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Urban Lake Restoration and Tourism Development: A Study on Coimbatore city under the Smart Cities Mission

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Abstract

Urban lakes play a critical role in ecological balance, water resources management, and recreational life in cities. Coimbatore, an emerging urban centre in Tamil Nadu, India, possesses a historically rich network of lakes that are undergoing rejuvenation and redevelopment under the Smart Cities Mission — a flagship urban renewal programme launched by the Government of India. Urban lakes, beyond their ecological functions, serve as significant sites for recreational and nature-based tourism. These lakes offer significant yet underutilized potentials for lake tourism — a segment of nature-based and recreational tourism that combines ecological conservation with socio-economic development. Periyakulam and Valankulam Lakes have strong potential to emerge as model urban lake tourism destinations in Tamil Nadu. With integrated planning, effective management, and sustainable tourism practices, these restored lakes can contribute significantly to urban recreation, local economy, and environmental conservation in Coimbatore city. The study synthesizes how lake restoration has contributed to tourism development, urban recreation, environmental sustainability, and public well-being. By analyzing policy frameworks, project implementation, visitor responses, tourism dynamics, and sustainability challenges, this research sheds light on the successes and limitations of transforming urban waterbodies into tourism and public spaces.

Keywords: Lake Tourism, Coimbatore, Smartcity Mission, Sustainable Tourism, Valankulam Lake, Periyakulam Lake

Introduction Background

Recreational activities including boating, hiking, birding, water sports, and other pastimes that might draw tourists and improve urban tourism offers are all included in lake tourism. Lakes and ponds are examples of urban waterbodies that are essential to city ecosystems. They provide recreational and scenic value, cushion floods, promote biodiversity, and aid in groundwater recharge. Due to sewage outflows, encroachments, and inadequate administration, many lakes in Indian towns, including Coimbatore, have deteriorated

as a result of rapid urbanization. Urban lakes play socioeconomic roles as public leisure areas in addition to ecological ones like supporting biodiversity and recharging groundwater.

Lakes in Coimbatore, which were formerly used for flood control and irrigation, have lately been restored as part of urban development initiatives, offering new prospects for the expansion of tourism.

Coimbatore was selected as a Smart City under the Government of India's Smart Cities Mission in January 2016. A core component of the city's Smart City plan was the restoration and rejuvenation of its historic lake system. Historically, the lakes are built by the Chola kings and later neglected over decades. The seven lakes targeted under this mission include Periyakulam, Valankulam, Krishnampathy, Selvampathy, Selvachinthamani, Kumarasamy, and Kurichikulam. The aim was not only ecological restoration but also redesigning the lakefronts as active, accessible public spaces to foster recreation, tourism, and urban life quality.

Research Objectives

The core objectives of this research are:

1. To examine the Smart City lake restoration efforts in Coimbatore.
2. Analyse the recreational tourism potential of Lakes in Coimbatore
3. To assess how these restored lakes contribute to tourism development and public recreation.
4. Discuss sustainable strategies to enhance lake tourism.

Literature Review

Lake Tourism & Urban Recreation

The study of the urban lakes has indicated that highly developed bodies of water with recreational facilities can play a major role in the local tourism and community wellbeing. Lakes also provide walking, birdwatching, boating, and family leisure activities to the visitors. Studies on recreational valuation have been carried out in Coimbatore on both Valankulam and Periyakulam lakes.

Recreational Value of Valankulam Lake

With the Travel Cost Method, an empirical study identified that the recreational value of Valankulam Lake is directly usable to assess the importance of the lake as the source of leisure and recreation due to residents and visitors to the lake with a direct use value amounting to 619.94 per visit. The visitation decisions were established to be based on their cost of traveling, income and distance to the lake.

Methodology

The given work is a collection of secondary data sources that are verified by the news sources, governmental and local reports, and peer-reviewed publications. Empirical studies on Periyakulam (Ukkadam) Lake were used to draw empirical evidence on the value of recreation and visitor preferences. A narrative approach was employed in order to integrate the evaluation of tourism potential with policy and planning considerations.

Smart City Mission and Lake Restoration in Coimbatore

Overview of the Smart Cities Mission

It is important to note that the Smart Cities Mission is a diverse project that has been executed in several different ways. <|human|>4.1 Introduction to the Smart Cities Project. One large-scale urban development initiative by the Government of India is the Smart Cities Mission (SCM), which seeks to promote sustainable, inclusive and citizen-oriented urban development. The key aspects of

this mission are focused on improving infrastructure that is required, increasing the quality of life, ensuring the environmental sustainability, and the introduction of smart technologies and systems of governance that can address the problems of cities effectively. The main components of the Smart Cities strategy can include water resource management, solid waste, energy conservation, transport, green areas, and citizen-oriented services. SCM model is founded on Area-Based Development (ABD) and city-wide strategies, which supports the planned and efficient and resilient urban growth.

Coimbatore is one of the earliest 20 cities selected due to its economic value and also due to the fact that it would provide a framework on innovative cities. Being one of the principle industrial, educational, and commercial centers of the Tamil Nadu, Coimbatore was also a part of the Smart Cities Mission with its strong economic base, high rate of urbanization, and prospects of the future development. The city, known as the Manchester of South India, plays a key role in the textile industry, engineering industry, IT industry and the MSME industry in the state. The rapid rate of population growth and urban development in the city has however brought a set of challenges which include heavy traffic and low water supply, environmental degradation and strain on the infrastructures. By using the Smart Cities Mission Coimbatore has adopted a development strategy centered on sustainable infrastructures conservation of the environment, transport procurement, and public space. Some of the key projects are the modernization of roads and intersections, smart lighting, the introduction of digital governance systems, solid waste management, and rehabilitation of open areas. Special attention has been given to the water management and restoration of lakes in cities with recognition to the ecological importance of the classical tank system of the city.

Lake Restoration Under Smart Cities Mission

The Coimbatore Smart city will be provided with an integrated plan that will open the way to relate and develop the ecosystem around the eight lakes. The city of Coimbatore is proud of having eight lakes and these are symmetrical to one another. Those include, Krishnampathi, Selvampathy, Kumaraswamy, Selva Chinthamanikulam, Periyakulam, Valankulam & Kurichi. Besides the above mentioned, the lakes will be replenished with parks, open spaces, botanical garden, open zoos which present as an added attraction. With adequate mounted floats fitted with WIFI connections the water quality of the lake will be checked at all times. Its bio-diversity will be examined in all the lakes. Besides this, exclusive walk and jogging and bicycling paths will also be developed using sky walks across the roads. Relevantly developed sewage facilities will be positioned with an eye on all the natural trains bearing sewage. Moreover, smart city will also have smart streetlights with solar technology sensors that will make every junction and streets in the Coimbatore city be more efficient with respect to transporting people hence forming smart traffic and bye-bye congestion across Coimbatore city.

Such sophisticated functions will include amenities such as proper seating, footpath, cycle lane footpath, light, bus bay, passengers shed, drinking water, sign symbol, bike parking and disabled ramp. The provision of a comprehensive environment to the pedestrians, and effective CCTV camera monitoring to assist the traffic network will be an added advantage which will be experienced in the Coimbatore Smart City.

Periyakulam Lake: Smart City Restoration

The Periyakulam Lake was included in a grand restoration project under the Smart City project of Coimbatore that used about INR 350 crore to restore 7 historic lakes. Its biggest among them was Periyakulam and was developed and desilted as well as with other facilities like walking paths

and cycling tracks around the lakefront, amphitheaters, public artwork and water sports complexes so that people could use and visit it. It has recreational and tourist facilities.

Recreational & Tourism Facilities

Post-restoration, the Lakefront Offers

- Water sports and boating i.e. speedboats and jet skis.
- Walking paths and bicycle paths to use on a day to day basis.
- Amphitheater and cultural event and performance areas.
- Sculptural art appeal to improve aesthetic value. The local visitors as well as the tourists who come to visit the lake are using these facilities and this implies multi-faceted tourism attractiveness of the lake.

Valankulam Lake: Smart City Restoration

Under the Smart Cities Mission, remodeling and beautification of Valankulam Lake had taken place with the addition of walking plazas, children play areas, non-motorized tracks, and floating decks to increase the recreational use of the lake.

Recreational Facilities & Activities

The lake has walkways and walking track that attract residents and visitors to their recreational exercises and leisure and is also a place of boating which was introduced by the Tamil Nadu Tourism Development Corporation (TTDC) and originally it generated a revenue of almost a daily basis and has however encountered difficulties. The seasonal nature gives a chance to watch birds, as the migrant pelicans and other water birds attract tourists.

Recreational Tourism Potential of Lake

Coimbatore has diversified its tourism through by means of urban lakes. In addition to the conventional temple and hill-station type tourism, the lakes offer:

- Potential of nature and eco-tourism: In Lakes: There are birdwatching towers and Natural observation points within the lakes, but in certain areas the ecological issues are still a concern.
- Water based attractions: Water sports and boating at periyakulam and previously at Valankulam.
- Cultural and community activities: Waterfronts are places where cultural performances, lights shows and season events are held.

These initiatives give tourists the incentive of staying long in the cities to keenly grasp the city areas rather than viewing Coimbatore as a hub where a tourist stops to change transit.

Periyakulam Lake Demonstrates High Potential for Urban Recreational Tourism

There are recreational facilities to have families, fitness enthusiasts, and other visiting tourists seeking leisure experiences. Water sports and boating increases day to day tourist visits, particularly on weekends and during festival days. Accessibility is also enhanced by the closeness to city centres, which in turn favor short-stay tourism. The urban leisure tourism of Valankulam is built on the infrastructure (walking, social gathering, casual sightseeing) of the location through walking tracks, floating decks, and lakeside promenades.

Sustainable Strategies for Lake Tourism

Sustainable lake tourism in Periyakulam and Valankulam Lakes needs a balanced theme which incorporates the use of environmental conservation, responsible tourism practices, and proper governance. It is important to protect the ecological integrity by using buffer fields, restoring native vegetation, and monitoring the environment on a regular basis in order to sustain biodiversity

and water quality. Nature walks, birdwatching and non-motorised boating are among the low-impact tourism activities that can be promoted to ease the ecological pressure but improve visitor experience.

The quality longevity of lakefront facilities can be ensured by means of efficient maintenance and infrastructural management, sustainable waste management systems, and green infrastructure which are all achieved through public-private partnerships. How to handle the visitor carrying capacity and reduce the activities during peak times is necessary so as to avoid overcrowding and degradation of the environment. Awareness programmes, volunteer stewardship, and involvement of local stakeholders makes community members have a sense of responsibility and enhances the effectiveness of conservation.

Also, the sustainable development of these urban lakes can be facilitated by strategic tourism planning, branding of eco-tourism, and policy alignment of the cities and tourism authorities. On a bigger scale, these measures have the potential to transform Periyakulam and Valankulam Lakes into efficient, inclusive, and environmentally friendly urban tourism destinations in addition to improving the well-being of the locals and the quality of life in the urban areas.

Findings

The paid recreational services (e.g. boating) have started making revenues and more local economic involvement is being seen. The economic studies of quantifiable recreational values also provide further support to the tourism potential of Periyakulam Lake, where in a properly marketed lake tourism, it is likely to provide a contribution to local tourism economies. Problems of infrastructure decay and waste handling have also been mentioned as issues in maintenance and thus have contributed to reduced visitor satisfaction. Planning of sustainable tourism must consider environmental conservation, in particular, migratory birds and biodiversity around the lake. Better maintenance and safety facilities (e.g. fencing, lighting, waste, etc.) will make the experience of the visitor more positive and bring more tourists. The presence of a lake can be increased as a recreation spot through good marketing and event programming like birding events or cultural evenings. Café, guided ecotour and boats can be sustainable operated as public-private partnerships.

Recommendations

Based on the analysis, this study suggests:

- Integrated ecological planning: Urban lake restoration should prioritise natural vegetation buffers and wildlife habitat conservation.
- Sustainable tourism models: Develop revenue-sharing and community-based tourism schemes to support ongoing maintenance without overdependence on municipal funds.
- Mixed use planning: Design lakefronts to host cultural, educational, and eco-tourism activities to spread visitor engagement across seasons.
- Public participation: Engage local communities and NGOs in lake monitoring and stewardship to foster collective ownership.

These steps can strengthen both tourism outcomes and ecological resilience.

Conclusion

The case of Coimbatore and its experience regarding the urban lake rejuvenation process within the framework of the Smart Cities Mission illustrates a transformative concept of the development of the public space and tourism. Not only have the re-restored lakes boosted the beauty of the ecology, but also served as pleasure spots, which help in urban life, well-being, and economy.

Nonetheless, to maintain these gains, there is a need to have a balanced solution, which involves environmental conservation, marketability and socio-economic custodianship. Through strategic planning, urban lakes can remain significant to socio- economical and environmental future in Coimbatore. Coimbatore Periyakulam Lake has been changed to a major urban recreation and tourism center after specific efforts to restore it. The available empirical research shows that restoration of lakes improves recreational payoffs and visitor interest which are essential elements in lake tourism potential. To achieve any long-term growth, it is imperative to incorporate the elements of environmentally sensitive tourism plans, community involvement and strategic marketing. Future studies can be based on visitor segmentation, willingness to pay attractions and comparison studies with other urban lake-tourism sites. The lake has considerable potential on the creation of lake tourism in Coimbatore based on the recreational facilities, picturesque location, and the presence of biodiversity at some rare occasions. Nonetheless, maintenance difficulties, the environmental management problems, and service delivery do require issues in order to capitalize on this potential fully. There is strategic planning that can help Valankulam become more recreational, sustainable, and communal to transform it into its next stage of development as a local recreation and a cherished part of the urban tourism landscape of Coimbatore.

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