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USE OF WATER TRANSPORT IN INDIA (ECONOMIC BENEFICIAL ON STAKE OF ENVIRONMENT)

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ABSTRACT

Economic growth is not a sole motive of human life. Physical growth on stake of environment is not acceptable. Presently India is using a very less part of its natural waterways for transportation of goods and passengers. Increasing use of rivers, canals etc for waterways transportation may economical beneficial but it can increase the problem of pollution in India. Currently India's six cities are including in top ten polluted cities in world it is also true for our rivers, how can we assume the risk of wrose the situation by increasing use of waterways transportation in India. Present article is an attempt to enlighten the various economical and environmental issues assosiated with promotion of waterways transportation in India.

Key Words Waterways transport, Waterways Infrastructure, Economic benefits, Pollution

Introduction

Facility or service of carring persons, goods etc to ane place to another place known as transport facility.Transportation has a significant role in economic growth and development. In morden age transport facility serves in every field of life.Raw material is transported to factories, Finished good is transported to market, workers are transported

between home to their workplace. It is a basic facility which help in moments of human and other things. Various mediam of transportation is used in present time like roadways, railways, airways, waterways etc. Waterways is a transportation system which use water resources like rivers, cannals, sea etc for transportation. India has 9th rank on the basis of total available waterways in world. The top 10 countries on the basis of total available waterways (Km) are as under.

Top ten countries by total waterways length in world

Rank	Country	Total available Waterways (Km)
1.	China	110000
2.	Russia	102000
3.	Brazil	50000
4.	U.S.A	41009
5.	Indonesia.	21579
6.	Columbia	18000
7.	Vietnam	17702
8.	Congo	15000
9.	India	14500
10.	Burma	12800

(Source – The World Factbook)

Waterways Infrastructure in India

National Waterway 1

Allahabad–Haldia stretch of the Ganges–Bhagirathi–Hooghly river system.

Estd = October 1986

Length = 1,620 km

Cargo Movement = 4 million tonnes

National Waterway 2

Sadiya — Dhubri stretch of Brahmaputra river

Estd in September 1988

Length = 891 km

Cargo Movement = 2 million tones

National Waterway 3

Kottapuram-Kollam stretch of the West Coast Canal, Champakara Canal and Udyogmandal Canal.

Estd in February 1993

Length = 205 km

Cargo Movement = 1 million tonne

National Waterway 4

Kakinada–Pondicherry stretch of canals and the Kaluvelly Tank, Bhadrachalam – Rajahmundry stretch of River Godavari and Wazirabad – Vijayawada stretch of River Krishna

Estd in November 2008

Length = 1,095 km

National Waterway 5

Talcher–Dhamra stretch of the Brahmani River, the Geonkhali - Charbatia stretch of the East Coast Canal, the Charbatia–Dhamra stretch of Matai river and the Mangalgadi - Paradip stretch of the Mahanadi River Delta

Established in November 2008

Length = 623 km

National Waterway 6

In Assam, Lakhipur to Bhanga of river Barak

Estd in 2016

Length = 121 km

Total length of national waterways is 4555 Km in India. It is just one third part of total available capacity of India. It is devided in six national waterways.

Merits of inland waterway transport

Heavy capacity – We can carry the bulk quantities with the help of waterways. It has heavy capacity of carrting goods over long distances.

Low cost – River cannals are he natural ways, there is no need to build like in case of roads and rail lines. The cost of construction of cannals and maintanence of rivers and cannals is much lower. Its main reason is lower friction than rpadways and railways. We can say that it is cheaper mode of transportation after ppeline transportation.

Low maintenance cost - Maintanence cost or variable cost is lower in case of waterways transportatio than the road and rail transportation. Water current is the source of self maintanence of waterways.

Flexible service – Inland waterways is easily adustable as per requirment of passangers, Weight of goods etc. It provide an edge to this system over rail and road transportation.

Useful durring natural calamities- At the time of natural calamities as flood, rains, earthquake etc road and rail transportation is disturbed. In this situatuation waterways transportation is also operational. At the time of natural disasters relief operations is easily done with the help of waterways.

Demerits of inland waterway transport

Slow Speed – One of the main limitation of waterways is slow speed. Prsent world is the world of speed. Bullet trains are runs with 500 kmph. In comparision of bullet trains inland waterways transport has a speed of 20 to 40 kmph. It is much less in present world.

Heavily affected by seasonal character – Inland waterways transport system is heavily affected by seasons. Due to the low level of water I summer, rivers can not usable throughout the year. It is an important limitation in making it a main source of transportation.

Increase in pollution in rivers –As per "central pollution control board" more than half the rivers in India are polluted its main reasons are increasing population, industrial production, incresing number of motar vehicles etc. In this situation inland waterways transportation can worse the situation in India.

Disturbence in life of fishes and other lives – Increase use of waterways transportation can disturbe the life of fishes and other lives depends upon the rivers, It is also not good for hygine and freshness of rivers. Economic groth by using the waterways transportation is worthless if it vanish our environment.

Main issue assosiated with promotion of waterways in India – Polluion is the main issue assosiated with increasing use of waterways in india. Various cities of India are suffering by various type of pollution. It may clear by following table.

Top ten polluted cities in world (Year 2015)

Rank	City	Country	Pollution (µg/m3 of PM 2.5)
1.	Delhi	India	153
2.	Patna	India	149
3.	Gwalior	India	144
4.	Raipur	India	134
5.	Karachi	Pakistan	117
6.	Peshawar	Pakistan	111
7.	Rawalpindi	Pakistan	107
8.	Khorramabad	Iran	102

9.	Ahmedabad	India	100
10.	Lucknow	India	96

(Source – http://www.businessinsider.in)

Above table is showing that 6 cities are including in top 10 polluted cities of the world. It is also showing the level of problem in India. The most harmful pollutant to human health is called as PM 2.5, short for particle matter that's less than 2.5 microns in diameter. It's found in soot, smoke, and dust and lodges in the lungs causing long-term health problems like asthma and chronic lung disease. PM 2.5 starts to become a health problem when there is more than 35.5 micrograms of PM 2.5 per cubic meter (written like 35.5 μg/m3) of air, according to the Environmental Protection Agency. But the World Health Organizations recommends that PM 2.5 shouldn't even exceed 10μg/m3.

Main causes of pollution in India

1. Fossil Fuels - Use of fossil fuels like coal, petroleum and other factory combustibles is one the major cause of air pollution. Pollution emitting from vehicles including trucks, jeeps, cars, trains, airplanes cause immense amount of pollution. We are depending on them to fulfill our daily basic needs of transportation. But, there overuse is harmful for our environment as dangerous gases are polluting the environment. Carbon Monoxide caused by improper or incomplete combustion and generally emitted from vehicles is another major pollutant along with Nitrogen Oxides that is produced from both natural and manmade processes.

2. Agricultural activities - Ammonia is a very common by product from agriculture related activities and is one of the most hazardous gases in the atmosphere. Use of insecticides, pesticides and fertilizers in agricultural activities has grown quite a lot. They emit harmful chemicals into the air and can cause pollution.

3. Exhaust from factories and industries - Manufacturing industries release large amount of carbon monoxide, hydrocarbons, organic compounds, and chemicals into the air thereby depleting the quality of air. Manufacturing industries can be found at every corner of the

earth and there is no area that has not been affected by it. Petroleum refineries also release hydrocarbons and various other chemicals that pollute the air, rivers, & soil and also cause land pollution.

4. Mining operations - Mining is a process wherein minerals below the earth are extracted using large equipments. During the process dust and chemicals are released in the air causing massive air pollution. This is one of the reasons which is responsible for the deteriorating health conditions of workers and nearby residents.

Conclusion

Pollution is the key issue assosiated with the development of waterways transportation in India. India is suffering with high pollution, its 6 cities are including in top 10 polluted cities of the world. It is showing the level of pollution in India. Presently it is not the time of increasing the use of inland waterways in India as India is suffering with the high level of pollution in rivers also, but limited use of rivers for promotion of tourism and at the time of natural disasters relief operations with the help of waterways may permissable. We hope for a situation of full control on pollution in India where we may think about the increase use of waterways as an important medium of transportation in India. Use of waterways may economic beneficial but only physical growth on stake of our environment is not appreciable.

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