Applied Science and Biotechnology Journal for Advanced Research e-ISSN: 2583-553X
Peer Reviewed Journal
Volume-1, Issue-2 (September 2022), Page: 23-25 https://doi.org/10.31033/abjar.1.2.5

Critical River Transport for Agra's Economic Revival: Problems and Solutions

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ABSTRACT
It's safe to say that everywhere you look, you can see evidence of how important transportation has been to the growth and development of human civilization. It is true that conquests and expansions have been accomplished both by sea and by river travel inland. When possible, travelling by boat was a faster option than driving. The Yamuna riverfront in Agra quickly rose to prominence as the Mughal nobility's preferred location for living close to the Fort. Even into the first quarter of the twentieth century, the Yamuna River was a vital transportation artery. The paper establishes the significance of the Yamuna to the city of Agra and emphasises the importance of water transport as a vital mode of freight movement in the early modern period. Within the scope of this article are the many municipalities that played pivotal roles in facilitating riverine commerce to and from Agra. The present research also tracks the development of river transport in Agra, recording the quantity and importance of travel and trade along the riverine route during its heyday in the early modern period. The collapse of river transport in the region with the advent of the railroad system is also discussed. Finally, the paper makes an effort to present potential future obstacles to a renaissance of river transport in this region and provides some recommendations to revitalise the river transport system in Agra.

Keywords: transport, economic, solution, river, pollution

I. INTRODUCTION

It is clear that before the second half of the nineteenth century, a time marked by the introduction and establishment of the railways in India, Agra was a significant riverine destination for inland trade and public transport, as it served as the essential terminal point for boats of larger size navigating up the Yamuna River. Despite this, Yamuna traffic persisted until at least the first quarter of the twentieth century. However, it gradually decreased after the massive expansion of the railroad network, with the help of the river channel shrinking as water from the river was diverted to newly built canals.

II. MAPPING AGRA'S WATERS AFTER THE CENTER OF THE 19th CENTURY

At the turn of the last century, there were about 100 boats in operation. This included 65 boats in Agra and 28 boats in Pinahat (Agra division), with roughly half of these boats used for long-distance trade and transport and the other half for bridge of boats and at the ferries. In addition, the Yamuna was the primary water supply for the Delhi–Agra canal, which opened in 1874 A.D.3. The importance and value of water transport to the government at the time are brought home in a report written by the Executive Engineer for the year 1877–78, who was in charge of navigation. He made it plain that the government saw increasing revenue from river traffic as a top priority and that private boats should be barred from the canal.4 This reflects the prevailing sentiment of the time, which still favoured the incoming revenue from the river traffic.

Currently, 228 boats pass through the pontoon bridge at Kalpi, which is located about 140 miles below Agra.5 Of these, 120 are travelling upstream.6 On average, boats travelling upstream carry a weight of about 400 maunds (a unit of weight equivalent to about 37 kilograms), while boats travelling downstream carry about 700 maunds. Freight on the Yamuna north of Kalpi (including the Agra, Mathura, and Etawah districts in addition to Delhi) amounted to 1,23,600 maunds per year, of which 75,000 maunds were transported downriver. Because of the higher prices, the Delhi Canal did not see a lot of traffic despite linking Mathura and Agra.

The Agra region of Mathura contributed 29,017 maunds, and the Delhi region contributed 3,765 maunds. The Bewar and Fatehgarh branches of the lower Ganges canal, which had been under construction since 1880-81, were opened for inland navigation in the district of Farukhhabad, bringing raw cotton, jute, drugs, and chemicals to the Agra division from other parts of the country.

The riverine routes did not immediately lose their significance, even after the railway networks were established. They were so vital to commerce and transportation that they kept running even during the wettest parts of the year, pausing only

when the rivers were too high to navigate. The volume of river-borne trade between the Agra division and Calcutta (now Kolkata) was approximately 1,10,444 maunds in imports and 21,901 maunds in exports in 1914–15 A.D. 10. In 1905 A.D., there were approximately fifty boats travelling upstream and downstream between Agra and Delhi. The Etawah district canal route was plied by medium-sized boats measuring 75 feet long and 18 feet wide, transporting agricultural stock weighing 400 to 1000 maunds.11 the frequency of navigation decreased significantly during the rainy season, remaining highest from September to January. In 1917–18 A.D., the United Provinces of Agra and Oudh saw a decrease in the value of their river-borne trade imports, with the total amounting to 79,790 maunds and their exports totaling 33,152 maunds.

II. TRANSPORT BY RAIL AND THE DECLINE OF RIVER NAVIGATION

Due to its strategic importance, the city of Agra has historically had main roadways leading to it from all directions. In modern times, Agra remains a rail transportation hub because major lines connecting the north, south, and east of the country were constructed in and around the area. Over time, as the rail network expanded, the importance of other commercial and transportation modalities waned. Additionally, the river route's importance in commerce and transportation diminished. Traffic on the Agra Canal was stopped in 1904 because there weren't enough people using it to justify its upkeep and the canal's operating costs were too costly. At the same time that freight traffic was being redirected to the faster and cheaper mode of transport, the rail network was rapidly expanding. Products that had previously been transported over the riverine route are now being distributed in new ways and to new regions. Rajputana and central India received sugar and tobacco, while the Agra district received salt, cotton, ghee, and stones from western quarries.

A market for perishable and agricultural goods emerged as a result of the convenience and efficiency of rail transit. So, the river transportation system, which was relatively cheap, was quickly replaced by the railways, which were faster and could carry a lot more people.

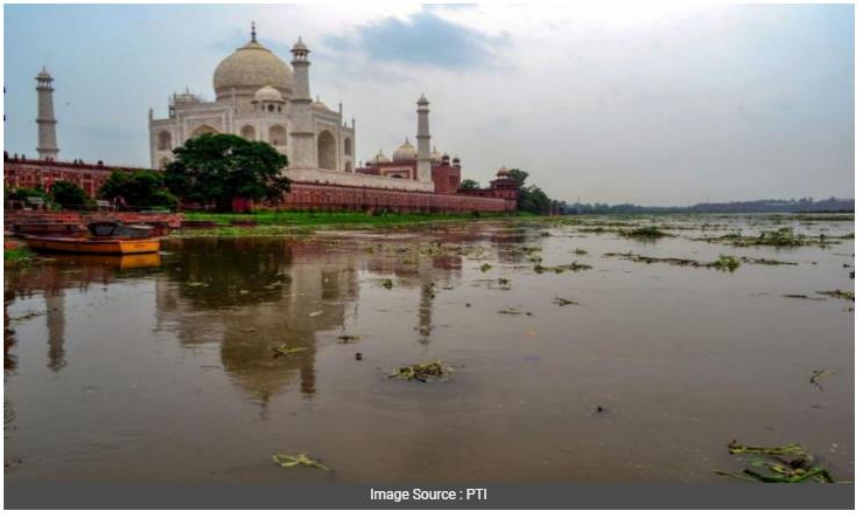
III. REVIVAL OF THE YAMUNA: URGENCY, AND ACTIVIST PLANS

Due to a rise in population and the expansion of industry, both of which rely heavily on river water, as well as the need for more water for agriculture, the river is under a lot of strain these days. The river between Delhi and Agra is only a trickle for most of its length, except during a typical monsoon. The size of the river shrinks the most in the section downstream from the Gokul dam.

The fast growth of industries along the river's banks as a result of the convenience of rail transportation has also contributed to its pollution through the release of harmful effluents. The once-famous River Yamuna has been drastically altered and is no longer recognisably like its former self.

The river is not only a crucial lifeline for the local economy but also a historic transportation corridor. In addition, its cultural and historical significance cannot be denied. The river's economic and tourism potential, as well as its prospective role as a repository of species, make its revitalization crucial.

Figure 1: Dry Yamuna remains a threat to Mughal monuments

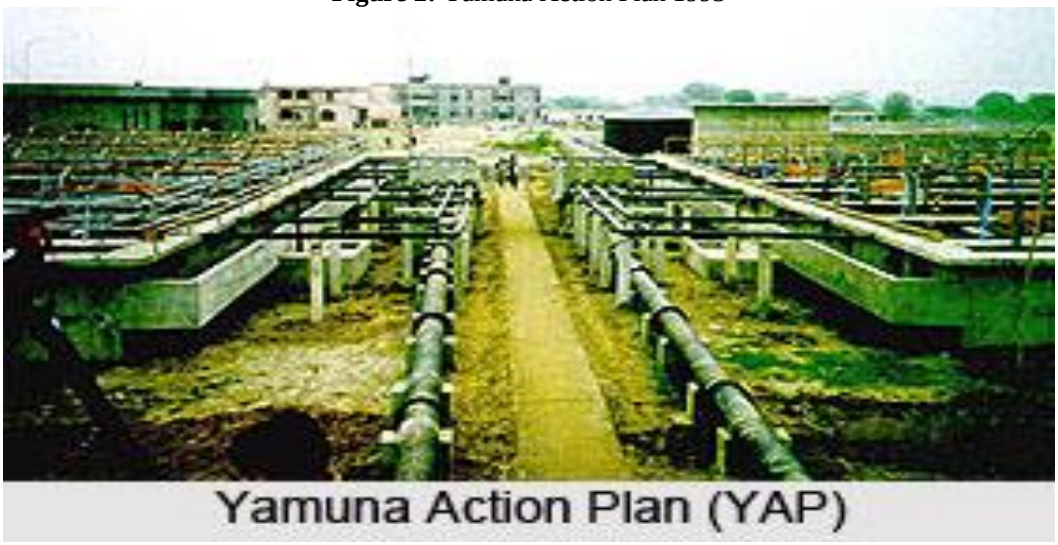


Source: PTI

The Indian government has made some positive moves in this area. The Yamuna has been formally designated as National Waterway 11014 in the states of Haryana, Delhi, and Uttar Pradesh, bringing back a natural, environmentally friendly, and cost-effective mode of transportation to the Agra region after many years of neglect. It will also go a long way toward lessening the dreadful effects of pollution, and it will create jobs and a new labour force. The plan would prioritise Yamuna water level maintenance, which is crucial for preserving the Agra region's biological resources. As a knock-on effect, the strategy of restoring water transport in the region would greatly aid the government's programmes of developing the Yamuna riverside along the heritage sites of the area, an integral component of the original design of these. An increase in river-based tourism would benefit not just the cities of Agra and Mathura but also the surrounding areas rich in historical sites.

The Government of India launched the Yamuna Action Plan (YAP) 16 in 1993 to reduce pollution in the Yamuna River; this plan is currently being executed in stages to ensure the river's long-term viability. To increase the Yamuna's potential as a tourist destination, the Inland Waterways Authority of India has devised the novel "Water Taxi Project"17.

Figure 2: Yamuna Action Plan 1993



Source: https://www.indianetzone.com/32/yamuna_action_plan_yap_indian_river.html

V. CONCLUSION

While the government has conceptualised a number of ideas for the river's revitalization, launching river traffic over its full course would necessitate keeping the river at its cleanest and highest level throughout the year—a daunting undertaking under the current circumstances. Controls on, for example, how much river water can be used by factories are examples of such measures. Further, large-scale rainwater harvesting needs to be adopted to sustain groundwater levels close to the river. Also, there needs to be stringent regulation of the discharge of untreated sewage and industrial effluents into the river. For any reforms to be truly effective, a community-based strategy is also essential. These measures will help the Yamuna regain its former status as a thriving commercial and transportation hub, as it did in India's early modern era.

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