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Research Article

Eco-technological Civil Engineering for Revitalizing the Jalangi River: A Sustainable Policy Perspective

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Abstract

The Jalangi River (JR), a branch of the Ganges River in Murshidabad and Nadia districts of West Bengal, India, flows into the Bhagirathi River and strengthens its lower channel, the Hooghly. The part of the Jalangi River in Nadia district (especially in the ISKCON Mayapur, Nadia surrounding river-based area) is considered for this study, which represents the river's lower course. The key challenges are; decreasing water flow, shifting of the main channel of the Ganga, disturbing the main channel sediment quarrying from the river bank and -dry river bed, land-use changes, contamination of river water through the release of effluents into the river, garbage dumping, indicating eutrophication, and reducing the diversity of aquatic life, etc. The anthropogenic impact is mostly visible in the areas near Krishnanagar City, an enriched habitat of different flora and faunal diversity in a historic place. The biodiversity is decreasing gradually due to the oldest tourist spots where large gatherings, loud recreational events, killing of wild animals, cutting the trees, disturbing, catching, unethical human behaviours and urbanization nearby badly affected and it adversely affects the environment (Water, Sanitation and Ecology) and societal problems. To overcome it, the main aims and objectives; (i) the proper planning and awareness may regenerate the river environment. (ii) Preventing the mixing of water coming from industrial effluent, hospitals, aquaculture and agricultural effluent, and careless disposal of wastewater or soil erosion. (iii) Provide suggestions for future tourist behaviour to minimise the impact on biodiversity. It will be successful by engaging and getting scope to identify the prospects and study of management of land, water and living resources, promoting wildlife conservation and sustainable use equitably, and can also study ecosystem management. It is observed that the biodiversity of the 'JR' includes different aquatic animals, with fish, foxes, water monitor lizards, turtles, fishing cats, civet cats, barn owls, and even migratory birds. It may be enhanced through vegetation planning and management of water bodies and land that focus on tourist sites that can enhance the visitor experience, protect natural resources, and socio-economic benefit of local communities, and help promote the conservation of wildlife biodiversity, and research also improving "Civil-Engineering Environmental-Science World Policy". The perfect ecological balance of fireflies with water, land and vegetation may develop any 'Future-Socio-Economic-Eco-Tourist-Spot'. Thus, the findings suggest, "Civil-Engineering Environmental-Science May Save Jalangi-Like-Others-River For: Potential-Resources Socio-Economy Sustainable-Ecology Future-Wellbeing's Policy!", and "JR May Transform As Eco-Tourism Spot Focusing Ecological Foot Print Biodiversity Conservation Natural Resources Socio-Economic Management Ecosystems Improving World Environmental Policy! It needs many private financing partners for 'Climate Transition'.

Introduction

The background of the Jalangi River (JR), a branch of the Ganges River (GR) in Murshidabad flowing 206 km through the District-Nadia meeting the river Bhagirathi near Nabadwip Town, Nadia (Figure 1), is the habitat of various aquatic flora and fauna especially the biologically significant of the avian diversity with the seasonal variation and abundance of entire biosphere due to depending on the physicochemical ion concentrations parameters and the quality of the river water.

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And the anthropogenic impact is mostly visible in the areas near Krishnanagar City, an enriched habitat of different flora and faunal diversity in a historic place [1-3].

In an era where environmental sustainability is paramount, our rivers and wetlands are facing unprecedented challenges. The degradation of these crucial ecosystems not only poses threats to biodiversity (Figures 2,3) but also jeopardises the very foundation of human civilisation [1-5]. The key challenges (Figures 1-3) are; decreasing water flow, shifting of the main channel of the Ganga, disturbing the main channel sediment quarrying from the river bank and -dry river bed, land use changes, contamination of river water through the release of effluents into the river, garbage dumping, indicating eutrophication, and reducing the diversity of aquatic life, etc., especially near the ISKCON, Mayapur which is famed for Chaitanya Mahaprabhu's dham, Nabadwip, which is located at the confluence of the rivers Hooghly and Jalangi in Nadia district (Jalangi River – Wikipedia) [6].

The biodiversity is decreasing gradually (Figure 3) due to the oldest tourist spots where massive tourists gather, picnic parties with large sound systems, jute stem ratting, killing of wild animals (Figure 3), cutting the trees, domestic use,

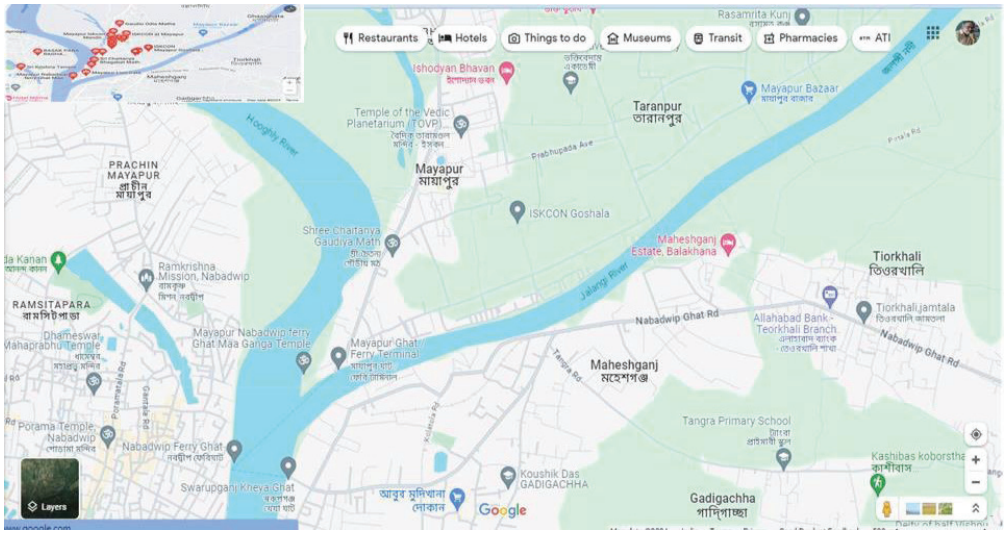

Figure 1: The Jalangi River meeting the Bhagirathi near Nabadwip Town (Source: Google).

Figure 2: The problems regarding degradation of ecosystems in the Jalangi river and wetlands.

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Figure 3: Effects on biodiversity of different wild animals in the Jalangi [4,5,12].

irrigation, soil erosion, disturbing, catching, unethical human behaviours, brick factory, water transportation, 'Bisarjan of Goddes', swage water, and urbanization nearby badly affected and adversely affects the environment (Water, Sanitation and Ecology) and societal problems [1-6]. Recently, it has been reported that the amazing diversity of today's ants is tied to the rise of flowering plants, and the earliest ants became extinct, but more generalist species blossomed by taking advantage of the spread of plants of flowers [7].

Aims and objectives

To overcome it, the main aims and objectives are;

i. Proper planning, identifying critical issues, and awareness may regenerate the river environment.

ii. Preventing the mixing of water coming from industrial effluent, hospitals, aquaculture and agricultural effluent, and careless disposal of wastewater or soil erosion for exploring technological solutions.

iii. Provide suggestions for future tourist behaviour to minimise the impact on biodiversity, and integrate heritage and cultural insights also.

iv. Increase and use of natural resource engagement of the fostering community for improving the socio-economy.

v. Provided a public platform for in-depth discussions on critical issues on the degradation of rivers and wetlands, and unlocking potential resources for the attraction of renowned international and national environmentalists, scientists, policymakers, and scholars.

vi. Understand the socio-economic-political dynamics, and formulate policy recommendations to solve the challenges.

This study's 'Manuscript Standing and Epitome' investigates the environmental and socio-economic revitalisation of the Jalangi River in West Bengal, India. It proposes eco-technological strategies and conservation hubs through biodiversity restoration, local engagement, and future-focused infrastructure planning. The manuscript aligns with the journal's mission to integrate civil engineering and environmental science toward sustainable ecosystems. Everybody agrees on its merits. This article brings a fresh and interdisciplinary perspective by merging civil engineering, environmental science, and socio-ecological sustainability. The conceptual approach is innovative and practical with remarkable academic value. It can serve as a notable contribution to sustainable river ecosystem management. To enhance scientific rigour and communication, a dedicated 'Literature Review' will help situate the study within existing research, supporting structural reorganisation and improved clarity in expression.

Literature review

To overcome the problems of the Jalangi River in West Bengal, India, it is necessary to add a dedicated 'Literature Review' to better situate the study within existing research, especially for the structural reorganisation and improved clarity in expression necessary to elevate the manuscript's value and enhance scientific rigour and communication. And the conceptual approach is innovative and practical with remarkable academic value. Sustainable river ecosystem management aims to balance ecological health with human needs, ensuring the long-term viability of river systems and the services they provide. This involves managing water resources, considering environmental flows, and mitigating the impacts of human activities [7-9]. It depends on "Technology and Environmental Policy" [10] and "Case study research in information systems" [11]. It has already been reported that the amazing diversity of today's ants is tied to the rise of flowering plants by taking advantage of the spread of plants of flowers [7]. It is known, "Optimising green supply chain circular economy in smart cities with integrated machine learning technology" provides valuable

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insights for decision-makers and researchers navigating the landscape of sustainable development [12]. Eco-technological approaches, rooted in scientific principles, offer solutions that minimise environmental harm while improving efficiency and performance. These approaches, like those in renewable energy, sustainable materials, and smart city technologies, represent a shift from traditional engineering practices to designs that prioritise resource efficiency, pollution reduction, and waste management. Green building practices to integrate renewable energy in the construction sector, and by integrating ecological considerations into the engineering design process, these approaches can lead to positive environmental outcomes and contribute to a more sustainable future [13]. It is learnt from the paper entitled "Sustainable Management Options for Healthy Rivers in South Asia: The Case of Brahmaputra" [14]. It examines the physiographic, ecological, hydrological, and socioeconomic status of the Brahmaputra River, providing life-supporting services to about 70 million people. It suggested strategies will help in maintaining the eco-hydrological health and utilitarian services of the river for the socioeconomic development of millions of poor and marginalised people living in the basin [14]. "The sustainable manufacturing concept, evolution and opportunities within Industry 4.0: A literature review" will be very effective [15]. Action Plan for Rejuvenation of River Jalangi Krishnagar, West Bengal Priority – IV Nodal Agency Municipal Engineering Directorate Department of Urban Development & Municipal Affairs Government of West Bengal Approved by River Rejuvenation Committee, West Bengal (constituted in compliance to the order of the Hon'ble National Green Tribunal) Submitted to Central Pollution Control Board, Delhi July, 2020 [16]. It is observed that the diversity of eco-innovation reflections from selected case studies [17]. Adusei et al. (2025) show that leveraging social media for eco-education: home gardening for climate resilience and food security [18]. Khan and Sarkar (2017) observe, "Jalangi River and Its Fish Diversity: A Review" [19]. The social media, the JustDial reviews of Save Jalangi in Krishnanagar, 2025 [20]. Datta informs, "Advances in Clinical Toxicology depend on Eco-technology" [21]. It is already known, "Artificial-Nest Rainwater-Harvesting with Fishery and Floating-or-Rooftop-Gardening Act as 21st Century COVID-19 Epidemic-Model: Improved Biodiversity Agriculture Socio-Economic Civil-Engineering Environmental-Sciences Technology-Communication" [22]. "Assessing the impacts of ecological framework of Indian riverfront revitalisation projects", recently published (2023) in the "Environment, Development and Sustainability" [23]. Ray and Pal (2021) examine the "Study of aquatic biodiversity and correlation with physical parameters of Jalangi river" [24]. "Owls and Bats Act as Future 'Wild X-Disease' Preventive COVID-19 Non-Medicated Vaccine: Improved Global-Health-Forestry-Agriculture-Environment-Science-Technology-Communication!", is observed by Datta [25]. Datta (2020) informs, "Weeds-Vegetables and Fruits Act as Potential Biomedicines against COVID-19: Enriched Agriculture Biodiversity Socio-Economy Science Technology Communications by Controlling Plant Diseases, in the Journal of Experimental Biology and Agricultural Sciences" [26]. In a 'Community-Case-Study-Reports' of 'Spices-Community-Biomedicines-Physiology' Act as 'Archives of Preventive-Booster-Community Vaccines' Against 'Any-'A-Z'-Diseases' By Immunizing Public-Health-Socio-Economy Environment Wildlife Biodiversity-Conservation Science-Technology Communication Applications Ecology" [27]. Datta (2024) informs, "Scientific and Technical Application of Cost-Effective Ginger-Bio-Medicines Use as Pandemic-Preventive Natural-Immunity-Booster 'Family-Vaccine'!" [28]. Currently, it is known, "Spices tropical-traditional-bio-medicines (STTBM) protect public health" [29]. In school, "Bio-Medicines: Apple and Orange Fruits in Additional 'PM POSHAN' Advancing Disease Biology Biotechnology Biodiversity Joyful Environment" [30]. In Science, 3rd April 2025, an innovative finding, 'Uniquely human' language capacity found in bonobos [31]. And Kalan and Luncz publish (3rd April 2025) in Science that the saving of the cultural legacy of wild animals [32].

Materials and methods

Study Zone: The 'Study Area' of the part of the Jalangi River in Nadia district (Figure 4), especially in the ISKCON Mayapur, Nabadwip Town, Nadia (Latitude: 23° 24' 59.99" N, Longitude: 88° 21' 59.99" E, i.e. 23.252 N 88.222 E) meeting the river Bhagirathi, surrounding a river-based more or less 7 sq km, which is considered for this primary study area. It represents the lower course of the river with tropical climatic nature, and the average yearly rainfall is about 1480 mm, and the average RH (relative humidity) is about 75%. The highest temperature is often 45°C, and the lowest is about 7 to 80°C. The JR based-area covered with dense vegetation, bushes and grass cover enriched with various species including fish, crabs, migratory birds, and gray-colored water monitor lizards, fishing cats, civet cats, rats/mice, bats, moles, squirrels mongooses, owls, toads, etc., and the Jalangi-Bhagirathi river basin is bordered by ponds and agricultural fields with good balanced of water, land and vegetation the 'Location Wise an Ideal Place' for keeping-and-caring of 'Wild Animals' [1-6]. The 'Study Samples' (Figures 1-4) were mainly the different wild animals, water bodies, agricultural land, vegetation, visitors, photographers, and local community, etc. [1-7]. The duration of the study was from December 2020 to the present April 2025 [1-6].

Technical Work Plan: Here, the different technical teams include the specifics on data collection, sample selection, and analysis tools to enhance reproducibility. The tourists, visitors, photographers, local community, NGOS, boatmen, students, and observers work as 'Nature Lovers' as well as technical teams. They collect samples frequently, using random block designs, in the early morning, afternoon, and dusk, ensuring adequate visibility during daylight hours. Here, all the notable living and nonliving items are the samples [1-5,7,10-12]. It needs a proper understanding to observe and collect. They find out problems, and all have identified patterns, trends and problems in lockdowns based on mainly observation- and interaction based -survey among communities, experience old worker/labor, fisherman, farmers, etc., and they observe the biodiversity during the pre-and post-Covid-19 informing all directly to the guide Dr Subhas Chandra Datta, Nature Scientist, Or indirectly through social media platforms like Facebook as

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a tool to promote environmental education and sustainability [1-5,7,10-17].

Typical Source from Social Platform and Social Work: Mainly, the different media, NGOs, college students, scientists, photographers, interested experienced communities, aged people, and volunteers organized different social awareness virtual camps among the local communities, and emphasized the importance of collective action and the pivotal roles of local communities themselves (Figure 5) and innovative technologies in achieving sustainable solutions. Some highlighted the significance of cultural insights in environmental conservation, stressing the emotional connections and heritage value associated with ecosystems like rivers and wetlands. Some institutes emphasised the need for a holistic approach to sustainable development, underscoring the importance of considering socio-economic-political dynamics in policy formulation. Eminent educated people emphasised the global importance of water resources and the need for collective action to address challenges faced by rivers and wetlands worldwide, and others highlighted the innovative solutions through eco-technological advances in ecosystem restoration, preservation,

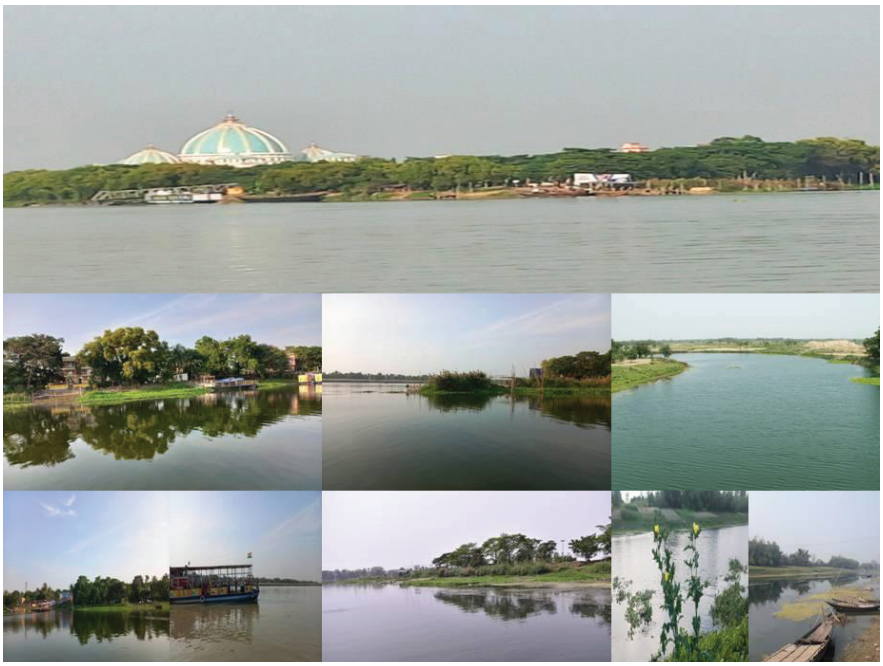

Figure 4: The study area of Jalangi River in Nadia especially nearby the ISKCON Mayapur.

Figure 5: Volunteers organized different social awareness camps for the Jalangi River in Nadia.

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and international collaboration. Some underscored the global dimensions of the crisis and the importance of international cooperation and knowledge-sharing for the sustainable future of rivers and wetlands. Some emphasised the fundamental role of engaging local communities and integrating their knowledge with global expertise in paving the way for a sustainable future [18-21,23,24].

Tourists also discuss the benefits of biodiversity, biomedicines, fishery, agriculture, horticulture, socioeconomics, ecology education tourism, health, etc., and plant fruit trees with hanging artificial nests. Panel discussions among the 'Save Jalangi' well-wishers facilitated robust exchanges of ideas and insights, contributing to a deeper understanding of the challenges and potential solutions to revitalise decaying rivers and wetlands for a sustainable future, recognising the urgency of collective action in safeguarding these vital ecosystems for future generations [1-5,7,10-12]. And the JustDial Social Platform, "The Reviews of Save Jalangi in Krishnanagar", offer different perspectives, helping understand potential advantages and challenges that reviews provide credibility and reflect genuine experiences, helping you make informed decisions [19,20].

Data collection

Data collection in river studies involves various techniques like monitoring physical and chemical properties, assessing biological populations, and analysing water quality. Sample selection strategies vary depending on the research question, but often include random, stratified, or systematic approaches [19,20]. Analysis tools range from basic statistical methods to advanced modelling techniques, helping researchers understand river ecosystems and predict future changes. And the 'Data Collection Technique' refers to the methods used to gather information from various sources such as interviews, observations, questionnaires, and relevant documents to strengthen the credibility of research outcomes and allow for different interpretations during data analysis [10,11]. Eco-technological approaches, rooted in scientific principles, offer solutions that minimise environmental harm while improving efficiency and performance. These approaches, like those in renewable energy, sustainable materials, and smart city technologies, represent a shift from traditional engineering practices to designs that prioritise resource efficiency, pollution reduction, and waste management. By integrating ecological considerations into the engineering design process, these approaches can lead to positive environmental outcomes and contribute to a more sustainable future. Optimising green supply chain circular economy in smart cities with integrated machine learning technology [12]. So, revitalising the Jalangi River in West Bengal requires addressing both environmental degradation and socio-economic challenges. This involves restoring water flow, addressing unsustainable fishing practices, and promoting sustainable development that benefits local communities. Noting down the collected data in the 'Logbook', maintaining and recording observations, interaction-survey, reference and community information which were authenticated by the guide [1-5,8-12,14-17,19-21,23,24].

Observation on sampling of data

A photography-based interaction- survey, questions-based content, randomly asked and collection of answers, record the qualitative and quantitative ecological data of the different biodiversity during the COVID-19, emphasis on different personal views, and opinions, and collecting and recording data on logbook mainly from the 'Nature Lovers' photographers, visitors, tourists, local community, different Social Platform, NGOs, teachers, and students, etc. [1-5,8-12,14-17,19-21,23-30]. All maintain the COVID protocol by following the mask mandate, cleaning hands with soap, the physical distance by avoiding touching eyes-nose-mouth, etc.[1-6,8-11]. All try to make the news in different forms for 'Sustainable Future Green Biodiversity Ecology of Jalangi' [1-6,8-13]. With the help of an experienced bio-statistic biologist scientist cum educationalist all the data were analyzed were done [1-5,7,10-17,21-30].

Results and discussion

The average estimated results, Tables 1,2, Figures 1-5, focus on some "True Biodiversity Complex Ecosystems of the Jalangi-Bhagirathi (TBCEJB)" river-based and junction surrounding a 7 sq km area of the ISKCON Mayapur, Nabadwip Town, depending on the direct photography-based observation interaction-survey among the residents of the communities.

Transformation of various true biodiversity complex ecosystem hubs

Here, the typical biodiversity-complex-ecosystems of the Jalangi-Bhagirathi river-based junction may transform various conservation hubs ecology (Tables 1,2, Figures 1-8); biodiversity conservation hubs, bio-medicine conservation hubs, fruit trees conservation hubs, artificial nests conservation hubs, wildlife conservation hubs, fishery conservation hubs, manure conservation hubs, breeding conservation hubs, research conservation hubs, fireflies conservation hubs, and tourist conservation hubs with eco-toxicology conservation hubs [1-5,7,10-17,21-30]. 'Uniquely human' language capacity found in bonobos [31]. So, saving the cultural legacy of wild animals. Science [32].

Focusing on various components

It is already informed that the transformation of different "True Biodiversity Complex Ecosystems of the Jalangi-Bhagirathi (TBCEJB) River-Based Junction" had focused or emphasized various aquatic animals with fishes, zooplanktons, dragonflies, damselflies, fireflies, molluscs, crabs, foxes, water monitor lizards, turtles, aquatic snakes, fishing cats, civet cats, barn owls, and even migratory birds, mongoose, viper snakes, and different plants flora that may contribute to ecological complexity across conservation hubs [1-6,9]. For example; only the seasonal migratory bird diversity or avifaunal at the 'JB'-river-based Junction from April 2020 to March 2025 (Table 1, Table 2, Figures 1-8); decreased due to a lack of proper breeding place, and maximum birds were sighted during winter; primary migratory bird, residential migratory

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Table 1: True biodiversity complex ecosystems of the Jalangi-Bhagirathi river-based junction.

No.	TBCEJB	True Complex Biodiversity Formation: Observation/Survey/Awareness, etc.
1.	Biodiversity Ecology	Representative flora and fauna contributing to health, safety, and ecological food security, sustainable socio-economic development and tourism.
2.	Bio-Medicine Ecology	Plantation and conservation of different medicinal plants for health and well-being transforming 'Bio-Medicines Ecology' and clinical research.
3.	Fruit Trees Ecology	Plantation and conservation of different fruits-trees ecology for biomedicines, nutrition, shelter, biodiversity conservation, health and well-being transforming sustainable health safety with food security.
4.	Artificial-Nests Ecology	Hanging of 'Artificial Nests' in the trees transforming sustainable socio-economic development of 'Eco-Technological innovation Ecology' for enriched biodiversity, health, and well-beings preventing any future pandemic.
5.	Wildlife Ecology	Conservation of different types of wild animals; fishes, crabs, fishing cats, bats, owls, squirrels, rats, mongoose, mice, reptiles, toads, pigeons, birds, and insects, water monitor lizards, etc. for a joyful environment, sustainable socio-economic development and tourism with future treatment clues.
6.	Fishery Ecology	Conservation of different types of fish seeds improve the socio-economy, sustainable health, food security, and complex ecosystem ecology.
7.	Manure Ecology	Different waste materials or byproducts of animals, and plants for enriching faunal diversity ecology transforming bio-fertilizer/bio-manure for the economy.
8.	Breeding Ecology	Different fishes, snails, crabs, tortoises, birds, etc. breed safely socio-ecology.
9.	Research Ecology	Easily availability and accessibility of biodiversity ecology help scientists.
10.	Tourist Ecology	Excellent cost-effective communication, service, and facilities, enriched habitat biodiversity ecology transforming tourism sectors.

'TBCEJB': True Biodiversity Complex Ecosystems of the Jalangi-Bhagirathi

Table 2: Biodiversity ecosystem data of the Jalangi-Bhagirathi river-based junction.

No.	Name of the Main Components of Biodiversity Hub	Average Populations the River-Based Jalangi-Bhagirathi Junction			
		2020	2022	2024	Remarks
1.	Plants (Flora)	High	High	Low	Decreasing in number due to urbanization.
2.	Wild Animals	Medium	Large	Low	Decreasing due to urbanization and killing.
3.	Small Fishes	High	High	High	Increasing due to awareness and calm.
4.	Migratory Birds	Medium	High	Low	Decreasing due to proper breeding place.
5.	Lizard's (Monitor)	High	Medium	Low	Decreasing due to food and killing.
6.	Fishing Cats	High	Medium	Low	Decreasing due to food and killing.
7.	Fox	Low	Medium	High	Increasing due to sufficient food.
8.	Owls	Low	Medium	High	Increasing due to foods and habitat.
9.	Viper snake	Low	Medium	High	Increasing due to lowering the monitors.
10.	Ordinary Birds	Medium	High	Low	Decreasing due to breeding place and food.
11.	Mongoose	High	Medium	Low	Decreasing due to breeding place and food.
12.	Medicinal Plants	High	High	Low	Declining due to urban expansion.

and resident due to the variation and availability of food in different seasons which was controlled by the various factors like photosynthesis within river, soil fertility, physicochemical parameters, ion concentrations of river water, scavenger, pollinators and predators of insect and pest etc. The amazing spreading diversity of flowering plants was done by ants [1-6,8-11]. And, there were many fish species found influencing their diversity depending on different characteristics of an aquatic ecosystem and various pollutants with eel grass [8-24]. Interestingly, Biodiversity levels rose during COVID-19 lockdowns but declined in the post-pandemic period [1-6,8-30].

Socio-economic eco-technological approach

Different eco-technologies may enrich the Jalangi-Bhagirathi river (Figures 1-8) as follows [1-6,8-32];

- 'Conservation', eco-technology increased the flora and fauna development of 'JB', river-based.
- 'Plantation', eco-technology, on both sides of the river may flourish many industries, from carpentry to biomedicine.
- 'Alternate Jute Fibre Extraction and Retting', eco-technology (jute fibre extraction by machine) in the 'JB'- river-based, and jute farmer community engagement is the most sustainable 'Socio-Economical Eco-Technological Approach'.
- 'JB'- river-based 'Clean-Up Drives', an eco-technological approach, is a very effective community engagement in sustainable practices.
- 'Solar', renewable eco-technology application during boating by the boatman-community not only provides socio-economically benefits but also is environment-friendly, vibrant water resources/centres of recreation of 'JB'.
- Eco-technology activities in the river-based 'JB' transform the eco-tourism socio-economic sector for social, cultural, and religious gatherings in ISKCON, Mayapur, also.
- The priority of the environmental eco-technology application on river revitalisation for the imperative to sustainability and ecological development is the topmost planning and execution.

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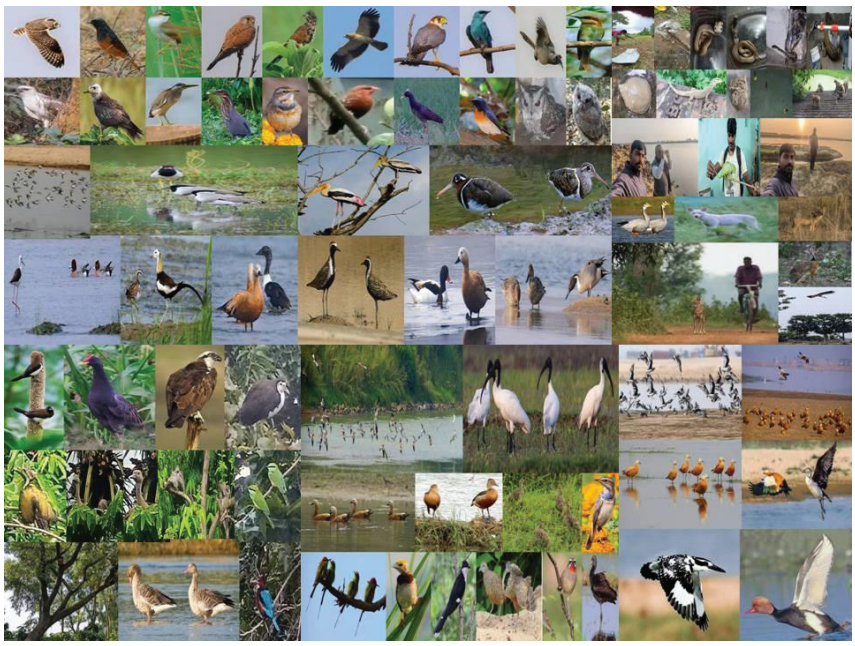

Figure 6: Biodiversity of the Jalangi and other river [4,8,12].

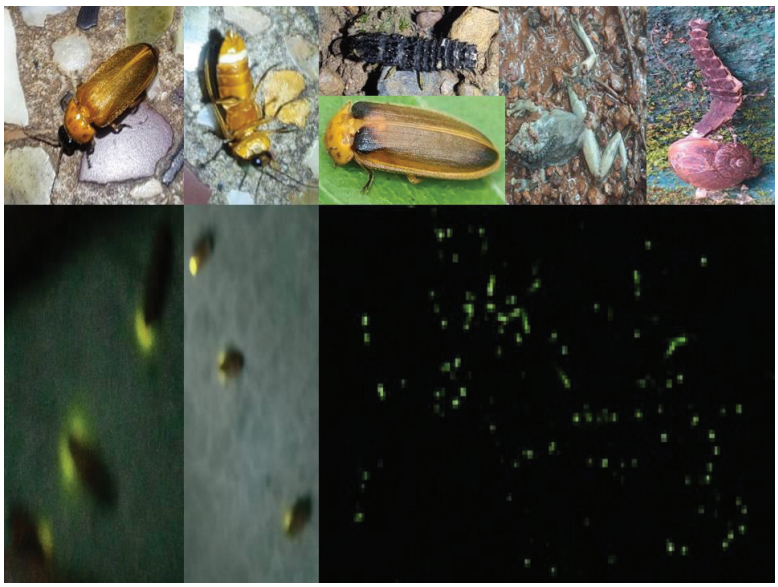

Figure 7: Firefly and larval biodiversity along the Jalangi and Banka Siphon regions [4,5].

- Integrated eco-technological approach towards fostering holistic and sustainable urban river-based 'JB' transformation and improvement of ecology.
- Eco-technology activities in the river-based 'JB' transform enhancing both socio-economic vitality and environmental sustainability, contributing to the long-term success and well-being of both communities and ecosystems.
- Artificial Nests make an eco-technological approach, also transforming not only socio-economic development and well-being of the community but also environmental benefits.
- Awareness and application of different eco-technology transform the river-based 'JB' revitalisation of eco-friendly calm and quiet environments, enriching biodiversity conservation that focuses on "The Heritage ISKCON Mayapur Jalangi- Bhagirathi River-Base".

Future Treatment Clues for Wellbeing: It is already been reported that bats, owls, weeds, vegetables, fruits, and spices, etc. act as a preventive 'Bio-Indicator/Social-Vaccine/Vaccine/Biomedicines' for recent pandemic/ epidemic diseases by increasing immunity maintaining the ecological balance of water, land and vegetation i.e. micro bio-climate, and enrich 'Water, Sanitation and Ecology', and solves societal problems focusing 'Future Treatments Clues for Wellbeing'

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Figure 8: Different eco-technologies enrich the Jalangi-Bhagirathi junction and other river.

[22-30]. In 'Future Implications', it is worth mentioning that a preliminary observation shows, "Identifying Critical issues, Unlocking potential resources, technological solutions, Community Engagement, Heritage & Cultural Insight, Socio-Economic-Political Dynamics, and Policy Recommendations for the Jalangi River-Base Emphasis on Transformation of Complex Biodiversity Conservation". The Government's West Bengal Pollution Control Board and Central Pollution Control Board, local administrations, NGOs especially Save Jalangi (West Bengal), Krishnagar Women's College, the University of Burdwan, Department of Geography at Aliah University, Queensborough Community College in the USA, Jagannath University-Dhaka, World Water Council, and different well-wishers already focused on different issues (Plate1). The renowned international and national environmentalists, scientists, policymakers, scholars, scientists, student researchers, photographers, and nature lovers communities try to consider or use or apply the preventive/ protective eco-technologies for the 'Clinical Biodiversity Bio-Medicines Future Research Hubs' for tourist spots, future research, future biodiversity-green environments for human health, preventing future epidemics, future fishery, pisciculture, agriculture, and biomedicines, future socio-economy and ecology economy, local technology management of public and private green ecosystem service and human health economy, ultimately provide scientific healthcare, and skill development with job facilities ensuring proper living conditions showing the treatment clues by increasing immunity [1-6,8-30]. In a first, researchers have seen a nonhuman animal's 'Uniquely human' language capacity found in bonobos combine different calls to make new meanings [31]. Recently, biodiversity loss threatens the study of tool use and other cultural behaviours in animals, proving the "Saving the cultural legacy of wild animals" [32].

Why is this manuscript appropriate for this journal?

This manuscript is appropriate for "The Journal of Civil Engineering and Environmental Science" because it offers the different perspectives of Eco-Technology Civil Engineering and Environmental Science, helping everybody understand potential advantages and challenges that provide credibility and reflect genuine experiences, helping make informed readymade smarter decisions and choose the best way out to restore and renew any river for wellbeing availing of environment friendly services in a great way to gain valuable insights. And these manuscript can guide everyone in evaluating whether "Save Jalangi" meets the expectations in, Krishnanagar, Nadia, West Bengal, India, also benefitting the every communities by encouraging feedback to improve services, creating a stronger connection with the different communities, NGOs, photographers, nature-lovers, reporters, social-media, scientist, engineer, ecologist, students, researcher, and social reformers, etc. sharing experience among themselves regarding "Save Jalangi to Help Others Make Better Choices, "Civil-Engineering Environmental-Science May Save Jalangi-Like-Others-River For: Potential-Resources Socio-Economy Sustainable-Ecology Future-Wellbeing's Policy!", needing many private financing partners for 'Climate Transition' also [1-32].

Conclusion

This study concludes that engaging and getting scope to identify the prospects and study of management of land, water and living resources, promoting 'Eco-Technology' with wildlife conservation and sustainable use equitably, and can also manage the ecosystem. It is interesting that the biodiversity of the 'Jalangi' includes different aquatic animals, with fish, crabs, foxes, water monitor lizards, turtles, fishing cats, civet cats, barn owls, and even migratory birds. It can be

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enriched through strategic vegetation planning, ecosystem restoration, and sustainable land and water management to enhance tourism, support local communities, and promote biodiversity conservation. The perfect ecological balance of fireflies with water, land and vegetation has the potential to support future eco-tourism development. Thus, the findings suggest, "Civil-engineering environmental-science may save jalangi-like-others-river for: Potential-Resources Socio-Economy Sustainable-Ecology Future-Wellbeing's Policy!", and "The Jalangi River could be developed into a model eco-tourism destination with day-and-night accessibility focusing ecological foot print biodiversity conservation natural resources socio-economic management ecosystems improving world environmental policy! Private financing partnerships are essential to support climate transition strategies.

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