

A GEOGRAPHICAL STUDY & POTENTIALITY OF RIVER TOURISM AS AN ALTERNATE SOURCE OF INCOME IN DOOARS REGION OF WEST BENGAL, INDIA

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RESEARCH ARTICLE



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Abstract

River Tourism activity is popular since 1950s. Nowadays it is one of the attractive adventurous activities in tourism sector. River water resources are utilised for recreational purposes as white water rafting, swimming, fishing, boating, kayaking, and cruising. With regard to cited views the local community should have proper awareness associated with river tourism activity which has tremendous opportunity for their economic growth and social prosperity. The present study has tried to find out the prospective of river base tourism activities in Dooars region which has spectacular landscapes, unique geo-morphological arrangements, and incredible drainage system. All the components have been taken into consideration to determine the potential sites for river base tourism in the study area. Primary data was collected from the visitors and it has been analysed through numerous statistical techniques. Most of the respondents fully agree that the destination has high prospects in terms of river base tourism. Additionally, environmental aspects are also a challenge for the implementation of water tourism in the destinations. In the conclusion the major problems related to the river tourism and proper planning has also been discussed elaborately.

Keywords: *Adventurous, Recreational, Opportunity, Spectacular, Landscapes*

Introduction

The entire earth is covered with 71% of water and out from this portion 3% of water is fresh and drinkable which are mainly obtained from lakes, ponds, rivers, and ground. River is an important source of clean water comparatively in the globe. As a matter of fact most of the river continuously flows from high elevation to lower belt which is termed as Perennial River. The Himalayas and Mountains are the largest source of fresh water supply in the world (Bandyopadhyay, 1994). Also the drainage water plays a significant role in terms of economic, socio-culture and sustainable development of the area, place, major landscape or country. From the very beginning of human civilization, people always tried to establish an active relation between river and their settlement (Cooper, 2009). In the ancient time when we hear about the narration of Herodotus who was travelling to Egypt in 450 BC, described that "when the Nile overflows the whole of Egypt becomes a sea, and only the towns stick out above the surface of the water" (Casson, 1994). Keeping in mind all the early settlements were in fact developed in and around the area based on a river side, Harappa and Mohenjo-Daro civilization are the greatest example that came into existence on the river bed side. Over time there is a transformation of utilization river water in terms of river boat casinos which converted into gaming purposes for the American tourist (Hsu, 1999).

Water or river is one of the most attractive tourist destination, it also provides transportation facilities and other means of economic prosperity all over the world (Malcolm, 2009). The developing world's gradually trying to establish a sustainable environment and for this purpose there is a needs for the promotion of rural or eco-tourism which are also related with river tourism. The availability of water activity always gives an immense pleasure to the visitors in terms of river tourism expansion. There is a positive relation between outdoor recreational tourism activity and the impact of socio-economic stability (Hjerpe & Kim, 2007).

Now to focus on the prime issue, India is largely well-known country in terms of tourism industry in the entire world. Apart from different forms of tourism industry, river/water tourism is proven to be attractive, lucrative and worth to the tourist if properly guided not only here but in any parts of the world. In India especially West Bengal and Kerala are the province/state investing huge capital to promote river tourism. Although there is a negative impact on water for the implementation of river tourism but the satisfaction of the tourists towards water activity is unquestionable (Varughese, 2013).

In the present days the trend of maximum travellers have been observed and seen that they mostly opt for expanding interest in river sites for retreat having an experience of comfort and lighten up the free time in the river side destinations (Kumar & Sajjani, 2020). Primary reason behind- there is plenty of natural resources around the river and related various types' of activities. However, river water can be utilised in sustainable ways where locale people/dwellers can get enormous opportunity for the economic, environmental and socio-cultural benefit. According to Undang-Undang-Republik, Indonesia, "the river water resource can be arranged completely and comprehensively with the sustainable ways for the betterment of the people." So it is true that the role of water tourism for the wellbeing of livelihood through sustainable use of water and its resources is absolutely exceptional (Fachrudin & Lubis, 2016).

Objectives

The present study has identified some potential sites for the development of river tourism and some proposed plans has been executed for more tourists' attraction. The important objectives of the study are:

- To identify the present river tourism sites in the study area.
- To determine the opportunities for the river tourism activities.
- To know about the tourist perception on river tourism.
- To find out the problems and challenges associated with river tourism.

Study Area

The present study has been conducted in 'Dooars' the 18 specific areas which means door or region which act as a gateway to Bhutan from whole North-Eastern states of India and Sikkim. Dooars comprises Jalpaiguri and Alipurduar districts of West Bengal. The region has been divided into two broader parts, in the East it is called Assam or Eastern Dooars and in the West or in Bengal region it is called Dooars. Contemporarily Dooars is located at 26°30'N to 27°0'N and 88°E to 90°E covering an area of 6227.89 sq.km. Dooars has stretched by 150 km/72 km from river Teesta on the West to river Sankosh on the East, over a span of time. This is the place where environment has kept its doors open for the nature lovers. Dooars is a large combination of dense natural forests, several wildlife sanctuaries, interwoven with lush green tea gardens and the foremost and most attractive nature's gift 'rivers'. The region has plenty of perennial and non-perennial rivers around namely Testa, Torsh, Jaldhaka, Kaljani, Murti, Sankosh, Dyna, Raidak, Lish and Ghish. All these rivers originate from the Himalayans & Mountains flowing Southward direction and which finally enters into the Bangladesh.

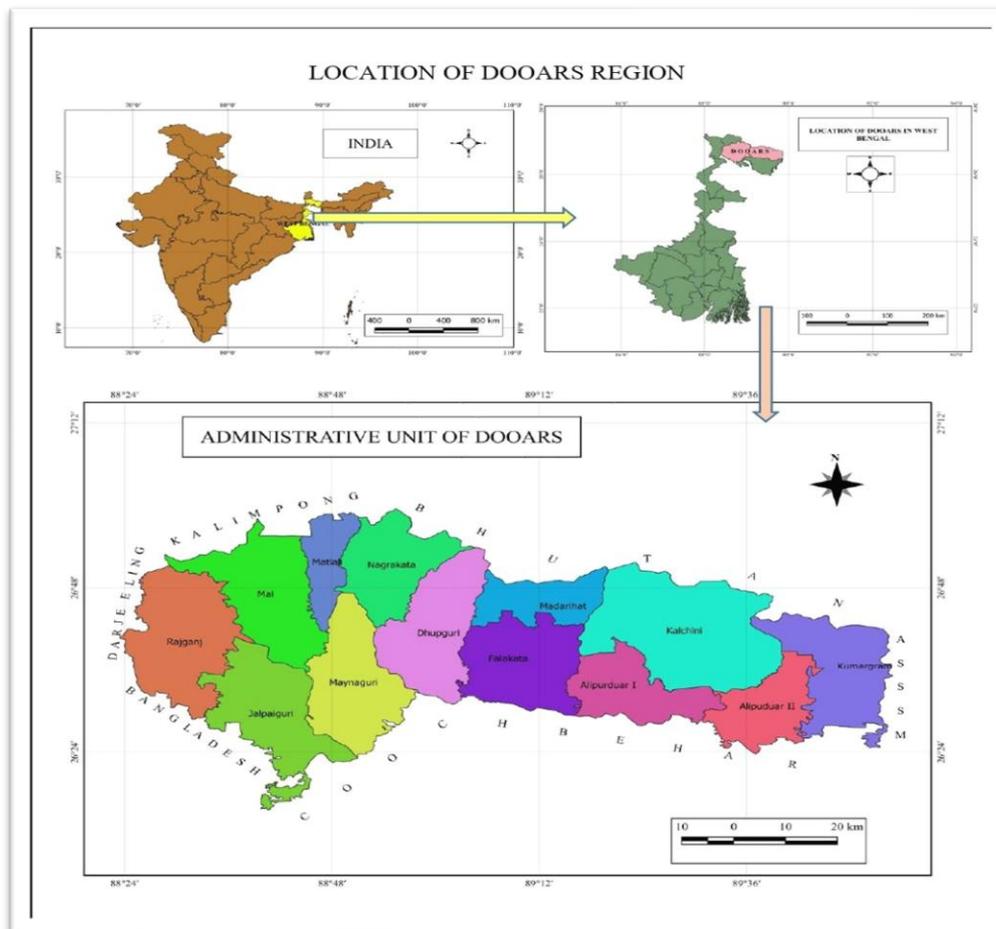


Fig. 1: Location of Dooars

Research Methodology

The main purpose of the study is to find out the potentiality of River Tourism in Dooars region. To fulfil the objective the primary and secondary survey has been conducted. The data has been analysed applying quantitative research method. The primary data was collected from five selected destinations by conducting a questionnaire survey. The observation method was also applied to obtain various physical and non-physical data. To ensure the objective of the study a suitable questionnaire was prepared to know the visitors' opinions on the potential of the river tourism industry in Dooars region. Total of 105 random probability sample surveys has been conducted from Joyanti, Raimatang, Murti, Lal Jhamela Basti, and Gajaldoba. The opinion of the visitors has been rated using a Likert scale from 1 to 5 (1 represents- Strongly disagree and 5 indicates- strongly agree). All the surveyed data were inserted into IBM SPSS 20 software and analyzed with suitable statistical techniques.

Secondary data have been collected from different sources and concerned Departments of West Bengal Tourism Development Corporation (WBTD), Department of Forest, and Department of Irrigation, News articles, Web sources, books, and journals.

River Systems of Dooars Region

The presence of Himalayas & Mountains play a significant role for the formation of rivers and its tributaries which effects on the creation of magnificent topographic, hydrological, and environmental regimes in an area (Malcolm, 2009). Ganga, Brahmaputra and Indus are the major river system in Himalayas. In the present study area- Teesta is the major river that originates from Pahunri glacier of Eastern Himalayas at an elevation of 7068 meters and joins into the Brahmaputra river at Phulchhari Upazila in Bangladesh (Wikipedia, 2021). Lish, Gish, Jaldhaka, Daina, Toorsa, Kaljani, Pagli, Raidak and Sankosh etc. are the other important rivers, originated in the Himalayas that finally passes through the Dooars region. The fluvial characteristics of Dooars Rivers are extremely unpredictable. All the rivers on their course forms a different spectacular landscape which has unlimited potentiality to attract the strangers.

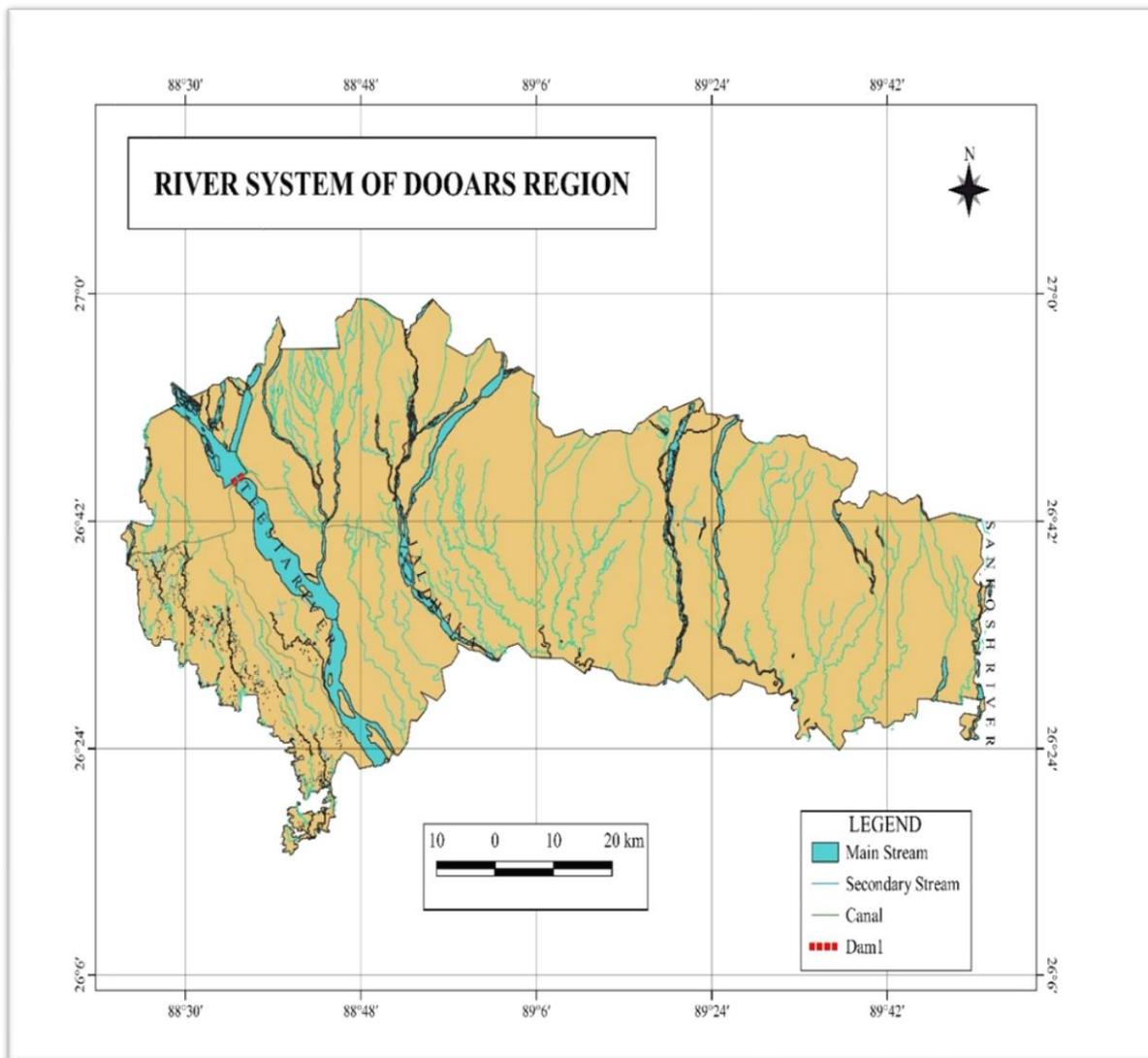


Fig. 2: River Network of Dooars Region

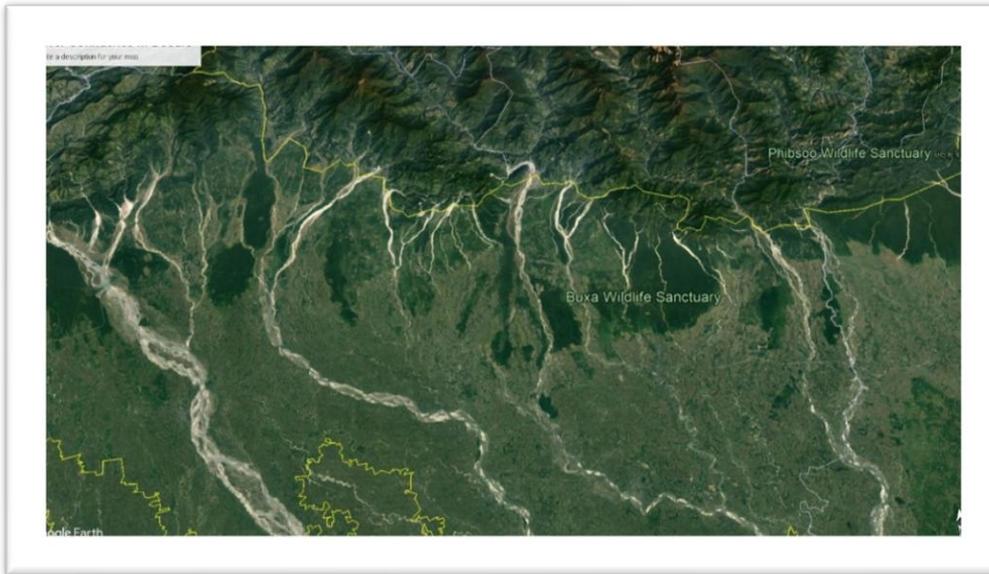


Fig. 3: River Network of Dooars in Google Earth Image

River base Tourism Activities

“River-oriented tourism activities are based on waterways as well as on the tourism based opportunities offered by the surrounding landscape including built and natural features” (Cooper, 2009). The popularity of river tourism and its activities are well known among nature lovers for a long. River tourism embodies different touristic activities in that visitors can dynamically participate in the river and its catchment area. River tourism means numerous activities like river rafting, fishing, boating, sailing, and cruises on the bank of the river to attract visitors (Gupca, 2014). The river offers extensive opportunities in terms of recreational as well as socio-economic activities and on the basis of the compatibility index it has five types of crafts principal like canoes, fishing boats, runabouts, houseboats, and cabin cruisers (Becker, 1979). There are many countries having tremendous potential to flourish in river tourism which has spectacular beauty, leisure activities, adventures, and heritage sites with ecological diversity within the river catchment area.

The rivers at Dooars are the home of its faunal resources (Patra & Datta, 2010). There are numerous fishermen who are directly dependent on the river. Dooars is full of faunal resources in terms of the research study; the Zoological researcher can also contribute to the tourism industry. There are several perennial and Non-perennial Rivers flowing through this entire region and all the rivers form a spectacular landscape on the foothills of the Himalayas as well as in the plain region. The study of the fluvial landscape is very much attractive to the school, college, university students, and research schoolers as well.

Table 1: Major existing and potential river base tourism activities in Dooars region

Name of the River	Type of River	Major tourist Spots	Existing Activities	Potential Activities
Teesta	Perennial	Gajoldoba	Boating, Fishing, Bird watching	River Cruise, Speed boat, Swimming, Bathing, River exploration, kayaking
Jaldhaka	Perennial	Bindu, Jhalong	Scenic beauty, river bath, photo shoot, camping,	River rafting, fishing, landscape study,
Murti	Perennial	Murti	River bath, scenic beauty, photoshoot	River side camping, fishing
Joyanti	Perennial	Joyanti	Scenic beauty, boarder line river, bathing, photoshoot, mohakal temple	Bathing, fishing, landscape study, exploration of mining sites, Bhutanghat,
Torsa	Perennial	Jaigaon	Border crossing, picnic, scenic beauty	River site camping, eco-tourism, moderate rafting.
Kaljani	Perennial	Pashakha	Picnic, scenic beauty, camping	Rafting, eco-tourism, kayaking, river exploration.

Source: Based on field observation.

River Tourism Activity

- **River Exploration:** River can be utilised in numerous way for the tourism purpose. The fluvial landscapes are much rough and not easy to access. There is an opposite relation between the landscape and visitors attraction. More the rough terrain higher the attraction and to reach an inaccessible place along the river course, exploration is the only option. Tourist guide can take the strangers into the landscape and interpret the topography or wildlife in various languages. This is an adventurous tourism activity generally young guests are more attracted.
- **Kayaking:** This is a fun water activity where one double bladed paddle small vessel is used. Initially this vessel was used for the hunting purposes in the Arctic region but it is much popular in the water base tourist destinations nowadays. River Ganges, Mandakini, Bhagirathi, Beas, Indus and Zanskar etc. rivers are popular for Kayaking.
- **River rafting:** The rough high-velocity flow of river water is used for the recreational purposes since 1950s. River rafting is an outdoor adventure activity for the tourists. This white water adventure is a team activity and the participants can race by rafting. In river rafting inflatable rafts are used. Most of the Himalayan Rivers has the potentiality for the rafting activity. But presently limited rivers are used for this purpose.
- **Fishing:** Fishing in the fresh water or salted water is also associated with recreational water tourism activities. Rivers, ponds, lakes are the main source of fresh water. Fishing activities are amusing and enthralling for the visitors.
- **Eco-Tourism:** The nature base tourism activity has the potentiality to reduce environmental degradation and eco-tourism is one of them. River sites are the ideal points to promote eco-tourism and its' environmental friendliness. The fastest growing tourism worldwide is as well a threat for the environment in terms of deforestation, water pollution, soil degradation and air contamination etc. Eco-tourism can reduce those types of challenges and it will certainly help to prosper the tourism and as well as for the conservation of nature.
- **Boating:** Boating is astounding feels for the travellers. To explore nature and scenic beauty, boating is the seamless mode. Paddling along the fresh water and stay in between the nature for a while is absolutely priceless. Shikara ride of Dal Lake, Cruise boat of Sundarban, Back water boating of Kerala are the major boating destinations in India.
- **Biking:** Biking beside river bed is an adventurous recreational activity associated with water tourism. Most of the non-perennial rivers are used for this type of sports. Some countries organise adventure bike rally on the river sites where bikers can take part with their suitable bike and experience the rough terrain biking.

Potential sites of River Tourism

To determine the potential sites of River tourism various parameters have been taken into consideration. The most and significant parameters are

- River and its scenic beauty.
- Present tourist inflow in the destination.
- Existing infrastructure for the tourists (Hotel, Restaurant, Connectivity etc.)
- Awareness of the Local community.
- Opportunities available for the implementation of river tourism activities (River rafting, Boating, River bed camping, Fishing etc.)
- Tourist's behaviour towards River tourism.

In the present study area there are plenty of Potential River tourism sites which has been identified on the basis of above mentioned parameters-

- **Samsing:** The place is located 17kms from Chalsa at an elevation of 3000fts. The river Murti with high water velocity and the landscape in the place is so stunning that tourists would have a mind captivating time with their friends and family members. There are numbers of gigantic boulders deposited on the river beds which are utilised for the river stone adventure camping.
- **Hilla:** River Jaldhaka from left side and Sotikhola from right side of Bhutan hills meet together at this place. Both the rivers are demarcated for Indo-Bhutan international boundary which is a prime attraction to the visitors. In the right bank of Jaldhakariver the most popular wild life sanctuary Chapramary has spread its amazing beauty. There is a sudden change of elevation at this point which also accelerate the beauty of the place. Although the place is untouched by the strangers till date but there is a tremendous opportunity underlying for the River Tourism development at the place. River camping, Moderate River rafting, Picnic, Fishing etc. are the major activities which can be introduced for the promotion of river tourism in the place.
- **Lal JhamelaBasti:** This virgin destination is located at indo-Bhutan border near looksan village of Jalpaiguri district at an elevation of 320 metres. River Daina enters into India at this place. The splendid sight of Bhutan hills standing just in front of creates a mesmerizing environment to attract the visitors in the destination. The river Daina and its landscapes are amazing and can be promoted with respect to River Tourism. Fishing, Camping, Rafting, River landscape's Study, River bath etc. could also be introduced for the river tourism activity. There is a hanging bridge on the Daina River which connects India and Bhutan, an attractive feature for the tourists.
- **Lankapara:** Lankapara is an exemplary example of the marvellous creation of nature. Numerous small and large rivers originate in the Bhutan Mountains and flow through this region and finally enter into the plains of Indian sub continents. Titi and Bangri (Local name) rivers are the most mesmerising among all the other rivers. Numerous small and large boulders flowing from the hills have accumulated here and created an remarkable landform. The Eastern side of the place Titi forest

is attached with the most attractive human settlement Totopara. The fast flowing Bangri and Titi rivers produced many erosional landscapes which are the sources for the research studies. Picnic, fishing, Moderate River rafting, Rappelling, etc. could be encouraged for the river tourism activity.

- **Raimatang:** In the North Western part of lush green Buxa Tiger Reserve is located in a virgin forest of village Raimatang. The Indo-Bhutan border is within walking distance and it has exceptional flora and fauna assets. The mesmerising scenic beauty, lofty Mountains, lavish tea gardens, and the attractive fast flowing river Raimatang crafts the place like an angel. There are many tributary rivers that joint into the Raimatang River. Although rivers are rain feed but together it takes the leap of other beauty. The fluvial depositions are so active here that ultimately developed spectacular river depositional landscape at the place. River bed exploration, picnic, river camping, rock climbing, Adventure motor cycle race beside river bed could be introduced for the implementation of River Tourism activity.

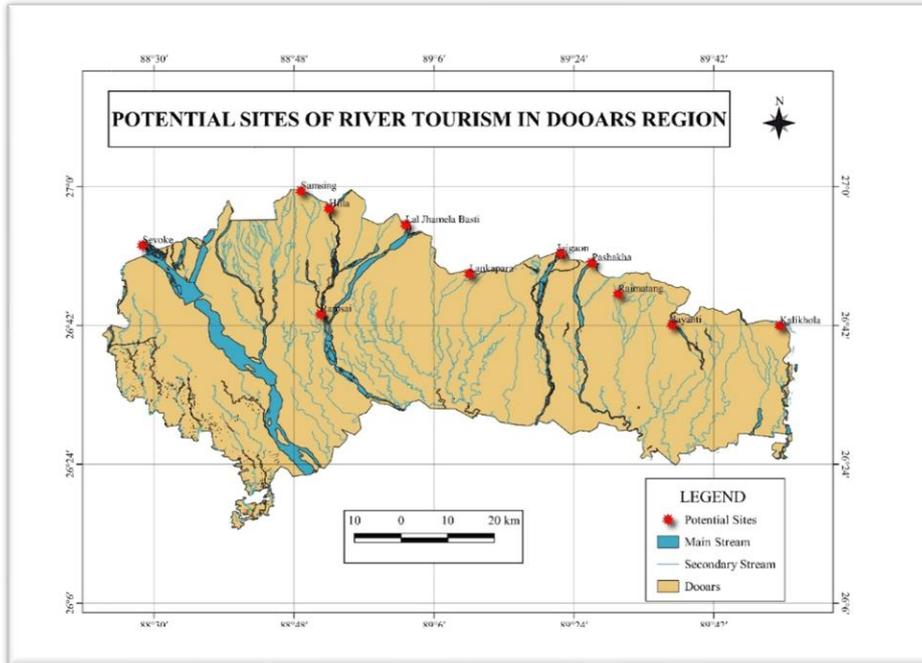


Fig. 4: Location of different potential river tourism destinations

- **Kalikhola:** This is a place of spellbinding natural landscape with lots of rivers confluence. The name kalikhola derived from the name of “Kalikhola” a tributary of Sankosh River. The splendid Himalayas of Bhutan is just in front of the destination which also gives a breath-taking sensation to the strangers. The confluence of Sankosh and Kalikhola is one of the most attractive places where triangular boundary of North-West Part of India, Bhutan and Assam borders is located. Most of the tourists include this place in their itinerary.

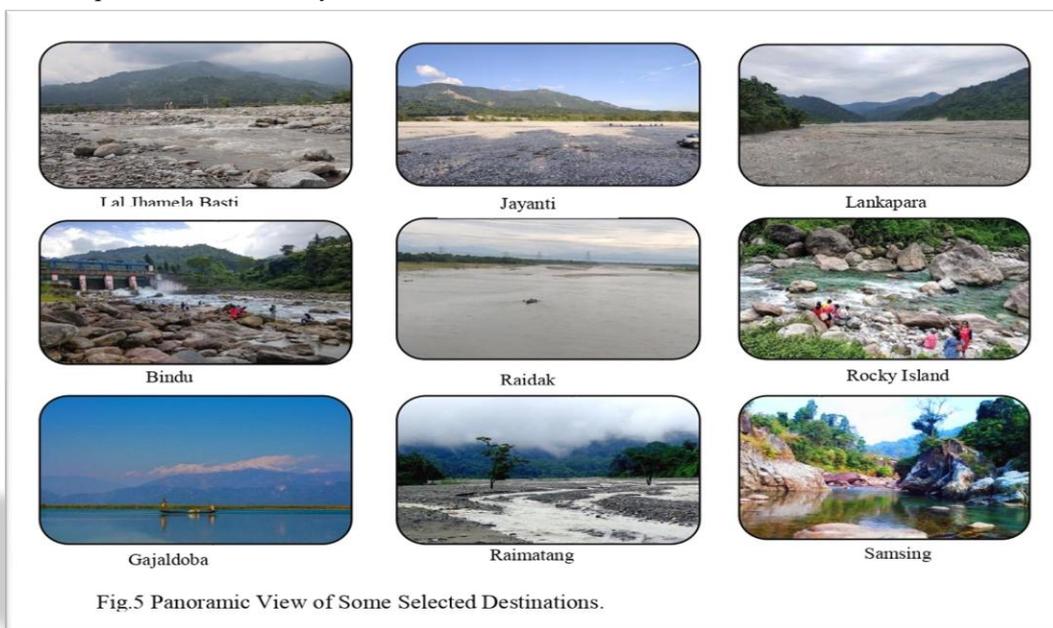


Fig.5 Panoramic View of Some Selected Destinations.

➤ **Jaigaon:** This is the main overland point that connects Bhutan and India. The other side of Jaigaon is known as Phuentsholing, one of the well-known city of Bhutan. The place is located at the foot hills of Bhutan Himalayas and plenty of rivers originates from the up-hills and flows towards North and North Eastern direction which finally enters into India. River Toorsa is one of the major river, passing through the lower end of the city. Jaigaon is one of the recognised destination for the visitors in Dooars region. This is the only entry point to visit Bhutan through West Bengal. Every year there is a huge number of tourists that visits the destination but there are no such types of activity which tourists can take part and pay out for their leisure time.

River tourism activity is one of the options which can be promoted in the place. Toorsa is a fast flowing river over here which can be utilised for the rafting purposes. On the other hand river camping can be set up at the lower part of the city.

➤ **Ramsai:** The village Ramsai is situated in the Eastern side of Gorumara National Park. River Murti, Jaldhaka and Daina joint all together at this point. Presently Ramsai is an eco-tourism spot which provides jungle safari and watch towers to brew the panorama of forest to the visitors. The place has become much popular in the recent years. As there is an opportunity to utilise the river confluence in terms of water tourism activities like fishing, boating, picnic spot, river camping, photography etc. The local community can get a source of income and can evolve to the standard of life and also can achieve financial support.

Result and Discussion

River Tourism has a great latent potential for the economic growth of the region. The role of tourist for growing tourism industry in an area is undeniably significant. To determine the behaviour of the tourists towards river tourism potentiality in the study area, a questionnaire sample survey has been conducted with 13 variables and the collected data were analysed in the table No.2

Table 2: Mean Value of Different Variable for River Tourism Potentiality

Variables	Mean	Std. Deviation	Variance
V1. River is the main attraction in Dooars region.	3.53	1.110	1.232
V2. There is an abundant opportunity on river tourism in Dooars region.	3.85	1.246	1.553
V3. Rivers should properly utilise for tourism purpose.	3.80	1.259	1.585
V4. Tourism industry disturbs the water ecosystem.	2.34	1.307	1.708
V5. The Dooars rivers have unique beauty.	3.90	1.156	1.337
V6. River tourism can improve socio-economic conditions of the local people.	4.03	1.156	1.336
V7. River water can be utilised for different recreational purposes.	3.91	1.272	1.618
V8. Tourists are very much aware about river tourism.	2.41	1.253	1.571
V9. Major tourists' destination situated at river side in Dooars region.	2.45	1.593	2.538
V10. Presently the rivers are properly utilised for tourism purpose in Dooars region.	2.20	1.490	2.219
V11. Local people are aware about the river tourism in terms of water pollution.	2.66	1.254	1.574
V12. All the rivers are properly maintained.	2.33	1.335	1.782
V13. Govt. is very much active to promote river tourism.	2.59	1.419	2.013

Source: Based on Primary Data (2025).

There are 13 variables have been selected to collect data from the visitors. All the variables are related to the potentiality of River Tourism in Dooars region and the variables are measured using 5 point Likert scale with a range, 1-Strongly Disagree to 5-Strongly Agree. There are 105 respondents who have given their views on the following variables and in case of variable one (V1) the respondents agree with some extent (3.53) toward the attraction of river base tourism. On the other hand the opportunity of river tourism has been scored as 3.85 and the utilization of river for tourism purpose scored 3.83 which indicate visitors are in agreement with these variables (V2 & V3). As river tourism is very much related with the environment, the ecological balance is a prime concern all over the world. The present study area has exceptional according to the visitor's point of view. Most of the visitors are not in agreement that water based activities can disturb the ecosystem of river, if it is used in sustainable ways. But as far as awareness towards River Tourism is concerned most of the respondents are not cognisant about this form of practice and less than 50% respondents (V8-2.41) are only familiar with this form of tourism activities.

As many respondents agreed with the uniqueness of Dooars Rivers (V5), the economic opportunity to the local people (V6) and the use of river for recreational purposes (V7) is absolutely incredible. The entire 3 variable scored highest value i.e., 3.90, 4.03 and 3.91. These values are significant in promotion of River Tourism.

Most of the respondents do not agree with the locations of present tourist spots near river sites as a major attraction points (V9-2.45), and at the same time awareness of the local community (V11), and utilisation of river for tourism purposes (V10) also seems not satisfactory for the visitors. All the components scored very less (2.66 and 2.20). The maintenance of the river (V12) and the role of government (V13) are not up to the mark according to the respondents.

Finding

Based on the primary data collected from the 105 respondents the opportunity of river tourism in Dooars region is enormous. Most of the respondents agreed to promote water base tourism activity in the present study area. Tourists are looking forward for the utilisation of rivers for the sightseeing purposes which can in turn improve the economic stability of the local people. The majority of the respondents are very much concerned about the environmental degradation due to over utilisation of water resources and they had given their views on it to utilise the rivers in sustainable way.

The role of the government is undeniably important to promote River Tourism. Proper planning, sufficient budget allocation, maintenance of river water quality and the involvement of the local people are few steps that need to be improved.

Major Challenges

There is an opportunity to flourish the River tourism in the present study area but to implement the different developmental mechanism is challenging. The major challenges are:

- River needs to be maintained throughout the year otherwise tourism activity will pollute the river and as well as the entire environment.
- The concept of River Tourism is not well known to most of the visitors which is also a big barrier for the progress of River Tourism.
- Most of rivers in Dooars region are rising up due to the depositional process which can create natural hazard.
- Due to global climate change most of the rivers gets dry. River without water is not a perfect combination for River Tourism activity.
- Awareness of the visitors towards water pollution is most important. Utilization of plastic and other non-degradable components are strictly to be prohibited in the destinations.

Suggestions

Based on the field observation and responses received through survey, local inhabitants' and visitors, the following recommendations need to be applied:

- There is a greater need of local people's involvement for the development of River Tourism.
- To preserve the ecological balance optimum number of visitors are allowed to take part in water tourism activity.
- To control water pollution there is a need of regular monitoring process for water quality inspection.
- The government and the local authority should work together for sustainable utilization of water resources for River Tourism perseverance.
- The infrastructure of existing tourists' destinations needs to be improved.
- Local authority has an important role for the promotion of a River Tourism.
- Awareness campaigning and drive is important to the local people and visitors as well.
- Government or concerned body should formulate a master plan and initiate necessary trainings or skill programme required to promote the River Tourism activity.

Conclusion

In the recent year all over the world River Base Tourism are thriving and it is contributing significantly for the national economic growth. Many countries are already well-off in this form of tourism activity. Although the contamination and infringement are the major challenges to accelerate river base tourism but the positivity of the governmental thoughts can change the negative perception toward River Tourism. Dooars region has enormous possibility, as nature has abundantly gifted number of rivers with enchanting scenic beauty which requires to be utilised in scientific and in natural way.

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