.

The Development Strategy stated in the paper will be effective if implemented, in sustainable industrial growth of the state as well as the nation. It covers four main areas: safety of navigation and environment pollution, infrastructure, market, administrative capacity and promotion.

If the inland waterways have to emerge as vibrant and flourishing centers for fostering large scale cargo movements and commercial use, a number of steps need to be taken. Some of these are providing periodic dredging, river training, night navigation facilities, Implementation of the Automatic Identification, a minimum depth of 2 meters, development of berthing facilities with mechanized horizontal and vertical cargo handling at reasonable cost and inter-modal linkages to provide rapid access and egress to truck traffic at terminals. Furthermore provision of storage, bunkering and repair facilities will not only enhance the commercial value of the terminals but will also provide sufficient value addition in order to make the IWT terminals an eminently economically viable option.

On successful implementation of the strategies provided this water channel can be really efficient. For a developing country where resources are scarce inland waterway transportation can definitely help in country's growth economically. Above all, IWAI is getting steady support from central government. The regional team in Kerala is quite devotional towards their responsibilities and exploring future possibilities. With the available resources, the team needs to balance required activities and employ holistic managerial practices. From all perspectives, water transport in India, especially in Kerala, has great future potential.

## ACKNOWLEDGEMENTS

I am using this opportunity to express my gratitude to everyone who supported me throughout in this technical paper. I am thankful for their aspiring guidance, invaluable constructive criticism and friendly advice.

I express my warm thanks to **Mr. Indranath Banerjee** for his full support. I would also like to thank **Mr. S D Pohekar** for the initial push without which I would have not been able to do this paper.

## REFERENCES

### RESEARCH PAPERS

Sriraman S.: ` Perspective on Inland water Transport in India`, RITES Journal, April 2002

TCS: Report on the Development of Coastal Shipping`, Tata Consultancy Services, Mumbai 2004.

### WEBSITES

- [www.wikipedia.com](http://www.wikipedia.com)
- [www.unece.org](http://www.unece.org)
- The Hindu
- The Times Of India
- [ec.europe.eu](http://ec.europe.eu)
- [www.inlandnavigation.eu](http://www.inlandnavigation.eu)
- [India.gov.in](http://India.gov.in)
- [www.vespermarine.com](http://www.vespermarine.com)
- [www.keralashipping.com](http://www.keralashipping.com)
- [www.cnet.com](http://www.cnet.com)

- [www.slideshare.net](http://www.slideshare.net)
- [www.business.co.in](http://www.business.co.in)