

Environmental Catastrophe, Human Rights and Governance: a Sociological insight in the ‘Sorrow of Bihar’

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Bihar is marred with incessant catastrophe by recurring floods from the river Kosi flowing from the terrain of Himalaya adjoining Nepal. The river Kosi along with other sister rivers like Gandak, Burhi Gandak, Bagmati, Kamla Balan, Mahananda and Adhwara group of rivers have earned notoriety due to their unruly, turbulent and unpredictable behaviour. Year after year, in the rainy season, water flood in from Nepal swallowing millions of hectares of land, thereby completely uprooting those living in these areas. The recurring natural catastrophe poses a serious threat to the environment, creating human rights problems for inhabitants and also for the governance system. In this background, the paper focuses on five major aspects. “The Genesis of disaster” elaborates the genesis of the problem of inundation related to Kosi River in the Indo-Nepal region. “The History of Kosi Disaster” highlights some earlier major inundation affecting the state of Bihar and the repercussions in its aftermath. Violation of the basic human rights of the people of the region is covered in the successive part, “Human Rights Concern”. The next penultimate part, “Governance Problems” analyse the issues pertaining to mis-management of relief and rehabilitation measures and lack of consensus between India and Nepal to evolve a common-minimum programme to solve the problem. The last part “The Solution” suggests some specific ground level, most pertinent and useful remedial measures to solve the problem.

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Bihar accounts for 17.2% of the flood prone area of India. Floods creating havoc in over 20 districts of state, with 76% of the population, in the north Bihar living under the recurring threat of flood devastation. About 68,800 sq. Km. out of total geographical area of 94,160 sq. Km. is flood affected. The plains of Bihar, adjoining Nepal, are drained by number of rivers having catchment in the steep and geologically nascent Himalayas. Kosi, Gandak, Burhi Gandak, Bagmati, Kamla Balan, Mahananda and Adhwara group of rivers originate in Nepal. About 65% of catchment area of these rivers falls in Nepal/Tibet and only 35% lies in Bihar. The rivers have earned notoriety since time immemorial due to its unruly, turbulent and unpredictable behaviour. Year

after year, in the rainy season, water flood in from Nepal swallowing millions of hectares of land, thereby completely uprooting those living in these areas- not to talk about the loss of agriculture land, houses, livestock, ponds, wells, and above all their dreams. Aggravating the situation more seriously, on an average, the river carries 70-80 million tons of silt every year and due to this, it changes its course after a definite period of time. Result is, the changed course of the river swallowing millions of hectares of land which hardly resurface even after water recedes, posing a massive challenge of shifting and rehabilitating a huge population. While a failure to do so means that there would be sand dunes everywhere in the old course and as a consequence the state and its people permanently lose their properties, fertile lands, infrastructure, and all. As such, flood of Kosi is rightly called as “Sorrow of Bihar.”

The issue of Kosi inundation becomes more relevant for discussion in the background that both India and Nepal falls in South Asian region. South Asia accounts for about 20% of world population, which may reach up to 25% in 2025 according to an estimate. The South Asian Region is emerging as the poorest, most illiterate, malnourished and undernourished pocket which lag behind in per capita income, human right index and development indicators. According to World Bank estimate, over 500 million population of South Asia is surviving below the poverty line, which is about 40% of the world population. Its share in the global income is just 1.3 percent.

The paper is based on Secondary Sources. For the convenience of understanding, apart from “Introduction” and “Conclusion”, the manuscript is divided into five major parts. “The Genesis of disaster” elaborates on the genesis of the problem of inundation related to Kosi River in the Indo-Nepal region. “The History of Kosi Disaster” highlights some previous major inundation affected the state of Bihar and the resulting experiences in the aftermath of that. How these frequently occurring floods are violating the basic human rights of the people of the region is covered in the next part, “Human Rights Concern”. Next part, “Governance Problems” focuses on the mismanagement of relief and rehabilitation measures and lack of consensus between India and Nepal to evolve a common-minimum programme to solve such a vicious problem. In the last part, “The Solution”, some ground level most pertinent and useful remedial measures are suggested so as to solve the problem of frequent inundation in the region. Now, we will take up each one of the unit separately and discuss the problems in detail.

The Genesis of Disaster

Like many other rivers of North Bihar, Kosi gathers water from Himalayas in Nepal. However, it is a trans-boundary river and flows between Nepal and India. Kosi is also one of the largest tributaries of Ganga and after flowing through nearly 70,000 sq. kilometres confluences into Ganga near Kursaila in Katihar district of Bihar. In Nepal, this river lies to the west of Himalayan peak, the Kanchanjangha and has seven major tributaries namely Sun Kosi, Tama Kosi, Dhudh Kosi, Indravati, Likhu, Arun and Tamar. Because

of these seven branches, it is called as 'Sapta Kosi' in Nepal. The upper catchment of the river falls in the domain of Tibet and Nepal. This part is about 85% of the total length of the river. Remaining 15% falls in Indian Territory, where it mainly passes through north of Bihar State.

The river has earned notoriety since time immemorial due to its unruly, turbulent and unpredictable behaviour. It has an average discharge of 55,000 cusecs of water that increases by as much as twenty times during the monsoon or flood season, thereby assuming dangerous proportions. Because of severe floods through sudden overflow during monsoon, the river creates havoc in the region by destroying surrounding environment. More importantly, it carries, on an average, 70-80 million tons of silt every year and perhaps due to this feature, it tends to change its course after a definite period of time. The silt loaded discharge is spill over the Indo-Nepal border after the flood water recedes from the plain converting the fertile land barren. About 1,295 sq. km. of land in Nepal and 7,770 sq. km. in India have become infertile and unused because of deposition of sand and silt. The river is especially known for lateral movement and has shifted to west. It shifts about 20 km. in a single year. As a result, the river has ravaged lands to the tune of around 3,000 to 15,000 sq. Km. in North Bihar and 800 to 1,000 sq. Km. in Nepal. It has also generated huge scattered swamps. There are multiple factors responsible for the recurrence of Kosi led flood in the Indo-Nepal region. The river hardly passes through a well defined flood plain. There is huge discharge with excessive fluctuation in daily discharge during monsoon in the range of 5 thousand cusecs to 26 thousand cusecs. The river bed has silted up considerably over the years. At several points, ground level is lower than river bank. The problem aggravates further when Ganga and other nearby rivers starts flowing in through its path. As a consequence, the river takes thunderous shape in the monsoon season and barge into the plains after breaking its path due to heavy rush of monsoon water. Result is widely known and acknowledged in the shape of "Sorrow of Bihar"

The History of Kosi Disaster

In India, about 7% of disasters are because of floods. Recent trends concerning average area affected by flood hardly shows significant fluctuation during 1959-2001. However, there is an increase in population affected and damage to human lives and livelihood including damage to agricultural crops during the years. The mean area affected has been around 7.57 million hectare during the last forty years. Flood prone area in India is 40 million hectares. It constitutes about 25% of cultivable land. Its magnitude is much higher in recurrent flood prone states like North Bihar, West Bengal, Coastal Orissa and Andhra Pradesh.

A recent review of floods in Bihar indicates that the plains of north Bihar have recorded the highest number of floods during last 30 years. In the years 1978, 1987, 1998, 2004, 2007 and 2008 Bihar witnessed high magnitudes of flood. The total area affected by floods has also increased during these years. Flood of 2004 demonstrated the severity of flood problem when a vast area of

23,490 sq. km. was badly affected by the floods by Bagmati, Kamla and Adhwara groups of rivers causing loss of about 800 human lives, even when Ganga, the master drain was flowing far below the danger level.

The worst kind of flood was witnessed by the people of North Bihar in the year 2008. On August 18, 2008 the Kosi River picked up an old channel which, it had abandoned over 100 years ago near the border with Nepal and India. Nearly 30 lakhs people were reported affected as the river broke its embankment at Kusana in Nepal, thus submerging several districts of Nepal and India. The worst affected districts included Saupal, Araria, Madhepura, Purnia, Katihar, parts of Bhagalpur, as well as adjoining regions of Nepal. The flood caused by the breach in the eastern afflux embankment at upstream Kusana village in Nepal on August 18 was the worst in the region. Over 30 lakhs people in 16 districts were in the grip of floods. Large areas remain totally submerged, with reports suggesting that some villages have simply been washed away by strong currents. Tens of thousands of people have also been displaced in neighbouring Nepal. The damage to nearly 1,250 miles of highway and 250 road bridges was estimated around \$ 523 million. The flood of 2008 was slightly different in nature from previous inundations. The changed course of river has swallowed millions of hectares of land that are hardly going to resurface even after the water recedes, posing a massive challenge of shifting and rehabilitating a huge population. Experts say that it would be possible to bring back Kosi to its original course. While the failure to do so will mean that there would be sand dunes everywhere in the old course. It also means that the state and its people will permanently lose their properties, fertile lands, infrastructure, and all. Unless the situation is handled carefully, Bihar will witness a pre-1963 like situation when the Kosi belt was known for drought and famine.

Human Rights Concern

Repeated flooding takes toll in the form of loss of lives of millions of people, destruction of infrastructure such as roads, bridges, houses, canals, agriculture lands and completely sweeping away with it, sustainable source of occupation, income and livelihood. After every flood, the problems of food, clothes and houses surface before the majority of the population in the flood affected area. Then appears the problems of rehabilitation, safety of animals, agriculture, epidemic, transportation, reconstruction of roads and quest for regaining the overall damage are created. Most importantly, lack of availability of funds, poor management and planning, insensitivity and apathy of different bodies concerned with the remedial measures are also experienced in the aftermath of previous floods.

During couple of decades of 20th and 21st century, flood related problems and their solutions are politicized on a large scale. Flood may be the reason of trouble to common man but leaders, officers, engineers and contractors use it as a better opportunity for immense milking of money. Relief, help, compensation and rehabilitation are well politicized as from local, district

and state level, the misuse of public treasury by political activist and leaders on the name of reconstruction and enduring solution is very common. The misappropriation of relief funds by mafias and criminal elements has criminalized the scenario rather than giving an adequate solution of ailments of flood. When the flood retreats, it not only leaves destructive scene behind it but it also shakes the confidence of man and entire structure of the society and leaves behind only soar memories. Recurring floods thwarts and shakes the confidence and self respect of people along with the loss of livelihood and destruction of social and economic structure.

The state which is sharply divided into rich and poor and having 35% of the economy dependent on agriculture without much investment in agricultural infrastructure; of course, it is the poor who suffer most from the flooding and loss of crops, food, shelter and clothing. Marginal and small farmers are the worst sufferers along with the landless peasant in the absence of farming. Even after the water recedes, large areas of the affected region rendered permanently infertile due to the deposit of gravel and pebbles of the flood water. Natural catastrophe spreads its wing in the form of spread of epidemic- the commonest of them are gastro intestinal disorders, high fever, coughs and colds, diarrhoea, measles, conjunctivitis and malaria and sometimes even cholera. Lot of people- nursing mothers and babies, old and young- generally suffers from different ailments due to recurring floods. Dead bodies of people along with corpses of animals and cattle float in the flood water. With no alternative source of potable water, the victims are forced to drink the same water thus, fabricate heinous human right predicament. The situation becomes so grave that the poor and marginalised find no any alternative rather than to migrate in order to save life and also in search of occupation and earning. Overall, during each catastrophic flood, the whole region experiences large scale violation of human rights. It begins with the loss of economy, livelihood, health, social capital, infrastructure and ultimately toll reaches up to the extent of loss of lives to thousands of people every year.

Governance Problems

Experts say that the large scale governance apathy along with fragile relation between India and Nepal are the root cause of repeated catastrophe which is gulping millions of lives every year. Allegation and counter allegation between political parties and blame game between state and central governments, fixing each other culprit for the whole problem, in a way, diluting the gravity of the situation. History witness to the fact that flood related problems and their solutions are politicised on a large scale. The misappropriation of relief funds by mafia and criminals are commonest instances. Despite government efforts for flood management, relief, rehabilitation and compensation; the problem not only remained same during the years but contrary aggravated in magnitude. The solemn situation immediately requires the attention of politicians, planners, academicians and disaster management officials and most importantly the Ministry of Foreign

Affairs officials for a rapid and enduring solution. While tackling such a mammoth issue, along with technical, engineering and mechanical aspects, the social and economic matrix of floods should also be taken into consideration to evolve a permanent solution.

Though the initiative to tame this mighty and uproarious river started way back in 1954, when India signed the historic Kosi agreement with Nepal. While Gulzari Lal Nanda signed the agreement on behalf of the Indian Government, Nepal was represented by Bir Shumeshwar. The agreement envisaged setting up of a barrage by GOI. The barrage was to be located about eight miles upstream of Hanuman Nagar town. The barrage was built at Bhimnagar and it took over seven years (1956-63) to complete the work. The terms and conditions of the agreement, however, stipulated that India would be responsible for the repair and maintenance of the barrage. Other than the barrage, a 39 kilometre long embankment from barrage site to Chatra in Nepal was also built to 'jacket' and tame the turbulence of this river. The 'jacketing' directed the flow of the river to the barrage and swift and fast Kosi was brought under control to a great extent. While 'jacketing' of this river upstream barrage did prove successful in guiding and controlling the direction of the flow over the last 45-46 years, it was also moving towards becoming disastrous because of heavy siltation. As the river carried heavy silt with it, in due course of time the bed of the river rose above the field itself and this, in fact, has been the typical reason of flood every year in this area.

Unfortunately enough, while all previous floods in Kosi always happened due to breach in the river embankment downstream the barrage, the latest and most devastating flood of 2008 has been caused due to breach in the embankment near Kusaha which is located upstream the barrage. The reason behind the horrific flood of 2008 which engulfed more than 16 districts of the state devastated the serene lives of more than 30 lakhs of people and killed in the flood water more than 100 lives, was breach of barrage of Kosi River on Indo-Nepal border. But one cannot deny the apathetic attitude of the central and state governments. The barrage completed its estimated life span of 30 years way back in 1986. Since then, more than 22 years have elapsed, but neither the state government nor the centre showed any interest in constructing a new barrage or renovating the old one. Despite the flood prone history of Bihar, the Bihar government never showed much interest in dealing with the situation in advance. In fact, since independence, the centre never initiated diplomatic talks with Nepal seriously. Of course, flood occur due to natural causes such as incessant rains, but by constructing a series of high dams on the Indo-Nepal border the extent of floods could have been reduced.

The Solution

There are several areas where both the countries collaborate for an enduring solution to the natural catastrophe in the form of Kosi flood devastation frequently occurring in the region. Construction of one or more major dams may be one of the foremost options. The construction of dams and

reservoirs may be planned in such a way that it may evolve multi-purpose utility and as such the benefits outweigh the costs. Secondly, apart from water management for irrigation in the nearby areas by averting flood through dams and reservoirs, the hydropower generated through it may be used for agricultural, household and industrial activities. The hydro-power spawned by the dam may be an excellent substitute for thermal power and nuclear power. Surface irrigation is third another such area where both the countries can further collaborate. A major canal network may be constructed in such a manner that both the countries can develop agriculture, horticulture, fishiculture, tourism and other such allied activities. It may be in addition to regulation of drinking water. The fourth major area of collaboration would be Social Forestry. It may reduce soil erosion from floods, generate livelihood for tribal populace, fodder for animals, develop tourism, reduce the chances of change in river course and provide a good source of earning from forest products. If necessary, the theory of community approach may be applied as the local people are considered more familiar with regional planning. The participation of local stake holders may enhance the success rate of social forestry and augment its survival potential. Fifthly, attention can be given towards the construction of embankments. Realising the importance of construction of embankment, the Government of Bihar plans to construct 1,600 kms. of embankment in the next five years. With it, an additional 26 lakh hectare of land would be protected if proposed embankments are constructed. The next area of concern may be strengthening of bio-drainage system. Since water logging is experienced as a major problem after every flood in the region, therefore plantation of such trees may be promoted which can absorb water. This system may be helpful along the railway track, canal and the catchments.

Apart from above mentioned structural measures, some non-structural measures can also be adopted to tackle with the situation more appropriately. These include Flood Plain Management such as Flood Plain Zoning, strengthening of Flood Forecasting and Warning System to give early warning and rescue time from the impending floods. A strong Disaster Management cell equipped with latest equipment and gadgets to tackle with crisis situation is an urgent need. Coupled with it, a strong Public Health Management and Control Unit is also required to address the health epidemic generated due to polluted flood water, rotten wastes and decomposed animal carcass. Lastly, the Flood Insurance Mechanism should be initiated for the compensation of loss of economic as well as social capital due to flood catastrophe.

The need of joint minimum governance in the basin is urgently required. In this backdrop, both countries need to chalk out institutional reforms and policies keeping in view the possibility of joint management. The policy formulated as such may include plan appraisal, ex post evaluation, monitoring and resource sharing. It has been realised by now that planning and monitoring by a single country may not be able to solve the disastrous chronic problems generated by Kosi floods in the region. If the policy is formulated and executed

by taking into consideration above mentioned suggestions, then it may bring about radical transformation of the region. The livelihood losses of the people of both countries can be reduced forever which will ultimately lead to sustained social security, eco-security, food security, augmentation in employment and income generation.

Conclusion

Flood disaster is the commonest environmental catastrophe experiencing the Kosi basin of India and Nepal region. It has its root in the governance problem where both the countries are either, not taking seriously the gravity of situation or, putting responsibility for flood management on each other's shoulder. As a result, recurring inundation taking toll in the form of loss of lives, food, shelter, infrastructure, social and economic capital and overall causing grave human right violation. Minimization or complete omissions of flood generated damages are an urgent need of the region. For this, institutional change is immediately required for resolving the trans-boundary conflict. A joint authority may be set-up to tackle such a vicious problem. Joint authority may take into care the most contentious issues, evolve a common minimum program, getting involvement of local stake holders for the creation of such an atmosphere which would be flood protected and in which the overall socio-economic development of the region can be visualized.

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