International Journal of Multidisciplinary Trends

E-ISSN: 2709-9369
P-ISSN: 2709-9350
www.multisubjectjournal.com
IJMT 2024; 6(5): 31-34
Received: 02-03-2024
Accepted: 09-04-2024

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A study on transport network of the Kosi Basin reason

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Abstract
Transport network of the Kosi Besin region has been studies the Kosi Basin region consists some entirely of rugged and 60 meter height in north. This area is found close to the Nepal border witch has separated from terai region of Napal through the line of great boundary fault south of when most of the river rise abruptly and they are responsible for the formation of Kosi alluvial cone. Transport network of the study region was found to involve road rail. River and air network. Road network has made magnificent contribution to the transport network which had made number of national highways. State highways and other local roads wide railway & air transport has made little contribution water transport is very important part of Kosi Basin.

Keywords: Kosi Basin, transport network, Kosi Besin region, rugged terrain, 60-meter height

Introduction
As well known, transport network links the various destinations and ferries people, goods, and services. It is largely due to the improvement of transport network that tourism has expanded. The advent of flights has shrunk the world, and motor vehicles have made travel to anywhere possible. This reality, coupled with changing work patterns and innovative marketing has driven international mass tourism through the years (Sorupia, 2005) [13].
Advances in transport network have widely eased travel. It is attributed to the ease and accessibility of modern transport network that has spurred the widespread growth of nature tourism within the United States and overseas (Honey. 1999) [14]. The increase in the number of visitors to what were once remote areas has resulted in degradation and damage of the resources prompting the need to re-evaluate the role of transport network in the exercise, Impacts of tourism development include soil erosion or compaction, clearance of vegetation to give way to reads and tourism facilities, recreation use of off-road vehicles, trail bikes, snowmobiles horses, and even the trampling of pedestrians (Buckley, 1996) [15]. The careful planning of sensitive areas which includes the utilization of zoning to determine areas for facilities and tourist activities and to protect natural arcas and discourage development, and the planning of roads, hiking and riding trails should be integrated into the natural environment (Inskeep, 1987) [16].

Database and methodology
Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. The present study has two approaches quantitative and qualitative. On one hand, quantitative approach deals in farming a data base from which to infer characteristics of transportation. On the other hand, qualitative approach deals with subject assessment of attitudes, opinion and behaviour.

Field survey
1. Transportation map of the Kosi Basin region.
2. Observation of transport system in different seasons,
3. Identification of the structure of study area and its influence on transportation

Post field survey
1. Data collection
2. Data interpretation, not
3. Explanation of data

Data collection
The present stuck area is a newly formed state of India and the study will be completed by data collection. Adequacy, suitability and reliability of data will be kept in mind.

Primary data

a) Observation method
b) Interview method
c) Questionnaires
d) Content analysis

Secondary data

a) Magazines, books, maps & news papers
b) Publications of local, state and central government
c) Historical data
d) Published reports of research
e) Colleges/University publications

The study area

The Kosi Basin is delimited by Nepal in the North, the Ganga River in the South, the district of Malda in the East and the districts of Sitamarhi, Muzaffarpur and Vaishali in the West. It has an area of 30349 square kilometres and command area of 62,000 km within Himalaya. Some of the important rivers which rises in the Nepal Himalaya flow on the gravity of slope towards the master stream of the Ganga in the South. The area is thriving ground of rice and fish culture alongwith the production of Singarhara and Makhana. Its latitudinal extent is 25°N to 29°N and 86°E to 88°E. It covers the districts of Saharsa, Purnea, Supaul, Madhepura, Araria, Kishanganj and Katihar. It also commands almost all the districts of Darbhanga Division west of the Kosi River.

Condition due to changing courses of river only in the southern part. The National Highway No.31 which passes via Kurshela Bridge up to Saharsa, Bihariganj, Kishananj and Forbeshganj are important. Madhepura is a nodal point from where the flood radiate towards Fulparas, Supaul, Saharsa, Katihar only during dry season. These roads are motarable, but in rainy season there is no hope that they will be dry to be motarable. In this way, one can say that the Kosi Basin is still backward in transport development. In areas of Nirmali and Supaul the raods have been broken at several places. In between Bhimnagar and Mansi at a distance of more than 100 km. the lack of road is very much felt. Similarly, the southern Ganga belt at a distance of about 20 km. there is no transport line at all. The development of Baraj across the Kosi from Bharadah to Bhim Nagar and east of Nirmali have been highly felt and these two way be helpful in solving the problem in the area. National Highway No.57 is under construction which is part of east- west corridor and will connect the Kosi Basin from Silchar in Assam to Porbandar in Gujarat by road.

Fig 1: Broken-bridge in alamnagar on the Kosi River

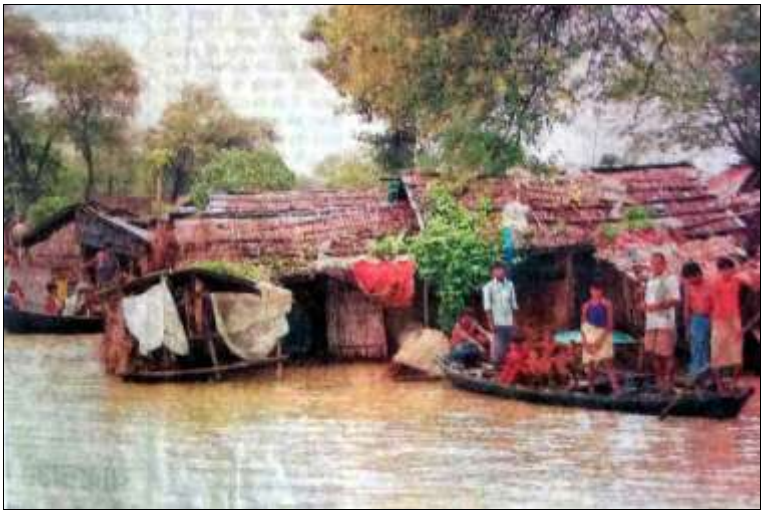

Fig 2: Flood affected village in Jamunia, Saharsa

Railways

There is a good network of railways in the Kosi Basin which is mix of broad gauge, metre gauge rail line but now most of them have been converted into broad gauge rail line start from Jainagar in the north of Madhubani district followed by Darbhanga and Samastipur junctions in the south along the course from Vidyapatinagar in the west and came to east following the path of Dalsinghsarai, Barauni, Begusarai, Khagaria, Katihar, Purnea and Kishanganj junctions in the north- eastern part of the Kosi Basin. Two branch rail line are Katihar to Jogbani and Mansi to Saharsa via Purnea are also running efficiently followed by

Samastipur to Khagaria. At present Sakri junction to Nirmali via Jhanjharpur and Jhanjharpur to Laukaha Bazar is metre gauge and now they are converted into broad gauge.

The rail line is also expanding slowly in the Kosi Basin such as Hasanpur to Sakari and another Nirmali to Saraigarh via Bhaptiahi in Saharsa and third one will connect Darbhanga and Kusheshwar Asthan via Baheri are important. A new proposed rail line is Jainagar to Nirmali via Laukaha Bazar and Phulparas is surveyed. A new mega rail bridge is under construction at Nirmali which will connect Nirmali to other eastern part of the Kosi region (Fig. 2.21).

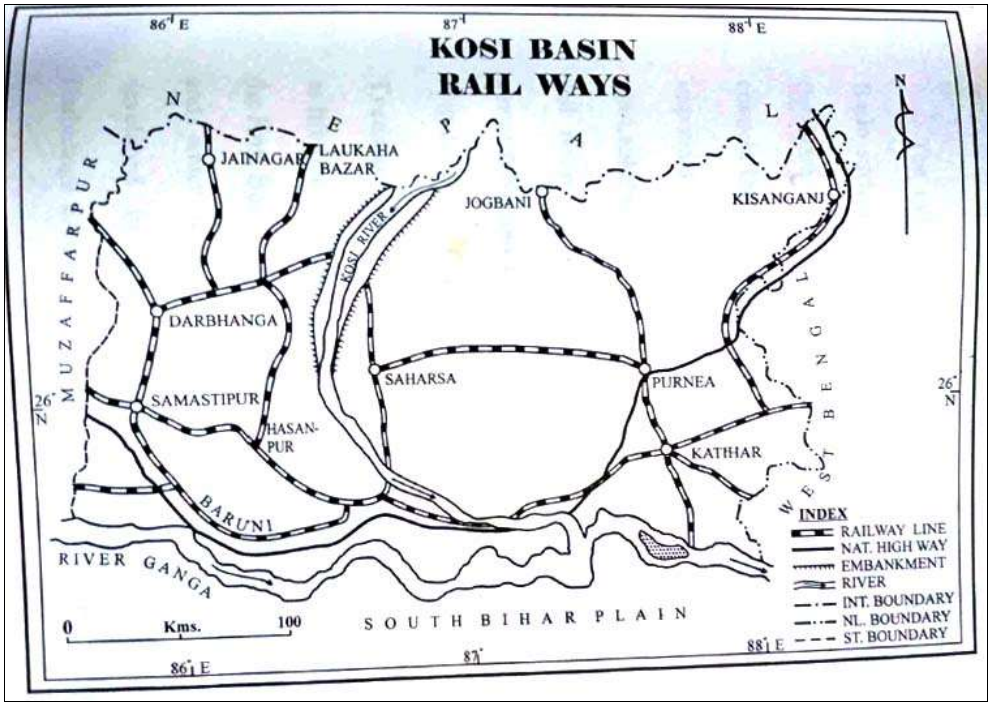

Fig 3: Kosi Basin railways

Transportation Line

Roads and Railways are considered as life line for socio-economic development in any region in the Kosi Basin due to far and wide disturbances of wetlands and water locked area. Very few transportation line developed in comparison with the western part of Darbhanga division where roads and railways are densely constructed to serve the people. The length of roads and railways could be seen in the following Table 1.

Table 1: Kosi Basin length of railways

From to	Length in KM.
Shamastipur to Jainagar	75 km
Darbhanga to Nirmali	65 km
Samastipur to Katihar	105 km
Katihar to Kishanganj	85 km
Katihar to Jogbani	55 km
Katihar to Samastipur	65 km
Darbhanga to Raxaul	95 km

Source: Compute from Map of Bihar.

Besides these, both eastern and western embankment of the Kosi river serve the purpose of road for travelling from one place to another with the NH No.28, 31 & 106 which serve different parts of the Kosi Basin along with the road which runs from Naugachia to zero mile near Baruani via Dalsingsarai, Samastipur, Jainagar. These days due to encoming of flood in the Kosi Basin most of the roads of the area have been broken but the highway from zero mile up to Samastipur is in better condition. It has also been observed in most of the villages and towns which come under the Kosi Basin are well connected either with metalled road, R.C.C. road, brick soling specially in care of the road constructed by various Panchayats.

Conclusion

The main resource for the development of any country and city area is transportation, whether it is rail transport or road transport or water transport. Studying this area has shown that when a terrible situation arises due to the flood of Kosi river, then the resources of transportation are negligible here, only boat is seen as the only support here

Due to the change in the course of the river in the Kosi basin area, the situation in the southern part is also bad. The condition of roads here is very bad. During floods, the road is not even found here and in the dry season, the road is only suitable for walking. In this way, it can be said that the Kosi basin is still backward in terms of transport development. Although many highways pass through this area from east to west, the condition of railway traffic in this area is fine, but it is also affected during floods. The administration here should make its own flood policies in this area so that the life of the people here can be simple and happy.

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