

COASTAL AND INLAND WATER TRANSPORTATION

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ABSTRACT

INLAND & COASTAL TRANSPORTATION

Here this is an Abstract about the Fuel-Efficient , envorinmrntalFriendly,alternative to the road and rail transportation.

That is **Coastal And Inland Water Transportation**

This could be integrated to accommodate hinterland, coastal and international traffic. The two waterborne modes, viz. Coastal Shipping and IWT are similar in many ways, in terms of **energy efficiency, inter-modalism, infrastructure requirements** etc. Both modes are by nature inter-modal.

Fuel consumption by this mode is effectively very less when compared to other modes.

Coastal & Inland WT can handle large parcel sizes easily at very low cost.

Emissions of carbon dioxide, carbon monoxide, hydrocarbon etc with the exception of SO₂ are very less.

MAIN TEXT

Transportation through waterways both in Coastal or Inland has been universally accepted as the fuel efficient, environment friendly and economical than other two surface modes of transport i.e. rail and road. It is because of this inherent characteristic and advantages, both coastal shipping and Inland Water Transport have been playing vital role in the economy of any country where such facility exists. With this background most of the developed countries, have exploited this naturally gifted mode of transport to its full extent so as to derive the optimum benefit. Moreover, this mode of transport does not require huge investment as compared to rail and road transport for their development, maintenance and operation.

IWT and coastal shipping operations could be integrated to accommodate hinterland, coastal and international traffic. The two waterborne modes, viz. Coastal Shipping and IWT are similar in many ways, in terms of **energy efficiency, inter-modalism, infrastructure requirements** etc.

Both modes are by nature inter-modal.

The success of the IWT being an economical and viable mode of transport depends on the four basic components i.e.

- i) safe navigable channel;
- ii) Navigational aids for day and night navigation;
- iii) Terminal facilities with requisite cargo handling equipment; and
- iv) Vessels .

Economical Mode Of Transportation:-

Fuel Consumption: Fuel consumption by CS & IWT at 4.83 g m/tkm is just 15% of the consumption by road and 54% of that by rail.

Cost of Carriage: Coastal & Inland WT can handle large parcel sizes easily. Whereas rail and road transport because of their limited capacity and infrastructure cannot handle large quantities of coal, iron ore etc. The cost of CS& IWT as a percentage of road and rail transport is much lower.

Effective Environmental Friendly:-

Emissions: Emissions of carbon dioxide, carbon monoxide, hydrocarbon etc with the exception of SO₂ from coastal shipping & IWT are much lower than that in rail and road.

This is Social Sustainable mode of Transportation. Because of its effective competition with Rail n Road transportation and Eco-Friendly nature .

Inland Waterway Transport (IWT) is a safe, efficient and environmentally-friendly transport mode.

**Key activities For Effective Costal & Inland Transportation:-*

1. **Waterways Improvements**
2. **River & coastline Transport Operations**
3. **Inland & Minor sea Ports Development**
4. **Transport Connections**
5. **CS & IWT Promotions**
6. **Logistics Chain Development.**

Waterways Improvements:-

a) Ship Locks:- Locks are used to make a river more easily navigable, or to allow a canals to take a reasonably direct line across land that is not level.

Use of locks in navigations:-

When a stretch of river is made navigable a lock is required to bypass an obstruction such as a rapid, dam, or mill weir— because of the change in river level across the obstacle.

In large scale river navigation improvements, weirs and locks are used together. A weir will increase the depth of a shallow stretch, and the required lock will either be built in a gap in the weir, or at the downstream end of an artificial *cut* which bypasses the weir and perhaps a shallow stretch of river below it. A river improved by these means is often called a Waterway or River Navigation .

The lowest lock on a navigable river separates the tidal and non-tidal stretches. Sometimes a river is made entirely non-tidal by constructing a *sea lock* directly into the estuary.

In more advanced river navigations, more locks are required.

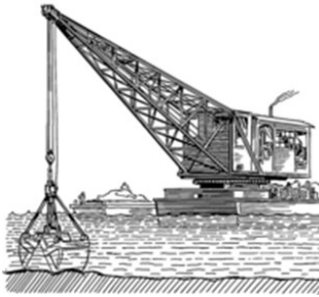
- Where a longer cut bypasses a circuitous stretch of river, the upstream end of the cut will often be protected by a *flood lock*.
- The longer the cut, the greater the difference in river level between start and end of the cut, so that a very long cut will need additional locks along its length. At this point, the cut is, in effect, a *canal*.

b)Channelisation:-The irregular flow of rivers throughout their course forms one of the main difficulties in devising works for increasing the navigable capabilities of rivers.Improvements can be divided into those that are aimed at improving the flow of the river, particularly in flood conditions, and those that aim to hold back the flow, primarily for navigation purposes.TheChannelisation provides a regular waterways for the proper transportation.

c)Navigational Aids:-Besides the navigation aids for day navigation through suitable channel marking and signals, emphasis has been given to provide the night navigational aids with modern and reliable system in all three national waterways. The solar operated lights fitted on the FRP buoys should be installed and operated successfully in all Water ways. However, at present in the entire stretch of these waterways, the lights fitted on the country crafts have already been provided. In addition to the above, the shore beacons at suitable interval have been planned to be provided in these waterways. The navigation through DGPS (Differential Global Positioning System) have already been introduced in some wateryways successfully.

River Transport Operations:-

a) Dredging:- Dredging is an activity essential to navigation,



maintaining the ecology and biodiversity of waterways and adjacent land, the management of flood risk and drainage activity. Dredging is an excavation activity or operation usually carried out at least partly underwater, in shallow seas or freshwater areas with the purpose of gathering up bottom sediments and disposing of them at a different location. This technique is often used to keep waterways navigable.

A **dredge** is a device for scraping or sucking the seabed, used for dredging. A **dredger** is a ship or boat equipped with a dredge. The terms are sometimes interchanged.

b) Navigational Authorities:- A **navigation authority** is a company or statutory body which is concerned with the management of a navigable canal or river.

Rights of a navigation authority

Whilst the rights of individual authorities vary, a navigation authority will typically have a right to:

- Implement a registration or licencing scheme for boats on waterways under their control
- Levy a licence fee, tolls or both on vessels using the waterway
- Lay down rules regarding the manner in which vessels shall be navigated.

Responsibilities of a navigation authority

Again, responsibilities vary, but will usually include:

- Maintaining locks and other structures.
- Dredging the channel.
- Flood control.
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Inland & Minor ports Development:-

a)General Cargo Ports:-The cargo usually transported through Coastal shipping i.e. coal, ore, steel, fertilizers, food grains, cement. General goods etc can be the potential cargo for coastal-cum-inland vessel. However ,traffic for such cargo for different sectors may be different and for an assessment in this regard it needs a comprehensive study. So the development of general cargo Ports should be done perfectly with the better cargo handling equipments in the specialized berths is needed.

b)Specialized terminals:-In consideration to the unique characteristic of some waterways being subjected to increase of water level during monsoon period and considerable fall during lean season associated with the shifting of the channel, the terminals of both floating and fixed types are being provided. While floating terminals have been constructed and maintained at a number of locations in both waterways fixed one with RCC for catering to the vessels of different size, type and their operation throughout the year have been provided only at few places. The cargo handling equipment have been provided and there is also scope for the operators/shipper to have their own equipment.

c)Private Sector:-The objective of developing of inland water transport as an important mode of transport can not be achieved only through the budgetary support to the public sector. The private sector has also a crucial role to play in the development of this sector. It was envisaged that private sector should actively involved in

- a. Ownership and operations of cargo vessels and for passenger movement.
- b. Fairway development and maintenance.
- c. Construction and operation of terminals and Ports.
- d. Provision of pilotage facilities.
- e. Setting up and running of training institutions.

It was expected that that private sector participation in the development of infrastructure and services in this sector would result in reducing gestation period for setting up new facilities and bring in the new technologies and improved management techniques.

Transport Connections:-

a)Road and rail:-Along with the development of minor ports, it is vital to provide for connectivity of the minor ports with the road and rail network. Some minor port had suffering because of the lack of connectivity to the rail and road. To get out of that specific obstacle certain programs would provide for connectivity to the minor ports; higher priority and weightage needs to be assigned to this.

b)Co-operation between interest groupings

Co-operation is becoming more and more important. While not taking the place of competition, it is becoming increasingly necessary for being able to compete. Three particular areas of co-operation are important: co-operation between politics and trade and industry, and I shall come back to that later; co-operation between inland ports and seaports; and co-operation between the

different players along logistics chains (modes of transport, freight forwarders, shipping agents, logistics integrators).

b)SeaPorts:-Efficient shipping operations, whether international or coastal, depend principally on efficiencies in the ports. Coastal shipping, like international shipping, requires competent bulk cargo handling facilities and speedy berthing facilities; in addition coastal shipping requires concessional port tariff. While major ports have the crucial handling facilities, they do not accord the necessary consequence to coastal vessels due to their pre-occupation with ocean going vessels as they generate more income. In the same way the connectivity between the inland ports and minor - major sea ports should be developed for the active performance of IWT.

IWT & CS Promotions:-

Jobs & Skills:- The water transportation sector provides attractive employment opportunities with its simultaneous development in its infrastructure. Manpower shortage has plagued the shipping industry since long. A substantial rise in global trade is expected in the coming years. So there are many scopes for the tremendous increase in the employment generation.

Advantages of the Coastal and Inland Water Transportation

- Ø Tremendous cost-advantages to Indian trade
- Ø Immense benefits of energy savings to the country's economy,
- Ø Boon of a cleaner and greener environment offered to society at large,
- Ø Boost transshipment at Indian ports
- Ø Enhance competitive edge of Indian exports
- Ø Increase port's potential to develop as hub-ports
- Ø Increase revenues and opportunities for generating both direct and in-direct employment.
- Ø Catalyze the development of an efficient and integrated transport and logistics system.

Looking at the inherent advantages in the coastal shipping sector, the urgent requirement is to promote the growth of the sector.

CONCLUSION :-There is potential for integration of coastal shipping with Inland water Transport and thereby to enhance its share in the total transport system of the country. The seamless integration of the coastal shipping and inland water transport can be effective only when the vessels can operate in both the sectors economically. The availability of inadequate water depth in the inland waterways may have certain disadvantages for design and

construction for an optimum designed vessel. But it is expected that with further development of the water ways and relaxation in the requirement of coastal shipping for operation in the coastal waterways along with same gesture by the classification society considering limited operation of the vessel in coastal waterways maintaining a balance with respect to safety and economy.

**** The combination of Infrastructure and System , Policy & Institutional is necessary to Develop the water Transportation.***

***Attractive Employment Generation in Upcoming Years**

***Coastal & Inland Transportation can play a active role in countries
Economy.**