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Reinstating the Riparian Corridors for boosting the Urban Economics:A Case of Moradabad (U.P.)

Shishir Verma[1] and Dr. Mohit Kumar Agarwal[2]
MURP 2nd yr, School of Architecture and Planning, Babu Banarasi Das University, Lucknow, U.P., India[1]
Professor & Dean, School of Architecture and Planning, Babu Banarasi Das University, Lucknow, U.P., India[2]

Abstract: *The case for reinstalling the riparian corridors in Moradabad, Uttar Pradesh, as a method of bolstering the regional urban economy. Riparian corridors are strips of land along the banks of rivers or streams that are essential for maintaining ecological balance, preserving biodiversity, and sustaining economic activity. This brief outlines the potential advantages of repairing these corridors in Moradabad and includes implementation recommendations for such actions. Moradabad, a fast expanding metropolitan area, is confronted with a number of environmental difficulties, such as the degeneration of riparian corridors. Due to unplanned development, industrial pollution, and inefficient waste management procedures, these corridors have been encroached upon and deteriorated. By restoring these corridors, the region will be able to protect and increase biodiversity, which can have significant ecological and economic effects. Restoring riparian corridors can generate job possibilities through activities such as ecological restoration and the creation of nature-based companies. These economic activity can contribute to the regional expansion and prosperity.*

Keywords: Riparian corridors, Urban economics, Moradabad, Restoration, Revitalization, Urban development, River conservation

I. INTRODUCTION

Riparian corridors are strips of land along the banks of rivers or streams that are essential for maintaining ecological balance, preserving biodiversity, and sustaining economic activity. Moradabad, a fast expanding metropolitan area, is confronted with a number of environmental difficulties, such as the degeneration of riparian corridors. These corridors have deteriorated as a result of uncontrolled development, industrial pollution from Brass city, and insufficient waste water management procedures. This deterioration has led to the loss of natural habitat, a decline in water quality, and less prospects for economic growth. Rehabilitating riparian corridors will aid in the restoration and protection of the natural environment, hence enhancing water quality. By restoring these corridors, the region will be able to protect and increase biodiversity, which can have significant ecological and economic effects. These economic activity can contribute to the regional expansion and prosperity.

1.1 Methodology

Introduction & Significance of the Topic, Literature Study : riparian corridor deterioration, urban water management, and economic implications Case Studies : riverain revitalization Models, Urban Water Management Best PracticesAssessment of the existing condition and extent of degradation of riparian corridors in MoradabadPropose a set of recommendations and strategies for restoring and managing riparian corridors with urban water systems in the Indian context.

II. LITERATURE REVIEW

Riparian corridors, the strips of land along rivers, streams, and water bodies, hold significant importance due to their ecological, social, and economic benefits. The following are key reasons that highlight the importance of riparian corridors:

Biodiversity and Habitat Conservation: Riparian corridors serve as vital habitats for a diverse range of plant and animal species. The unique combination of water, vegetation, and landforms within these corridors supports a rich biodiversity,

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including numerous rare and endangered species. The preservation and restoration of riparian corridors are crucial for conserving ecosystem diversity and ensuring the survival of many species.

Economic Benefits: Riparian corridors can have direct and indirect economic benefits. They attract tourists, nature enthusiasts, and outdoor recreationists, contributing to the local economy through tourism revenue, job creation, and the development of related industries. Riparian corridors also enhance property values, especially for properties located near water bodies, thereby providing economic incentives for preserving and restoring these areas.

Urban water management refers to the planning, development, and implementation of strategies and practices aimed at efficiently managing water resources within urban areas. It involves various aspects, including water supply, wastewater management, stormwater management, and water conservation. Effective urban water management is crucial for ensuring sustainable and resilient water systems in cities. The following are key components and approaches involved in urban water management

Overall, the preservation and restoration of riparian corridors are essential for maintaining ecological balance, ensuring water quality, managing water resources, mitigating climate change impacts, supporting biodiversity, and providing recreational and economic opportunities. Recognizing their importance is crucial for implementing effective conservation and restoration strategies, integrated land-use planning, and sustainable water management practices.

III. CASE STUDIES

There are several successful examples from other cities where efforts to enhance water resources have had positive impacts on the economy and livelihoods. Here are a few notable examples:

Seoul Cheonggyecheon Stream in South Korea:

Figure 1: Seoul Cheonggyecheon Stream in South Korea

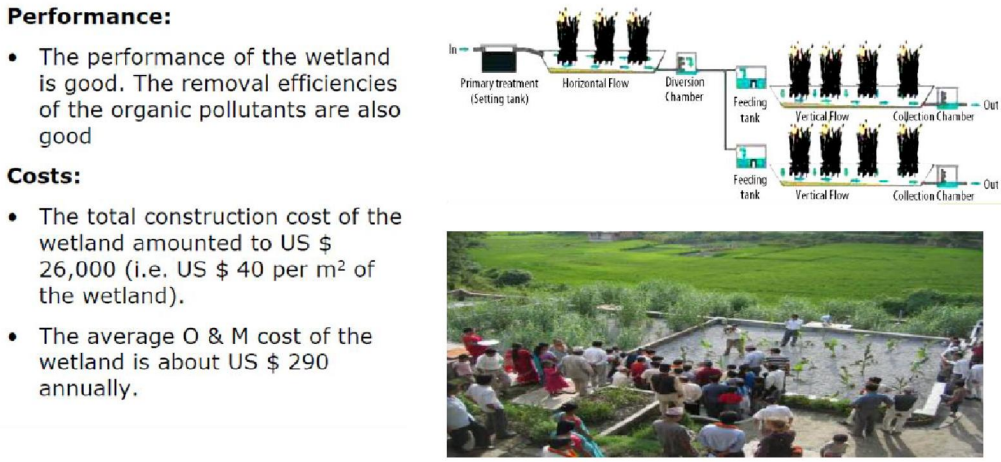

Figure 2: Kathmandu University, Nepal

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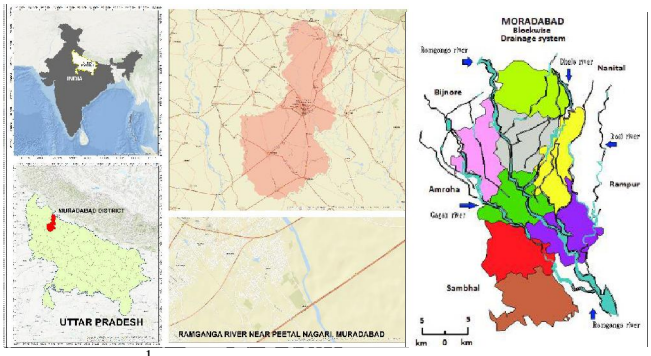
Singapore: The "Four National Taps" policy is a comprehensive and unique method to water management applied by Singapore. To provide a sustainable water supply, this method relies on collecting rainfall, recycling wastewater, desalinating saltwater, and importing water. Singapore has converted its water-scarce predicament into a vibrant water economy via investments in infrastructure, technology, and education. The nation has become a global leader in water technology and exports its knowledge, hence producing employment and economic prospects in the water industry.
Kathmandu University, Nepal:

Moradabad Assessment[1]

Moradabad is a city in the northern Indian state of Uttar Pradesh. It is situated on the banks of the Ramganga River, which has played an important part in the history and development of the city. The following is a summary of Moradabad. Moradabad is renowned for its brass and metal handicrafts sector and has a substantial industrial presence. The city is a major exporter of brassware, including kitchenware, ornamental objects, and jewellery. In addition to textiles, glassware, and furniture, the manufacturing sector consists of industries such as textiles, glassware, and furniture. Agriculture, namely the growing of sugarcane, is a significant economic activity in the surrounding rural areas.



[1]Figure 3: Study Area Moradabad

[1]Figure 4: Water pollution in river streams of Moradabad

[1] Source - Authors

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Numerous houses and businesses release untreated or partially treated wastewater into water bodies, hence contributing to water pollution and the destruction of the riverine ecology. In Moradabad, water contamination is a big problem. Water supplies are polluted by industrial operations, inappropriate waste disposal, and inadequate wastewater treatment. Water pollution has negative effects not just on human health, but also on ecosystems and biodiversity. Providing citizens with access to clean and safe drinking water is crucial for their health.

IV. RESEARCH FINDINGS

Moradabad's riparian routes are primarily contaminated by identical brass businesses.

The examination of Moradabad's riparian corridor restoration work reveals both ecological and socioeconomic advantages. Restoring riparian corridors has had a good effect on the local ecology, water supplies, and community well-being, according to the findings. The following inferences can be made: The reinstatement efforts have resulted in substantial enhancements to the ecological health of riparian corridors. Indicators of increased plant cover, greater habitat connectivity, and higher water quality demonstrate a favourable response to the intervention. Assessments of biodiversity indicate a rise in species diversity, suggesting a functioning environment.

Hydrological Advantages: The reintroduction efforts have demonstrated potential hydrological advantages. Changes in water flow patterns, greater groundwater recharge, and effective flood control methods have enhanced water availability and management. The reestablished riparian corridors serve as natural buffers, mitigating the effects of flooding and increasing the ability to store water. Water Quality Enhancement The reestablishment activities have resulted in significant improvements to water quality metrics. The concentrations of nutrients and turbidity have decreased, but the concentrations of dissolved oxygen have increased. These enhancements reflect a more robust and robust aquatic ecology.

V. CONCLUSIONS & RECOMMENDATIONS

Industrial discharge into rivers must be stopped immediately, and effective treatment is necessary.

On the basis of the evaluation of attempts to restore Moradabad's riparian corridors, the following policy suggestions may be made:

- Approach to Integrated Water Management: Implement an integrated strategy to water management that takes ecological, hydrological, and socioeconomic factors into account. Develop policies that encourage the sustainable use and management of water, protecting and restoring riparian corridors as vital components of urban water systems.
- Strengthen Participant Collaboration: Encourage strong collaboration between government agencies, non-governmental organisations, local communities, and enterprises engaged in water management and the restoration of riparian corridors. Establish channels for regular communication, collaboration, and sharing of knowledge to guarantee efficient project implementation and monitoring. Encourage multi-party collaboration and participation in decision-making processes.
- Incentivize Conservation & Restoration: Provide landowners, farms, and companies with subsidies and incentives to adopt conservation measures and engage in riparian corridor restoration. Provide financial assistance or tax incentives to individuals who actively contribute to the conservation and upkeep of riparian habitats, encouraging stewardship and long-term investment.
- Public Awareness and Education: Launch public awareness campaigns and educational initiatives to educate the public on the ecological significance of riparian corridors and the advantages of water conservation. Engage local people through seminars, training sessions, and outreach initiatives to promote sustainable water management methods and increase knowledge.
- Planning and Regulation of Land Use: Incorporate protection and restoration of riparian corridors into urban planning and land use rules. To protect the ecological integrity of riparian regions, implement zoning restrictions that ban or restrict development activities near riparian zones. Urban development projects should include buffer zones and green infrastructure in order to maintain and restore riparian corridors.

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- Financial Instruments: Explore creative financial strategies to help initiatives to restore riparian corridors. Establish specific funds for riparian conservation and restoration initiatives, leveraging public-private partnerships and seeking support from other sources. To provide long-term finance for maintenance and management, promote sustainable financing solutions such as payments for ecosystem services or green bonds.
- Observation and Evaluation: To analyse the efficacy of reinstatement efforts, develop a thorough monitoring and evaluation mechanism. Monitor important indicators such as water quality, biodiversity, hydrological parameters, and socioeconomic consequences on a regular basis. Utilize acquired data to enhance adaptive management tactics and make well-informed judgments on future initiatives.
- Knowledge Sharing and Capacity Building: Facilitate knowledge exchange and capacity building among riparian corridor restoration stakeholders. Promote training programmes, workshops, and seminars to improve water management and riparian ecology-related technical skills and knowledge. Encourage research and academic collaboration to produce new information and creative solutions.

By following these policy proposals, Moradabad may increase its efforts to restore riparian corridors and guarantee their long-term viability. These policies seek to encourage the protection of riparian habitats, enhance water management techniques, and support socioeconomic growth in a manner that benefits both the local environment and community. This may be further developed as a prototype and applied in Indian cities.

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