A GEOGRAPHICAL ANALYSIS OF LOSS OF HUMAN LIFE OF KOSI FLOOD AREA AND ITS REMEDIES TO SAVE HUMAN LIFE

Dr. SANTOSH MANI TIWARI
Department of Geography,
B.R.A. Bihar university, Muzaffarpur.

Abstract:

The availability and management of water resource have become the most important factors to be considered by the planners especially a state like Bihar.The assessment of water resources of the Kosi Command Area is a work in this direction.

Keywords: Analysis, Geographical, Management, Command, Human

INTRODUCTION:-

The purposed work under reference lies in the Kosi command area in the Eastern part of North Bihar. It stretches between 86 degree 30' longitudes and between 25 degree 15'N and 26 degree32'N latitudes. It is bounded by Nepal in the north, by Mahananda basin in the East, by the Ganges river in the south and Kamla basin & Bagmati basin in the west. Supaul, Madhepura, Saharsa some parts of Khagaria district major parts of Araria, Purnia district and half part of Katihar district lie in the Kosi basin. Total geographical area of the basin is 11.14 million hectares. 121 Community Development Blocks (CDBs) abd 9600 villages are part of this basin.

The Kosi basin is the integral part of the lower Ganga plain. It is monotonously leveled plain. The average elevation in the basin is between 30 M and 40 M general slope is form to south and from north-west to south-east. If there is nay break in slope, that is caused by bluffs ox-bow lakes and sand domes etc.

The Kosi having a catchment of 22,888 square miles rises in several streams in the Himalaya East of the Nepal valley and west of the singalila range west of Darjeeling. This river takes its birth in Tibet at a height of about 5,846 metres. It can be divided into two distinct parts, one lying in Tibet across the Himalayes and the other to the south of it. The great snow fields that contribute to te discharge of this river in spring lie within 3 to 5 thousand metres. After passing through a steep and narrow gorge the river debouches into the plain Chatra in Nepal entering Bihar at Birpur bearing wit it vast quantity of detritus every year, there after it flow in a great

are through the districts of Saharsa, Darbhanga and then takes a sharp turn, towards east through the district of Monghyr into the bed of one of its dead Tributaries the Gughari. It flows practically parallel of the Ganga before meeting it eventually at Kurshela in Purnea district covered a total distance of nearly 260 kilometers having no real bed of its own. The Kosi was notorious for its vagaries and the erratical and fickle nature of its course. This however, was qualified by the fact that the Kosi has been steadily advacncing west ward and in the process has been lengthening its channel. In 1736 the Kosi flowed a mile west of Purnea and joined the Ganga opposite Sahebganj (Santhal Parganas). During the period 1807-39 it flowed east of Dhamdah and joined the Ganga near Kursela. During the years 1873-92, it moved further west and flowed appropriately along the boundaries of Saharsa and Purnea districts since then it has moved further west ward and rate of about 1.6 kilometer. Per year, and now fallow the course described above, the havocs caused by the floods of the Kosi River in the monsoon season are now fresh in memory.

The entire eastern sector of the north Bihar plain covering appropriately 33 to 36 thousand kilometers constituting the Kosi belt used to be ravaged by the waters of the Kosi turning fertile fieleds into area wastes of sand, sweeping away farms and villages and changing the whole face of the country from a fruitful land escape ito a wilderness of sand and swamp. No wonder it was iknown as the 'Rivers of Sorrow' since 1958, however, it has been trained within embankments for a total length of 270 kilometers and this together with the barrage constructed at Hanumannagar has transformed Bihar 'RIVER OF SORROW' into the 'RIVER OF HOPE'.

Objective of the present study are the following:-

1. To assess the causes of flood in the North Bihar Plain.
2. To evaluate the lossess of human life and livestock property, caused by flood.
3. To evaluate the rural poverty caused by flood.

METHODOLOGY:-

The present work involves data collection both from primary and secondary sources. Secondary data have been collected from different government and non-government institutions like Disaster Management Department, Ministry of Water Resources, Internet etc. Primary data have been collected during field surveys.

PHYSICAL CONDITIONS:- The North Bihar plain is situated to the North of the Ganga river. It comprises an almost flat alluvial plain with an average elevation of less than 100m above the mean sea level. The land slopes gently from the north west to south-east with a

gradient of less than 1 metre per 5 km. It has an area of 527558 sq. km. approximately. The plain is traversed by numerous rivers and their tributaries which deposit newer alluvial soil called khaddar in huge amount every year. The broad relief of the plain consists of alluvial cones or fans formed by the major rivers like the Gandak, Kosi, and Mahananda. The rivers have deposited silt in their bed and so they flew generally at a higher elevation than the surrounding areas. The burst through their levees and inundate their flood plains. The whole area is marked by many abandoned channels of the rivers forming oxbow lakes or elongated depressions.

CAUSE OF FLOOD:- Flood is a natural phenomenon as rain or wind. Floods are considered to be associated with rivers and people conceive floods as the outcome of accumulation of huge volume of water coming out of the river through overtopping river banks during peak discharge period.

The floods in rivers of the North Bihar Plain are the responses of both natural and anthropogenic factors. Annually recurrent floods in North plain are caused by a combination of the following natural factors.

a. Topographical
b. Geological and Geomorphological
c. Hydrometerological (Meteorological and Climatological factors)
d. Soil erosion
e. High Slit Content
f. Landslides
g. Earthquake

BRIEF HISTORY OF KOSI FLOODS :-

River Kosi has a history of havocing flood in the past. Major flood due to breach on the western embankment in Nepal in the 1963 year occurred near the village Dalwa (Nepal). It was caused by poor maintenance. In 1971 another breach took place below Bhimanagar when Bhatawa Approach Bundh Collapsed and washed away many villages.

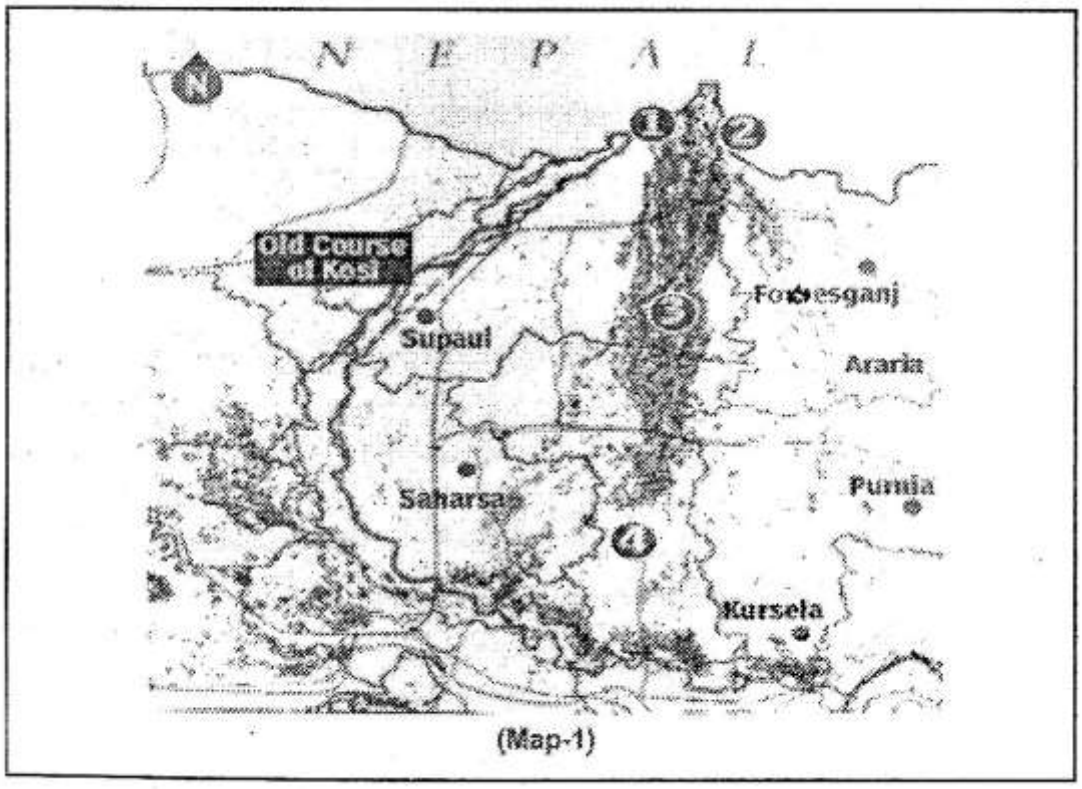
The next breach accurred in the your 1980 near Bhurawa, Eastern embankment, when not much damage was caused as the river receeded very fast. In the your 1984, a big tragedy took place when the eastern embankment near Tempura village was breached, uprooting millions of people and engulfing 96 villages of 7 blocks of Saharsa and Supaul districts.

In 1991, a breach in the western embankment occurred near Joginia in Nepal. Like 1980 breach, this also did not cause much trouble as the river receeded quickly.

THE 2008 FLOOD OF KOSI RIVER :-

The 2008 flood is the latest example where a breach has been responsible for large scale inundation continued for large scale inundation continued for more than two months. What so ever the reason may be during the monsoon the river experiences floods almost every year causing considerable damage and disturbance to the local population.

In general the main reason behind the Kosi flood of 2008 is due to the excessive silt load it carries. Due to the deposition of silt on gentle slope, it has tendency to shift its course. Today the Kosi has shifted its course 150 km most from its original flowing place. It was to check the lethal movement as well as for flood protection, that embankments on both sides of the river were constructed 5 to 16 km apart.

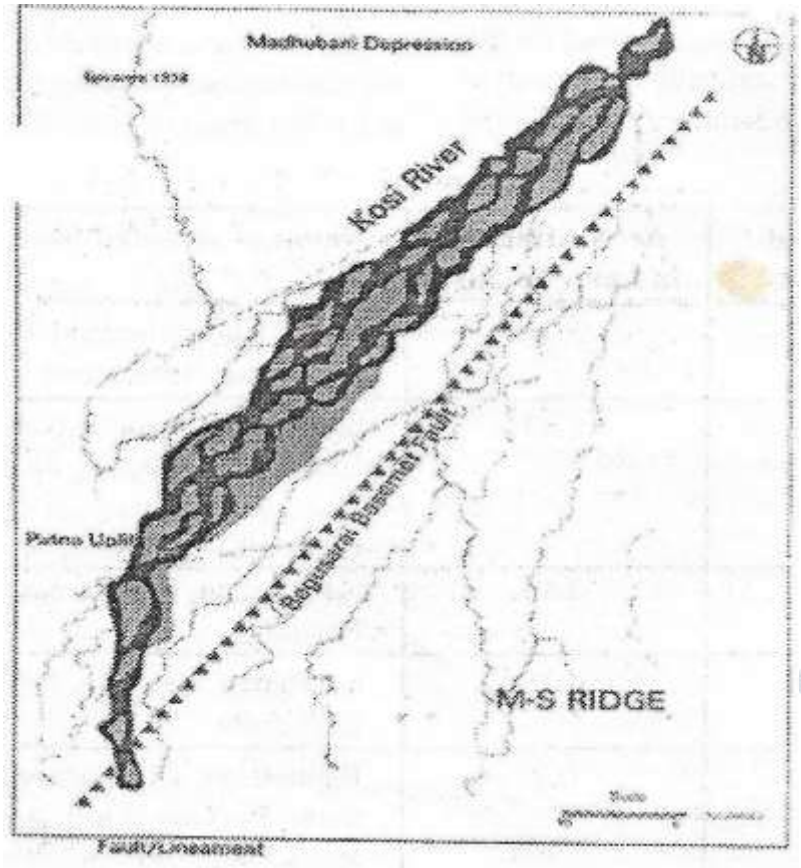


The first breach of Kosi embankment at Kushaha in Nepal was noticed on 5th August 2008. Progressive weakening of the spurs and embankment due to the nuggets on the part of engineers, contractors, and bureaucrats has caused the catastrophe. The breach has occurred at 11.9 km from the Kosi barrage.

Sl.No.	Name of District	Area Affected in Lakh hectare	Name of affected blocks
1.	Supaul	0.51	Basantpur, Pratapganj, Raghopur, Chhatapur, Triveniganj
2.	Madhepura	1.59	Shankarpur, Purainj, Kumar Khand, Chausa, Singheswar, Alamnagar Murligang, Madhepura, Bihariganj, Gwalpara Udakishunganj
3.	Araria	0.45	Narpatgang, Bhargama, Forbesganj Raniganj
4.	Saharsa	0.38	Sourbazar, Nauhada, Patharghat, Sonbarsha
5.	Purnia	0.7	Banmankhi, Dhamadaha, K. Nagar Vaise, Barhara Korhi, Amaur, Bhawanipur, Banisa Rupauili
	Total	3.4	

Name of Districts	No. of Blocks affected	No. of Panchayats Affected	No.of village affected	No.of Persons evacuated	No.of Human lost	Work livestock Lost	No. of House Damaged Pucca & Kuccha Hut
1. Supaul	5	65	173	696816	151	97	130207
2. Madhepura	11	140	370	1419856	240	1987	168410
3. Araria	4	71	141	626062	22	-	8439
4. Saharsa	6	59	169	448796	40	22	26124
5. Purnia	9	77	140	164000	25	0	7562

In between the breach location and Kursela when the river took the new straight route, during its journey it flooded vast areas on both sides of the new course affecting 20 to 30 lakh people damaging huge property, resulting in unexpected loss cattle wealth and human lives.



AFFECTED AREA :-

According to the available information till new, five districts through which Kosi flows were seriously affected. An estimated 35 blocks, 412 panchayats, 993 villages and a population size of 3,55,530 have been badly hit.

SUGGESTED SOLUTION :-

Government of Bihar formed an expert committee to find a solution for the big problem. The committee recommended sealing of the breach. To collecting water during low flows and diverting it towards the barrage.

For solving the ever-increasing problem of floods in Bihar, various groups have been discussing the matter in recent past.

Some of the more popular solutions forwarded are :

1. Inter-basin and intra basin-transfer of river waters.
2. Indo-Nepal Co-operation.
3. Construction of high Dam in Nepal.
4. Increasing the area under afforestation.
5. Better maintenance of existing structures.

On the basis of study made through the field survey following conclusions can be drawn.

1. Flood has been termed as an environmental hazard which also results in catastrophic losses of property, income and lives.

2. Unlike the other flood prone areas in the country, floods of North Bihar are very punctual and occur with striking regularity.

3. The region, once covered by rich forest is now devoid of forests as only 1.81% area now remains under forest, that too confined to only six districts. This has added to the problem of flood as both non off and sediment load have increased.

4. It is urgently needed that both Nepalese and Indian Government should sit together and start purposeful survey to formulate detailed schemes for the development of water resource which would automatically result in flood mitigation.

BIBLIOGRAPHY :-

1. Ahmad, E. (1965) Bihar : A Physical, Economic and Regional Geography, Published by Ranchi University, Ranchi.

2. Choudhary, Shardanand (1992) Geography of Floods in North Bihar, L.N. Mithila University Press, Darbhanga.

3. Singh, R.P. and Kumar A., (1970) A Monograph of Bihar : A Geographical study, Bharti Bhawan, Patna.

4. Chatterjee, S.P. (1970) Natural Hazards, Floods, Drought Earthquake printed by Eco-Geo. Soci. Of India April, 1970 (Survey Report on Geo. By J.C.S.S.R 1970)

5. Bihar at a Glance, 2003, directorate of Statistics and Evaluations, Govt. of Bihar.

6.Central water commission Report, Govt. of India, 1988

7.Flood Management information, water Resources Department, Govt. of Bihar Patna, 2007.