

# WATER TOURISM PLANNING AND INFRASTRUCTURE DEVELOPMENT IN VICINITY OF STATUE OF UNITY

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**Abstract** - Tourism has been a major phenomenon with immense opportunities for revenue and employment generation all over the world. Tourism sector contributed USD 8.8 trillion to the global economy and it accounted for 319 million jobs. In India also, tourism has emerged with largest service industry contributing to 9.2% of India's GDP and 8.78% to total employment in India. India is blessed with rich history and unparalleled diversity which serves as a great advantage for tourism development. The natural landscape of India gives immense opportunities for tourism development. The main aim of this paper is to analyze the tourist spots in the vicinity of Statue of Unity site and to make necessary planning recommendation for the same. In this research qualitative descriptive method is used and field survey was conducted to gather data. This paper represents the growing tourism development pattern and defines goals and objectives in connection with the establishment of tourism infrastructure. The tourist data are collected from Statue of Unity ticketing counter and GIS maps are generated to suggest future planning recommendation.

**Key Words:** Bharuch Region, Infrastructure, Narmada River, Planning, Recommendation, Statue of Unity, Water Tourism

## 1. INTRODUCTION

India is blessed with variety of natural landscape and offers a great advantage for adventure tourism, eco-tourism and water tourism development. [1] Tourism is the emerging service sector industry in India which can generate rapid economic growth by providing employment opportunities, foreign exchange earnings and infrastructure development. The tourism sector accounts for 9.2% of India's GDP and becomes the 8<sup>th</sup> largest country in terms of contribution to travel and tourism GDP. Tourism generated 42.7 million jobs in 2018.[2] Recognizing the importance of tourism, government is also taking active steps for development of tourism by taking various initiatives such as formation of Adventure Tourism Guidelines, SAGARMALA project for cruise tourism and various other promotional schemes for benefiting the tourism sector.[2] Narmada river abounds with beautiful scenery and historical sites which allows higher number of possibilities for tourism development but in spite of having rich natural resources and beautiful sites along the riverside area the stretch is less researched and tourism in this area is not yet developed. The stretch of river Narmada from Bharuch to Statue of Unity site is selected for tourism development. Today adventure tourism is getting

popular around the world and the stretch selected for study has great potential to be developed as water tourism. Water tourism is usually supported by facilities and tourist activities related to the water activities while enjoying the beautiful scenery around the watershed area.[3] Water tourism is a type of adventure-based tourism which targets area of natural or artificial water surface including riverside and lakeside area. Activities in water tourism involves tours to pilgrimage destination and sightseeing of historical monuments, national parks, forest campsites etc. along the course of rivers, canals or lakes. The tourist can sail through houseboats and cruise to different destination. So, it is necessary to have planning strategy for developing the stretch as water tourism destination product. It needs to be planned as multiple objective and technology can be a key enabler for planning of water tourism product as multi variate project. In this research open source software QGIS is used along with sentinel and google images for analyzing the area. The images were downloaded from USGS imagery and maps are generated for better understanding of topography. GIS helps in identifying various tourist spots by carrying out buffer analysis of the study area. It is used to analyze the accessibility of the spots and for preparing the tourism circuit.

## 2. AIM AND OBJECTIVES OF STUDY

To develop Bharuch to Statue of Unity stretch of Narmada river by recommending and planning necessary infrastructure for tourism using QGIS software.

- To identify tourism spots within study area
- To analyze tourist destination spots having potential to be developed as water tourism destination
- To prepare GIS maps and carry out buffer analysis of the study area
- To recommend necessary infrastructure planning proposal for tourism development.

## 3. STUDY AREA PROFILE

Narmada is the largest west flowing river which rises from Amarkantak mountains in Madhya Pradesh and traverse through Maharashtra and Gujarat. Narmada river is also known as Rewa. It is the fifth largest river in the country and the largest one in Gujarat. In Gujarat it meets with the Gulf of Cambay near Bhadbhut village. The total length of the river from source to sea is 1312 kilometers.[4] Narmada river abounds with beautiful scenery such as wildlife sanctuary,

eco-tourism sites, religious sites, cultural heritage sites which allows higher number of possibilities for tourism development. The area of study is focused on Bharuch to Statue of Unity stretch of Narmada river and surrounding area of the stretch. The stretch of 80 kms lies between Bharuch and Narmada district which includes Statue of Unity and Sardar Sarovar Dam site. The popularity of this region is increasing since the Statue of Unity is constructed. The statue is constructed with world class infrastructure which is attracting number of tourists from all over the world. Mobility of tourist flow is intense during weekends and public holidays. Due to increase in tourist footfall in this region the demand for tourist spots development is increasing in the nearby region. This study identifies the tourist spots which are nearby the Statue of Unity site so that tourist can easily enjoy other tourism products while visiting the Statue of Unity site.[5] The index map of study area created using QGIS for better understanding of area is shown in the below figure.

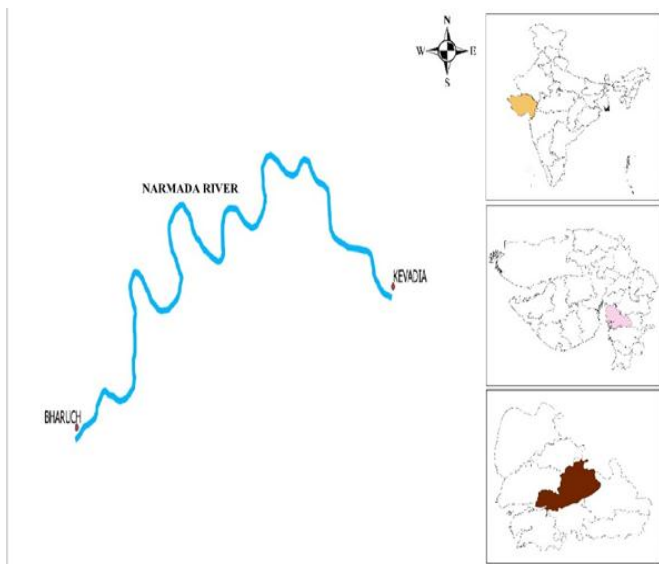


Figure 1 Index Map of Study Area

#### 4. METHODOLOGY AND DATA COLLECTION

The data from Sardar Sarovar Narmada Nigam Ltd. (SSNNL) and Statue of Unity ticketing counter is collected regarding basic details of tourist spots, visitors' profile and upcoming tourist projects in the study area. Sardar Sarovar Narmada Nigam Limited 2019 visitor profile report shows the average tourist footfalls in the Narmada region which are as below:[5]

Table -1: Tourist Data

Weekdays	7000-8000
Weekends	15000-20000

For further research and data collection field survey was conducted using qualitative descriptive method. This method is simple technique for collecting the data and analyzing the existing scenario. Qualitative descriptive method gives a detailed analysis of the current scenario by analyzing various

planning aspects which helps in providing better infrastructure planning proposal. In this method various questionnaires were developed and field survey was conducted by filling up the google form. The visitors were interviewed and 42 responses were collected from the different tourist spots. The respondents include experts from various government departments, experienced tourists, academicians and research scholars from the field of urban planning. This method is used to investigate that if water-based tourism cluster will be suitable for further planning and development. The survey addressed various questions regarding mode of transportation, origin of the journey, tourist age group and repetition of visit to acknowledge the cluster development and to define the potential of resource availability in the region. This study attempts to estimate that how recreational user demand is associated with various other factors such tourist accessibility, accommodation, availability of transportation, age group etc.

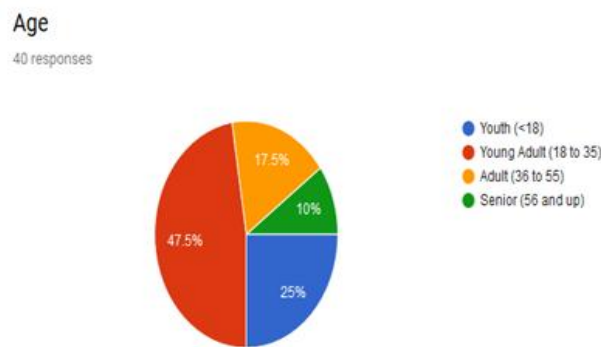


Figure 2 Tourist Age Group

#### Where Have You Come From?

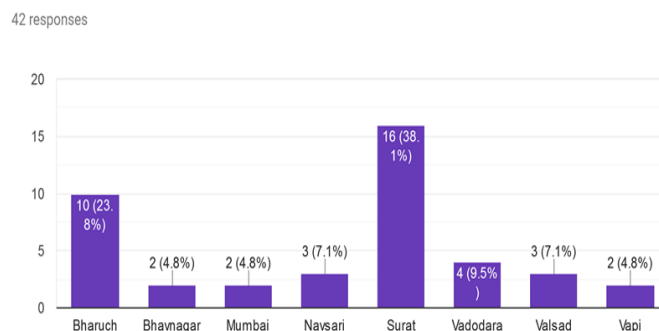


Figure 3 Tourist Origin

### How Did You Arrive?

42 responses

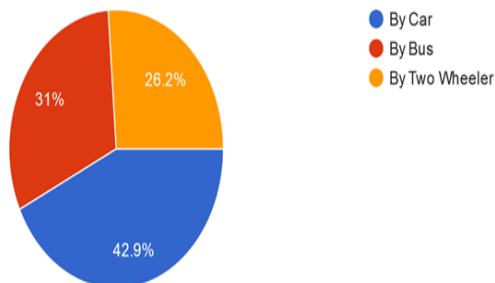


Figure 4 Tourist Mode of Transport

### 5. BUFFER ANALYSIS OF STUDY AREA

Buffer analysis of the 80 kms stretch is done using QGIS. Buffer analysis helps in identifying the tourist spots in the surrounding area of the stretch. To propose tourism circuit along the riverside area of selected stretch buffer analysis plays a crucial role in analyzing the riverside area. It helps in identifying the spots in the vicinity of river lane so that while cruising along the lane tourist can get easy accessibility to the sites. Various tourist spots are selected by conducting buffer analysis of 1 km on each side of the study area.

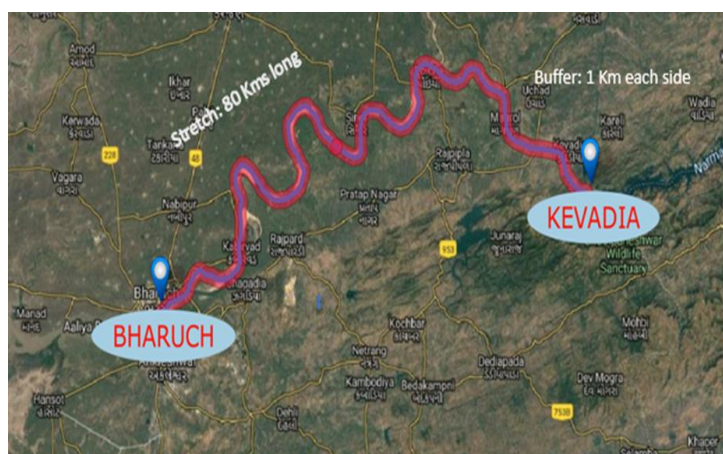


Figure 5 Buffer Analysis of Study Area

### 6. IDENTIFICATION OF TOURIST SPOTS

To make the necessary planning recommendation for water tourism development various tourist spots having potential to be developed as water tourism destination and are in the vicinity of the riverside area are identified. Tourist spots are digitized on sentinel image downloaded from USGS server using QGIS software. By digitizing the spots on it gives a broader view for a planner to prepare a tourist circuit in study area. After identification of spots field survey was conducted using google form questionnaire and data for infrastructure planning is collected. The results of survey

give better understanding of existing scenario and based on that recommendations for development of tourism destination is proposed.



Figure 6 Identification of Tourist Spots using QGIS

### 7. CONCLUSION AND RECOMMENDATIONS

In this research the survey was conducted to collect primary data and various other data related to visitors profile are collected. From the research and survey, it is concluded that due to construction of Statue of Unity there is drastic change in the physical landscape and economic landscape of the region. The change in physical landscape such as settlement pattern, better connectivity and transportation brings a big change in the economy of the region and leads to economic development of region. Improvement in economic landscape leads to change in structure of local economy and livelihood opportunities. So, the Statue of Unity becomes a growth pole for the development of neighborhood regions. In this paper evolution pattern of tourist landscape in the vicinity of Statue of Unity site is studied and from survey data it is concluded that the various identified tourist spots has a great potential to be developed as water tourism cluster. For further research and tourism cluster selection various literature such as tourism policy, books, guidelines and research papers were studied. From the literature review and field survey this paper analyzes interrelation between water and tourist spot as it increases the attractiveness of a destination.[6] In this research to analyze the existing scenario and for planning of water tourism destination various GIS maps were generated using QGIS software and buffer analysis was carried out within 1 km of area. After preparing maps and collecting qualitative data various planning recommendations were made which are as follow:

- Identified tourist spots are found to be lagging in basic amenities and infrastructure so various necessary infrastructure such as proper

accommodation facilities, toilet facilities, drinking water facilities, parking, restaurants and cafeteria are need to be developed. To developed the area as water tourism destination it required special infrastructure and the infrastructure development should not be limited to Government grants rather private participation should be involved. At Kevadia site water skiing, boating, kayaking can be proposed.

- Chanod temples and Gayatri temple has great potential to be developed as pilgrimage tourist drive. Ghats can be developed and religious fairs can be organized to show its cultural and religious importance. Various historical monuments are there near Chanod temples which are need to preserved using rehabilitation techniques.
- Kabirvad is small river island in Narmada river located in Bharuch district which can be developed as major water tourism destination by proposing water activities such as speed boating, kayaking, canoeing and sailing. Kabirvad island lags with basic infrastructure facilities which is need to be proposed. The island can be developed as eco-tourism destination by developing tree houses and campsites on the island.
- Nareshwar is the place situated on the banks of river Narmada and associated with the saint Rang Avdhoot Maharaj. This place is famous for its beautiful temples and lakes. The major attraction of Nareshwar is temple which is situated on sandy river bank of Narmada. This site has great potential to be developed as water tourism destination by proposing various water activities.
- A water circuit can be proposed from Bharuch to Statue of Unity site so that tourist can move all to all the destinations identified in the vicinity of Narmada river by cruise service and by sailing in Narmada river they can reach to the world largest statue in Kevadia.

Command area between river Narmada & Mahi - Phase - I," p. 2017, 2017.

- [6] C. Morar and A. C. Pop, "Water, tourism and sport. A conceptual approach," *Geoj. Tour. Geosites*, vol. 18, no. 2, pp. 249–258, 2016.

In this paper various sites for water tourism are identified using GIS and various recommendation were made using the data collected from qualitative descriptive method.

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