An aerial photograph showing a multi-lane bridge crossing a wide river. Below the bridge, a road interchange with curved ramps is visible. The surrounding landscape is green with some patches of red soil or earth. The text is overlaid on a dark semi-transparent band across the top of the image.

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The cover image is courtesy of Sergio Souza.

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FEATURE

FLOOD NARRATIVES OF THE LOWER SUBARNAREKHA RIVER CORRIDOR, INDIA

By Debika Banerji

The Indian scenario of an alluvial river is that of miseries and mishap during the monsoon season when the river breaches its banks. The floodplain dwellers suffer and yet they continue to live on, coping with the challenges meted out to them. The flood experience is embedded in the everyday experiences of the villagers. Narratives by the flood-affected people of the river are a valuable form of data for research.^[1] Oral histories of people who inhabit the flood-affected

parts of a river corridor help in assessing their vulnerability—both physical and psychological. These accounts span the scope of human experience from fear, to terrible tragedy, to even humor. ^[2] Theories of economic rationality cannot always explain the behavior of the floodplain dweller, who does not always frame his or her action on the basis of rational economic thinking; rather it is shaped by traditions and norms. ^[3] However, most of the time it is the basis of



Carrying rushes from the river. Image courtesy of the author.

livelihood that causes a family to cling to vulnerable sites. Most of the villagers are dependent on the river for their livelihood and hence would like to stay in the flood-affected regions. The data and research suggest that the public sector needs to play a more active role in rehabilitation of the most vulnerable villages within the corridor, in order to minimize flood damage and promote the environmental restoration of the river corridor. The ecological restoration would minimize the

effects of the flood pulse and bring about an ecological harmony in the area. This article analyzes the human reactions of the villagers through examining their testimonials and seeks to establish the importance of such voices in flood mitigation. The testimonials of the villagers living in the corridor region of the Subarnarekha River are an important component of this study, carried out by researchers from Visva-Bharati University.

The Study Area

The Subarnarekha River is a part of the Chotanagpur River system, a plateau in the eastern part of India. It generally falls in the tropical monsoon climate region with a marked hot and dry season, a pronounced monsoon season, and a mild winter season. Rainfall received by the river comes during the monsoon, which spans from the month of June to August. The season of the retreating monsoon experiences mild rainfall and sometimes tropical cyclones that occur from September to November. This is a meso-scale river, which covers an area of around 19,300 km². The river leaves the Chotanagpur Plateau and enters the plains, meandering its way across the mud flats to meet the mighty Bay of Bengal. [4] The name Subarnarekha means “the thread of gold” and the sands of the river and some of its tributaries are auriferous, but without much

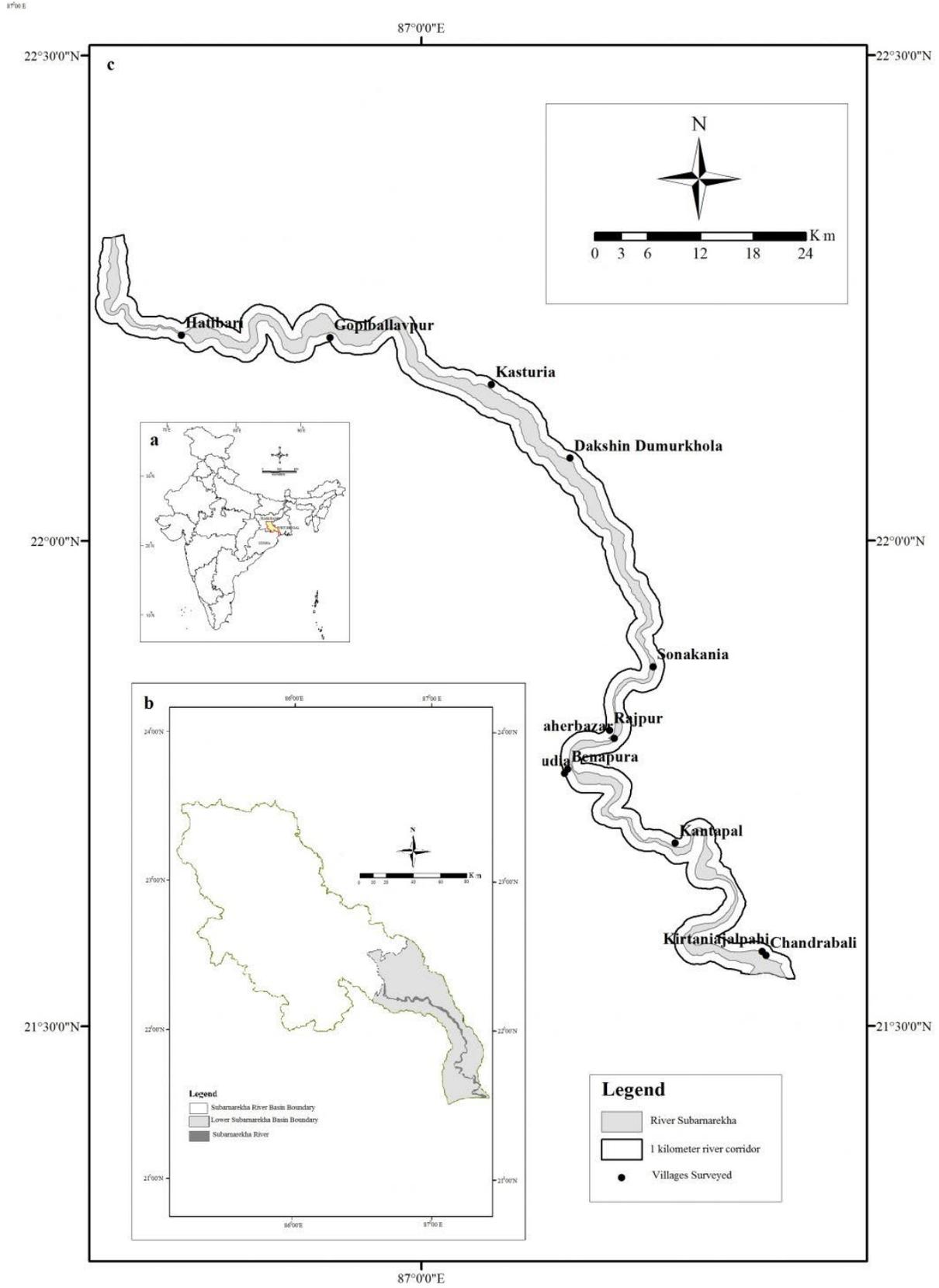
prospect of mining and extraction.[5] Small quantities of gold (auriferous traces) are present in the sand. The gold is extracted by the locals by various Indigenous methods.

The Lower Subarnarekha River basin has been delineated on the basis of homogeneous geology and geomorphology. This portion of the river basin has low relief (0 to 20 m), very low slope (0° to 2°), and flows over older and younger alluvium in the plains. The Subarnarekha is flood prone in this area where major floods are rare, but annual occurrences of floods of lesser magnitude are common. The lower river corridor is a one kilometer buffer extending to both sides of the main channel, which is around two kilometers in the lower stretch. The geological history as well as the occupational history of the river makes it an interesting aspect of study.

Narratives as a Way of Assessing Perception

In these geographical regions, floods are common and people have an abundance of stories that share their experiences with floods. Flooding vulnerability can broadly be divided into two types: the real physical vulnerability from the flood incidents and the psychological trauma that is felt during the incident. The physical condition does determine the perception about the river as well as floods. Flood narratives of the villagers are a way of assessing their psychology and trauma during flood incidents. It is the aim of this study

to assess how the vulnerabilities are felt and to use this database as a way of dealing with flood conditions in the area. The Indian flooding scenario comprises tales of physical vulnerability that are lost among the mundane reports or data on floods. The real horror that makes the villagers feel endangered can only be understood through their narratives. These stories can form the basis of identifying the vulnerable groups and hence identifying their plights.



Map showing the Subarnarekha River and the villages surveyed between Chandrabali and Hatibari. Map courtesy of the author.

Methods of Surveying

The study involved visiting villages within the river corridor (around a one km buffer zone) at selected sites. All these villages are located in the lower part of the basin where the river dissipates onto the floodplain after leaving the plateau (which is within the alluvial zone of the river). The sites fall in the same homogeneous geologic unit. However, a micro-analytical study reveals variations in morphological aspects across this unit. The flood pattern is different; the intensity increases as there is a change in channel morphology downstream.

A structured questionnaire survey was conducted by the research group (researchers from Visva-Bharati University, who helped with the collection of the data), questioning people from different walks of life who lived very close to the river or had some kind of economic link with the river.[6] The data collection took place between the post-monsoon months of December 2015 to March 2016 and in December 2017 (in three phases). The interviews were transcribed and the narratives grouped under certain themes for a better analysis of meaning from their response. The objective of the study was to understand the general psychology of the people that made them stay so close to the river. This included finding out how vulnerable they felt, their memories of the experiences they had during floods, their attitude towards their environment, and their

views about the aid received during these flood events.[7] Using survey methods to attain this information, however, has certain disadvantages. It is not easy to communicate across barriers, and the village folk are reluctant sometimes to express their views. It is also difficult to extract all the information that is required for a thorough understanding. People are reluctant to speak as they feel that they would not achieve any material benefit from such interviews. Some are uninformed and have biased opinions that reflect their varied perceptions on the flooding situation. Sometimes it becomes difficult to express the gravity of a situation by just narrating incidents. But nonetheless, such an attempt was made to give more value to the voices that are usually ignored and to try to paint a more realistic picture of the situation. These narratives help establish how perceptions are created. The knowledge from these views can be used as a basis of a more comprehensive understanding of the flood conditions and can help in the formation of a more people-oriented mitigation program.

These oral histories were codified according to some themes on which the questionnaire was composed as well as the objectives of the study. [8] The following paragraphs deal with the themes that emerged after gathering information on the various perspectives.

Proximity to the River: Living within the River Corridor

The location of the village determined the responses of the villagers. Their psychology and flood vulnerability was molded by questions of “How safe do we feel?” during floods. All the villages surveyed are within one kilometer of the main channel that has been delineated as the buffer zone and considered most vulnerable to flooding in the lower course of the river.

The villagers are mostly poor, with agriculture and fishing being their primary occupation. They are dependent on the river for their livelihood and this ranges from agriculture and fishing to bathing and even sand extraction. “Everything we get from the river, we use: to build houses, to make food, to take a bath. The river is important,” explains Tapas Bauri, a fisherman.

Sand extraction by unscientific means is a common problem in some places. The sand is illegally mined, causing degradation in the river's health and the environment of the riparian zone of the river. Some portions of the river such as Sonakania have been degraded as extensive sand is being excavated from the bars and bed of the river. As a resident of Sonakania village recounts:

There is extensive sand excavation leading to massive floods and a degradation of the environment. It is an illegal activity and we have been unsuccessful to stop it. Last year a child died as he fell into an excavation pit when he and his friends had come to immerse idols (in the river) after a religious festival. I have tried to protest but to no avail. The sand miners are back after a few days of being evacuated by the police.[9]

The people living within a few meters of the river have this constant threat of floods, and such unscientific means of sand extraction increases this threat. Every year there are minor floods which affect the villages closer to the channel more than some of the other villages that lie farther away from the main channel. Some parts of the river are more vulnerable than the others due to active bank erosion during the floods, and here the flood narratives range from helplessness to harrowing tales as seen in Dakshin Dumurkhola village. A villager recounts:

Every year the floods come. They wash away our houses. Can you see where the river is now? Our village was located right over there a few years back. Each year we are pushed back bit by bit (as the river encroaches) and we lose everything and start from the beginning. The wall of water every year (during the monsoon floods) is our biggest fear.[10]



Sand excavation near Sonakania Village. Image courtesy of the author.

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The effects of the annual floods are less disastrous in villages having stone embankments. These embankments have arrested the bank erosion and prevent the flood waters from entering the villages (stone embankments are more common in Odisha). As recounted by a villager in Rajpur, “flood is not so frequent in our village, so we do not fear floods.” Flood losses are minimal in Rajpur in contrast to Saherbazar, which lies on the opposite bank. Thus, location of the village plays a major role in understanding the flood effects on the lives of the people.

The flooding regime, on the other hand, determines the land use practiced along the banks of the river. The land-use and land-cover changes in some of the regions have followed the patterns

of flooding. According to eyewitnesses’ accounts, a major flood in Gopiballavpur Village in 1978 destroyed a cashew (*Anacardium occidentale*) plantation when a mid-channel bar was submerged by the flood waters. In Kasturia village the villagers have changed their cropping pattern to accommodate the flood occurrences every year. A governmental project to build a resort on a mid-channel bar near Kasturia was being undertaken in 2016, which showed a lack of concern for the floods that occurred there. In contrast to the government agenda, the recent 2008 floods have left a major impact on the memories of the people, where a shift in the main channel has directly influenced the land cover of many parts of the river corridor.



A house submerged in the flood waters near Rajgat in 2008. Image courtesy of the author.

The 2008 Flood: Memories from a Major Flood

A major flooding event in 2008 is fresh in the memories of most of the villagers, and they describe this flood with a lot of emphasis and detail. Though eight years had passed, the event seems to have etched a place in the minds of most of the people. Even those who cannot recollect or are too shy to speak, when probed, nod their heads in assent, gesticulating about the water level during the flood. Some respond with emotions about the problems they had to face during the floods as their houses were washed away and they sought shelter in school buildings and on highways. The flood waters did not recede for four days, as recounted by most of the eye witnesses.^[11] A resident of Sonakania village says that the degradation of the river has led to an increase in the flood frequency as the natural flow of the channel was arrested and destroyed and the character of the channel has changed.^[12] The 2008 flood proved their fears. In parts of the corridor where the flood lessons were learned, some people instead of moving away from the corridor are opting to build brick and cement houses. The Indira Awas Yojana Plan (a rural development

plan for providing houses for the poor) is being implemented in some of the villages. The villagers feel safer living in brick houses as they know that the structures would survive even when the flood waters submerge them. Testimonials of the 2008 horrors are preserved in the actual form of two submerged houses near Rajghat. A villager recounts how the water levels rose in the secondary channel in 2008 (the secondary channel gets disconnected from the main channel during seasons of low water), submerging the two brick buildings on both sides of the road.^[13] These belonged to two brothers who fled the area after the incident. The houses were used as shops (as well as for residential purposes) and a lot of their goods were destroyed by the flood waters. The 2008 floods formed a benchmark for understanding and recollecting the events associated with the yearly flooding phenomena in this region which has been vividly etched in the memories of the villagers. The government needs to learn from these stories when acting on mitigation measures in order to understand the magnitude of the destruction caused by the floods.

Interaction among the Actors and Adaptation to Flood Situations

The Subarnarekha River is essentially not a very dynamic one: it is predictable and the people who live so close to her have learned to read into her ways and moods (gathered from the narrations of the villagers). The villages that are at close proximity suffer the direct brunt of the floods. In Dakshin Dumurkhola Village they have learned the lessons the hard way. Every year the flood waters reclaim more and more land. So the villagers found an indigenous means (locally devised way from locally derived materials) to combat this problem. A villager explains:

We make a temporary boundary wall with bamboo and mud. We use a plastic sheet as a

layer to protect the wall from getting washed off. This wall acts as a break to the first waves of flood water that enters the village. Thus the damage is partially reduced and we get the chance to move and seek shelter.^[14]

Living with the vagaries of nature is part of the lives of the villagers living in Dakshin Dumurkhola. Some harbor mixed feelings and blame their luck for their miseries. In addition, the government is blamed for inadequate measures to combat floods, be it their lack of concern to build and maintain embankments, lack of proper flood shelters, or inadequate warning systems for a speedy relocation. Most of

the villagers even feel that the compensation is inadequate and they debate about the nature of relief that is provided.

Interactions and perceptions vary not just between the villagers in the same area but between the different states. The Subarnarekha River flows mainly in the states of Jharkhand, West Bengal, and Odisha. The concern here was

the perception of different treatment among the states of Odisha and West Bengal through which the lower Subarnarekha River flows. There were varied responses. Some people seemed happy, but some perceived that the people living in the other state were better off in terms of flood mitigation received. However, it is of a great importance to analyze the relationships that exist between the villagers and the government.

Strategies and Tactics: Dealing with Flood Emergencies in the Public Sector

Jumla Seikh of Saherbazar: You are from the government? You are surveying? They come and survey and not do much... [Irritation] Come here when there are floods, then you would see for yourself how we live! [15]

Padmamoni of Sonakania: I tell the *Boro Babus* (officials) when they come to do something. They just survey and leave the place. They hardly look after the station [gauge] in front of my house. Can you please tell the *Boro Babus* about how we are living? Please help us! [16]



A temporary embankment near Dakshin Damurkholra. Image courtesy of the author.

The government plays some role in the flood mitigation plans including building embankments along the flood-affected banks, providing compensation after the floods in the form of food and some money, and converting the temporary houses into permanent structures. However, a lot more could be done according to the villagers. There is a general air of neglect and unconcern about implementing a proper plan for the flood aid that needs to be given.[17] The dissatisfaction among the villagers is clear from the above statements. It seemed that the word “survey” rings a bell to them, but this gives them a negative feeling about the surveyors. There are surveys that result in many plans implemented for quick relief during the floods. Primarily, food packets are supplied to the people after a flood and in some places some compensation of three

thousand to four thousand rupees (55.62 USD) is paid per family to repair the washed away or broken houses (cost of repairs are more than 1 lakh rupees or 1390 USD). A villager of Rajhati village (near Rajghat) speaks against the present state government which issues rations (subsidized food provision) on the basis of number of rooms per house rather than income or damage during the floods.[18] By this policy, a poor man with a mud house having more than four rooms in his house would not receive any government help during the emergency. There is a general feeling of neglect and selective mitigation meted out to the people.

One villager explains that “the help is inadequate. We suffer every year during the monsoons when we suffer heavy damage.”[19]



Fishermen weaving and repairing nets. Image courtesy of the author.

The ignorance of the bureaucrats about the actual situations that prevail is well reflected by the testimonials. They need to concern themselves not only with the flooding phenomena, but also

need to address the ecological losses that are inflicted upon the corridor. This loss has a close relationship with the flooding phenomena and can be historically justified from the accounts that have been cited.

Living within the River Corridor: Choices of the People

When given the choice to live close to the river or to move far away, there was a division of opinions. But even then, most of the villagers would like to stay despite the flooding problems in their area. People had learned to adjust themselves to the river's moods, and their lives had become so entangled with this environment that they could not imagine leaving.^[20] To the village folks, the question seemed incredible; they had not seen

much beyond their world that revolved around their homes. As Ramesh Khamri of Gopiballavpur Village narrates, "the river is important as we use its rock, sand, and soil for our livelihood. It is ingrained in our very system of living."^[21] Sand extraction adds an extra source of income and even the eroded pebbles sifted out of the rivers are used in their houses for construction purposes. Some people who are fishermen are directly



Shrimp fished out of the river. Image courtesy of the author.

dependent on the river for their livelihood. As recounted by Tapas Bauri of Kasturia village:

We use the river for fishing, irrigation, and bathing purposes. It is impossible for us to think of moving away. Where would we go, leaving behind our ancestral homestays, the only bit of land we have? We are landless people and we earn very little working in other people's land. The river is very important to us.[22]

By contrast, the badly affected villagers of Dakshin Dumurkhola would gladly move away if given an opportunity. These villagers lead a miserable life during the monsoons, losing their land every year to the floods, being pushed into abject poverty and misery. The less river-dependent villagers, such as those living in Saherbazar village near Jaleswar, would not mind moving somewhere else if they were given a choice. These people work in Jaleswar town for their livelihood and are not farmers or fishermen. The river gives



Residents of the flood-affected village of Dakshin Dumurkhola. Image courtesy of the author.

them little economic gain. They continue living in the ancestral houses of their forefathers, but given a choice, many would be happy to move away, as recounted by Khudinisi, a widow living in Saherbazar:

I have been facing problems of flooding but I am still staying in this place because I have no other place to go. If given an option I will move

away. The river is just used [by us] for washing clothes and bathing. [23]

The flood mitigation policies of the government are not effective, as the problem is looked at in a compartmentalized way and not a holistic one. The real long-term challenges are not addressed, as relocation is not considered as an option by the government. Hard structural engineering provides temporary relief to the people.

What the Future May Hold for the Voices: Hope?

The testimonials recorded in this research act as voices of these villagers, individual views that get lost in the masses and give a new meaning to look into the past.[24] The whole idea of talking to the grass-root level people helped the researchers to gain knowledge that was sometimes unexpected and shocking. The plight of the people inhabiting the lower Subarnarekha River basin became clear as the interviews helped in getting a better understanding of the situation at hand. The real picture of helplessness during the floods became clearer as people narrated their fear and anxiety, and this could be more easily related to the landscape and the natural processes that were taking place.[25] Site determined their decision to stay or move away from the river, because even if they felt vulnerable, many people are willing to stay as little option is offered to them. A general dependency on the river for earning a livelihood was pronounced. But it was seen that the locals were more than willing to move away if given

alternative options of livelihood that would clearly decrease their dependency. It was also seen that the vulnerability attached to the flood incident increased with the bank erosion conditions along the river. The villages that were situated on the eroding part of the river bank felt most vulnerable from flood situations. So the psychological trauma is directly related to the physical conditions that are seen in the area. The threat that the river poses on the villages like Dakshin Dumurkhola, the human-induced degradation of the river due to sand excavation in Sonakania and Gopiballavpur, and the submerged houses near Rajghat inspire villagers' own tales to recount the fear, loss, and helplessness during the floods. It is these voices that get lost in pages of governmental reports or flood data. Yet the narratives can form an important database for understanding more about mitigation programs that need to be implemented.

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- [10] Interview of a resident of Dakshin Damurkhola village (name not disclosed), 6 February, 2016.
- [11] Interview with Harimohan, farmer, interviewed by author 11 March, 2016.
- [12] Interview with Padmamani Devi, homemaker, interviewed by author 5 February, 2016.
- [13] Interview with Bholamalia, farmer, interviewed by author 11 March, 2016.
- [14] Interview with Munna Bauri, farmer, interviewed by author 6 February, 2016.
- [15] Interview with Jumla Seikh, businessman, interviewed by author 4 February, 2016.
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