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Impact Of The Riverbed Mining On Environment And Agriculture; In Reference To Dimapur District.

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Abstract:
River and its tributaries plays a pivotal role in agricultural activities supplying water needed for cultivations and other agro based activities. Nagaland being an agricultural economy depends mainly on the seasonal monsoon for cultivations and therefore in times of natural calamities as drought, shortage of monsoon rain; water from the rivers provides an alternative measures for cultivation but over the period, due to an excessive mining in the rivers for an extraction of stones and sands. The level of water bodies in the river has drastically lower and there is a huge proportionate decline in level of soil affecting the natural distribution of water to the field for cultivations. The deputy commissioner of Dimapur district has issued the directives prohibiting the riverbed mining in the district of Dimapur however, the mining in the village areas inhabiting nearby the rivers are rampant despite the ban and prohibition of mining imposed by the district administration. Natural resources as stones pose a danger of depletion. The construction of dam harms the natural vegetation, flora and fauna and therefore this need to be addressed and measures need to be taken up to combat and stabilized this rampant mining and depletion of natural resources.

Index Terms -: Riverbed mining, Sand Mining, Environment, Soil depletion, Natural resources

I.INTRODUCTION

River sand mining is the extraction of sand from the drainage network of a river by its nature, this practice has a long term negative impact and consequences on the environment leading to imbalance in bio diversity as well as environment of an aquatic and non-aquatic. Unplanned and rampant removal of sand from riverbeds amounts to destroying the habitat of microorganism biodiversity but are critical to soil structure, fertility, river course and vegetation. When we dredge sand, we are literally taking away their habitat and destroying nature balance that has been long existed.[1] The severity depends on the rate, type, and execution of the extraction, the actual impact arises when the extraction rate is higher than the rate of natural replenishment. According to the Geological Survey of India (GSI), riverbed mining causes several alterations to the physical characteristics of both river and river tributaries. This can severely impact not only the ecological equilibrium of a river but also damage plants, animals and human habitats. The aim of

[1].*Banning riverbed mining,* Eastern mirror, 07 October 2023, accessed 05 July 2023 https://easternmirrornagaland.com/nagaland-backward-tribes-commission-bill-2016-a-ploy-to-woo-enpo-people-in-view-of-2018-elections/

this paper is mainly to assess the growing sand mining activities taking place in around, Dimapur district of Nagaland and how this practice is having a severe impact on environment as well as the affecting the lives of the people, depleting the natural resources of the state.

Every day, truckloads of sand, gravel, stone, and boulders are extracted for a variety of reasons. one of the most important factors driving up demand in recent years has been the rise of construction activities in the state as gravel stone and boulders has become an important ingredient for construction purposes. Extensive river mining with machinery started in 2008 and the government has been receiving a royalty of rs.50 per truck. It is understandable that for economic development sand, gravel or boulders mining are inevitable but commercial mining can be done with certain check and balance but the so- called land owners have sold off the right to extraction along the riverbed to contractors from outside the state without any restriction and conditions. The landowners and contractors are more concerned for immediate profit and wouldn't care about the long- term effects of the damage they have done. Despite prohibition of sand mining without the requisite clearance from the required authorities and places limits on the quantities that can be mined, thousands of tons of sand is being illegally mined to meet the rising demand of construction industry and for extraction of minerals.

Fig.1.1.Riverbed mining in Dhansiri River, Dimapur.
(Source : Photographed by Author)

II. IMPACT OF RIVERBED MINING

Number of Natural calamities occurred due to excessive riverbed mining, One of such incident as collapse of Chathe Bridge raise a huge concerned, An executive engineer, of Dimapur division, ER Talitemsu Jamir, pointed out that extraction of sand gravel mining and boulders both upstream and downstream was one reason which led to the collapse of the Chathe river bridge on 11 July 2017 where four person was killed.[2] He also informed that the rate of scouring is such that the river bed level has decreased about 20 feet in 30 years since construction of the old bridge. He further added that 'even if the new bridge is completed, if mining activities continue it would compromise the durability of the infrastructure.[3]

Fig.1.2. Collapse of Dhansiri Bridge, Nagaland.
(Source : The News Mill/The New Indian Express)

The Sumi Aphuyemi Kuqhakulu Dimapur (SAKD) also opposed the sand mining on the riverside and said that the excessive mining has resulted in the collapse of the bridge and to avert such incidents in future, sand

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[2] *Iron Bridge Over Dhansiri River In Dimapur Collapses, At Least 4 Dead*, The News Mill, 11 July 2017 https://Thenewsmill.Com/2017/07/Iron-Bridge-Dhansiri-River-Dimapur-Collapses-Least-4-Dead/

[3] *Riverbed Mining Would Compromise Durability Of New Bridge Over Chathe*, The Morung Express, 26 July 2019.Accessed on 07 august 2024. also see bridge collapse: the day after https://morungexpress.com/bridge-collapse-day-after.

mining must be stop, More than 120 villages living over the other side of the river bank in the western area and urge to stop lifting of sand gravels without the further delay so as to avoid such kind of incidents.[4]

The Mining of sands, gravels, stones and boulders from riverbeds and riverbanks across the state has seen an unprecedented rise. "One of the most important factors for hike in demand in recent years has been the growth of the real estate and construction industries. Riverbed mining causes erosion and often leaves the river-plains much more vulnerable to flooding because it allows loose landmass to be washed downstream, especially during the monsoons.

The erosion and washing away of huge parts of soil during the monsoon season in Dhansiri and the Chathe river banks are some glaring examples. a drastic rise in the construction industry the activity of riverbed mining has reached alarming proportions in several areas of not only our state but in many parts of our country and even the world. From forcing the river to change its course, to affecting the groundwater tables and adversely impacting the habitat of micro-organisms, the ramifications of excess riverbed mining are many. The impact that it has on environment and ecology is far greater and far graver, cautions environmentalists and water conservation experts. Sand holds a lot of water, and when it is mindlessly mined and laden on to trucks, large quantities of water is lost in transit. Sand is important for ground water recharge, on a riverbed it acts as a link between the flowing river and the water table and is part of the aquifer. The negative impact of unlimited mining far outweighs the economic benefits. There is a perception that sand and boulders are useless and rivers have a lot of sand. This is incorrect, because they are crucial for the sustained existence of the river and perform many functions. When we dredge sand, we literally take away their habitat. Excessive riverbed mining disturbs the equilibrium of a river channel. The impact that sand mining, which is simply but theft on environment and ecology, cannot even be calculated. Excessive in-stream sand mining also causes degradation of rivers, therefore, there has to be periodic assessment of how much sand can be sustainably mined.

Excessive and uncontrolled riverbed mining may cause lowering of riverbed level as well as river water level resulting in lowering of groundwater table due to excessive extraction and draining out of groundwater from the adjacent areas. The water table level of Dimapur also is said to be decreasing drastically and water too has become heavily polluted over the recent years. Even the little rivers we have around are also disappearing and the few water bodies we had are all being filled up to accommodate the growing urban population. In the never-ending quest for growth and development all of this is being shored up by the rapidly dwindling banks and decreasing sizes of our little precious rivers of our tiny Nagaland.[5]

III. IMPACT OF RIVERBED MINIG ON UNDERGROUND GROUND WATER

Dimapur extending to an area of 927sq.km receives an average rainfall of 1140.6mm-1056.78mill cubic meter but 80% of rainfall amounting to 0.84 billion m3 are lost in streams only 20% i.e 0.21 billion m3 is retained in various forms in the context of Dimapur, the quality of ground water is stated to be alkaline in nature with ph level nearing to 7 which is permissible level.[6] According to northeast region report, the availability of groundwater in Dimapur was 15,320-hectare meter (2022) but since 2013, 286.6-hectare meters were withdrawn and if we only keep withdrawing all the water depositing back it will one day dry up as currently there is no replenishment, this is creating further complication for future generation who will suffer the consequences.[7]

As per the report of geology and mining department pumping water out of the ground at a faster rate than it is replenished over long term has caused various problems(.ground water level reducing in Dimapur 17 0ct 2017. Observing that unrestricted extraction of ground water in Dimapur will lead to water scarcity in the next 21 years if not checked. Limasunep, Joint Director in Directorate of soil and water conservation, Nagaland states that the survey of ADC court dimapur, 350 feet of layers of earth was dug beneath the ground for the bore well without any availability of ground water, this shows how much instability are being created in ecological cycle through the riverbed mining.[8] The Sand Mahaldars Supplier Association (SMSA) has informed that illegal sand mining has disrupted the uniformity of sand rates, with illegally

[4] *.120 villages affected by bridge collapse,The Morung Express, 13 July 2017, Accessed 07 August 2024* https://morungexpress.com/120-villages-affected-bridge-collapse

[5] *Jonah Achumi, Banning Riverbed Mining, Eastern Mirror*, 27 March 2016.

[6] *NTUCT calls for ban on riverbed mining,* The Morung express, February 24,2020

[7] *Unrestrained ground water extraction will lead to scarcity in Dimapur,* the Morung Express, Accessed 03 November 2022.

[8] Ibid.

mined sand being sold to Dimapur at prices lower than those fixed by SMSA. President of SMSA Jackson Kramsa stated that after thorough discussions and meetings with all sand mahals, they categorically fixed the sand rates. Those who procure sand from nearby mahals will pay INR 13,000 per 400 cft, while those sourcing from farther away mahals will pay INR 11,000 per 400 cft. SMSA vice president Harsing Hanse mentioned that there is widespread illegal mining in the sand business and that SMSA has been actively working to contain it.[9]

The Chakhroma GBs Union (CGBU) Also pointed out that due to random excavation of riverbeds, the ground water level has receded so much that most ring wells, are now drying up by the months of march and April every year and villagers are now facing acute shortage of water where there was once abundance of water, it added that many farmers who depend on these rivers for irrigation of their paddy fields are now abandoning their fields because the riverbeds are excavated so deep that farmers are not in a position to dig irrigation canals deep enough to reach the water level in the river.[10]

IV. IMPACT ON AGRICULTURE

Due to degrading of the river level above the level of the physical landscape, the supply of river water from the river bank to the field are now unparalleled . The farmer needs a machinery as mortar to extract water from the river to the field, that requires more financial assistance. Many farmers could not afford to procure such machinery and as a result, it affects their crop production and quality of farming. Dimapur in recent years has experience a low rainfall monsoon and to an extent of drought. The continuous mining has destabilized the dependence on the river water for farming by farmers. The western Sumi Youth Front has also appealed to the Government of Nagaland to declare the Western Areas as the Drought hiit area and asked the Disaster Management for a Spot verification. The WSYF informed that farmers in Western Sumi jurisdiction especially Aghunaqa, Khaghaboto and Kuhuboto areas are deeply worried with the scanty rainfall even after the onset of monsoon, which arrived late. Hunger looms large for the farming community although the State Agriculture Department has sounded an alarm over the drought-like situation in the state and are hopeful that the department has prepared a contingency plan for the farmers in case of worsening situation. [11] Rainfall being the major factor in the sowing/planting, growth and production of food crops, late arrival of monsoon and the insufficient rainfall thereafter has left the farming community in huge distress thinking about their survival for the next season, In 2021, The Nagaland government has declared the entire state a drought state of a moderate nature. the declaration of drought came into effect from September 15, 2021, and would continue to be in effect for six months.[12]

As per the statement given by Sunit Das, a senior scientist at Indian Meteorological Department (IMD), Regional Centre, Guwahati. Nagaland rainfall had a deficit of 24 per cent between June 1 and 19 August 2021. The 12 districts faces a deficient' rainfall with Dimapur 50 per cent below average, Longleng-35 per cent below average, Kohima-39 per cent below average, Phek-26 per cent below average, Tuensang-37 per cent below average and Wokha-21 per cent below average.

[9] Vivian Longki Rongpi, *SMSA calls for end to illegal sand mining affecting Dimapur market*, Eastern Mirror, 25 Jun 2024.

[10] *Riverbed mining would compromise durability of new bridge over Chathe*, The Morung Express, 26 July 2019.

[11] *Nagaland Govt. urged to declare 'drought' in Western Sumi area,* The Morung Express, 03 September 2021.

[12] Bhadra Gogoi, *Nagaland declared drought state of moderate nature,* Northeast Now, 8 February 2022. Also see, NSDMA, Declares Nagaland A Drought State, DIPR, Govt. of Nagaland.

Fig.1.3.Source: Down to Earth.[13]

Fig.1.4. North East Now/ Times of India.[14]

The other five- Kiphire receive 1 per cent above normal, Mon-8 per cent lower than usual, Mokokchung-9 per cent lower, Peren-8 per cent lower and Zunheboto-18 per cent lower had 'normal' rainfall. The state received 611 millimetres (mm) of rainfall during the period, against the normal precipitation of 806.5 mm.[15] The entire state, in fact, has been reeling under severe drought-like conditions this year. As many as 66,222 households spread across 12 districts of the state have been affected, according to the Nagaland agriculture department. The total area of land affected is around 49,448.85 hectares. Dimapur district is the worst affected: 9,408 households and 14,995 hectares of land have been hit hard. The total area of Nagaland is 16,579 square kilometers, out of which 947 sq km are under *jhum* cultivation. The delayed rains have hit about 915 villages, which include 686.62 sq km of *jhum* fields and 5.25 sq km of horticultural crops, according to the state agriculture department. Apart from *jhum*, terraced rice farming (upland) and wet terraced rice cultivation have also been affected. The state produced 551,000 tonnes of rice in 2020; it is expected to be around166,000 tonnes this year.[16]

As per the Nagaland Disaster statistics Report of 2023, an area of approx. 1840 hectres in 2018-19 were affected due to climate failure and approx. 1210.16 hectres in 2019-20 which dramatically increased to 104052.52 hectres in 2021-22. See the Table 1.1 &1.2.[17]

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[13] See.*https://www.downtoearth.org.in/water/-drought-like-nagaland-stares-at-water-scarcity-low-harvest-78594/https://www.downtoearth.org.in/agriculture/nagaland-paddy-farmers-worry-over-drought-like-conditions-79982.*

[14]Accessed 05 August 2024, See.*https://nenow.in/north-east-news/nagaland/nagaland-drought-state-moderatenature.htmlhttps://timesofindia.indiatimes.com/city/kohima/nagaland-declared-drought-hit-state-of-moderate-nature/articleshow/89442848.cms*

[15] Moa Jmair, *Drought-like' Nagaland stares at water scarcity, low harvest*, Down to earth, 23 August 2021.

[16] Gurvinder Singh, *Nagaland paddy farmers worry over drought-like conditions*, Down to Earth, 01 Nov 2021.

[17] *Water climate related incidents,* Nagaland Disaster Statistics 2023, 13 May 2024.

Table.1.1.Agriculture Affected Area by Drought for both Kharif and Rabi crops, 2021-22.[18]

Sl. No.	Name of the District	Agriculture Crops Area affected (in Ha)			Crops Affected	Cause of Disaster
		Total Agriculture Area affected where crop loss is 33% to 50% (in Ha)	Total Agriculture Area affected where crop loss is > 50%(in Ha)	Total Agriculture Area affected (in Ha)		
		Mild	Severe			
1	Dimapur	4560	28895	33455	TRC/WRC, Jhum Paddy, Jhum Maize & other Field Crops	Drought
2	Kohima	907.95	2019.9	2927.85		
3	Tuensang	4881	2212	7093		
4	Mokokchung	2170.9	844.1	3015		
5	Longleng	1689.5	858.5	2548		
6	Mon	1240	12366.7	13606.7		
7	Wokha	5055	8250	13305		
8	Peren	2057.5	1497.5	3555		
9	Phek	3143	1774.4	4917.4		
10	Zunheboto	3219.5	7390.5	10610		
11	Kiphire	6588	267	6855		
12	Noklak	1196.5	968.5	2165		
Nagaland (Total)		**36708.85**	**67344.1**	**104052.95**		

Source : Directorate of Agriculture Kohima, Nagaland.
(Accessed: Nagaland Tribune, 06.08.2024)

Table 1.2.Disaster Report on Drought in Nagaland, 2020-21.[19]

Sl. No.	Disaster type	Total No. of Incident Reported	Total No.of Affected Family			Total no. of Death	(Relief fund) No. of Beneficiaries (HH)		Total
			Male-Headed	Female-Headed	Total		Male	Female	
1	Dimapur	3	6	3	9		6	3	9
2	Kiphire	0	0	0	0		0	0	0
3	Kohima	0	0	0	0		0	0	0
4	Longleng	13	24	6	30		24	6	30
5	Mokokchung	0	0	0	0		0	0	0
6	Mon	43	91	46	137		91	46	137
7	Peren	2	5	3	8		5	3	8
8	Phek	1	2	0	2		2	0	2
9	Tuensang	0	0	0	0		0	0	0
10	Wokha	0	0	0	0		0	0	0
11	Zunheboto	1	0	1	1		0	1	1
	Total	**63**	**128**	**59**	**187**		**128**	**59**	**187**

Source: Nagaland Disaster Management Authority, Home Department Kohima.
(Accessed: Nagaland Tribune, 06.08.2024)

V. REASON FOR RIVERBED MINING:

The specific use of riverbed mining has increased manifold in Nagaland over the last few decades, mining of sands, gravels, stones and boulders from riverbeds and river banks across the state has seen an unprecedented rise, each day truckloads of sands and gravels are extracted for a variety of reasons from filling lowlands to building houses, roads, nullah , etc. One of the most important factors for hike in demand in recent years has been the growth of the real estate and construction industries. following a drastic rise in the construction industry the activity of riverbed mining has reached an alarming proportions in several areas of not only our state but in many parts of our country. from forcing the river to change its course to affecting the groundwater tables and adversely impacting the habitat of micro-organisms, the ramifications

[18] *Directorate of Agriculture, Kohima, Nagaland. Nagaland Tribune.* Accessed 06 August 2024.

[19] *Nagaland Disaster Management Authority,* Home Department Kohima.

of excess riverbed mining are many. The collapse of bridge in Dimapur was also attributed to riverbed mining and led to soil erosion that affected the foundational structure of the bridges. The economic benefits and profit earn from the exploitation of natural resources is another factor for excessive riverbed mining.

VI. MEASURES TAKEN TO CONTROL RIVERBED MINING:

A local group has raised an alarm at the damage along the riverbed of Dikhu river the effects of which is being borne by the people along the riverbanks. the department in consent and the government of Nagaland is asked to stop the riverbed mining in Naginimora and disallow any kind of machinery mining in other parts of the state of Nagaland. A business group, the finger print design and events, is undertaking a campaign for conservation of wildlife and environment. Members of the group informed on that they visited Dikhu river in Naginimora, in Mon district to observe the devastation done because of the riverbed mining. The Naga Tribal Union Chumoukedima town in 2020 demanded the district administration for a strict enforcement of the order banning the use of heavy machinery for extraction of resources in Dhansari and Chathe river within Dimapur district. The union also account that the concern administration is not bothered to either oversee the effectiveness of its own order or check if it is been implemented. The constant flow of heavy machinery and boulder laden truck along the river and its upstream tributary made the water muddy and contaminated throughout the year.20 It is to be highlighted that the Administration has completely banned mining of sand/boulder in rivers of Dimapur district in the previous years and another order to this effect was also issued on 29thJuly 2021. [21]

On 03 March 2023, Naga United Village (NUV) council chairman sent a representative to DC Dimapur seeking complete ban on 'wanton extraction of sand gravel at Chathe' near great commission hr. secondary school that threatened to wash away roads leading to Razho and Lusie khel and has also damaged several buildings situated along the river banks. A resident in Siethekima also reported on the danger of houses on the verge of being wash away. It was also observed that there were no concrete embankments along the river to prevent further erosion. Naga tribal union Chumoukedima town appealed to the DC to take cognizance of the extraction of gravel and boulders from the river from Jharnapani up to Sirhima village bridge, which made the water muddy and unfit for use by several village situated along the highway.[22]

The DC Dimapur in an order stated that the ban was being enforced in order to preserve the rivers and its resources, address the issue of inundation of flood water to the surrounding villages and colonies along the river bank and to avoid damage to public assets like bridges etc. DC stated that special focus would be on 200 metres upstream and downstream from existing bridges/culverts.23 DC cautioned that failure to adhere to the order would result in prosecution as per appropriate section of law including seizure and confiscation of machinery and equipment.

Taking serious note of destruction of ecology and riverbed due to rampant extraction of boulders and sand gravels in streams of Dimapur district, the Deputy Commissioner(DC) Dimapur, Rajesh Soundararanjan has completely ban extraction of resources in the rivers and streams of the district but despite doing so, there has been report of illegal sand mining.[24] Dhansiri River Flood Control Board (DRFCB) has expressed concern over continuous extraction of soil at Dhansiri riverbed. In a press release, DRFCB chairman Hokheto Kiba and vice-chairman (PRO) Hekuto Wotsa pointed out that despite deputy commissioner (DC) Dimapur order banning extraction of soil with machinery, there was still an extraction going on behind Circuit House at Dhansiri riverbed. In pursuance to the resolution of district enforcement committee (Regulation of Extraction of Mineral Resources on Riverbed) dated March 22, 2016, the DC Dimapur had issued an order banning the use of machinery for extraction of resources (sand gravel, boulders) in Chathe and Dhansiri River within Dimapur with effect from April 1-30, 2016 for preservation of the River and River recourses.

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[20] *NTUCT calls for ban on riverbed mining*, Nagaland Post, February 22, 2019.

[21] *DC Dimapur Warns Against Mining Of Sand/Boulder*, DIPR, Govt. of Nagaland.

[22] *Yungtze - A Tale Of Rivers - Memories Of The Chathe River*, NE Water Talk, 27 March 2023.

[23] *Cc Dimapur Bans Riverbed Mining*, The Naga Republic, 25 August 2021.

[24] *JCB seized for illegal mining in Dhansiri river*, Nagaland Page, 24 August 2021.

DRFCB said such act violated the order of DC and enforcement committee and demanded that immediate action be taken against those violators.[25]

For the last several years, many organized groups have been mining and extracting boulders from the riverbed without any apparent government sanction. Hundreds of trucks laden with sand and boulders make their rounds along the chathe river. The chathe river fulfills multiple needs especially of those who depend on it for their livelihood. Fishing is one of the most common activities that can be noticed along the riverside. Many local people also gather snails and other edible aquatic plants. Elders said with fond nostalgia that in the past hundreds of people live on fishing and collecting snails from the Chathe river they got enough food for both consumption and sale. However they said the quantity of catch drastically decline due to river pollution and over exploitation, it was also learned from the people residing nearby rivers that around four houses and granaries were washed away last year, resulting in loss of property worth several lakhs rupees.

VII. FINDING AND SUGGESTION:

As per the customary law of the Nagas. The land area of the village exception of the land granted to an Individual. The village chief or goanbura has an authority over the crown land that belongs to the village. So this traditional authority and ownership led to the exploitation of natural resources by a concern individual for fulfilling their vested interest. So more awareness about the depletion of natural resources should be given to the villagers and government should instill a mechanism to monitor the exploitation of such resources. Until the impact of the greed of a person be addressed and made them aware of the disaster that is going to affect the entire generation, illegal mining will continue unabated and a greater disaster awaits ahead if proper initiative and action are now taken by now. Mining in Nagaland is mostly done to combat the rising high rate of import sand from Karbi Anglong. Sand prices shot up with the shortage in supply. Karbi Anglong announcing an over three-fold increase in price. From the existing Rs 32 per cubic feet (cft) at source, the rate was hiked to Rs 110 per cft sparking a supply crisis in Dimapur. Going by this rate, retailing of sand from Manja would touch Rs 200 per cft in Dimapur.The price of sand from Manja was Rs 32-35 at source. Accounting for fuel, labour and transport cost, "gate kharcha" (expenses), statutory tax, the cost of shipping it to Dimapur came to Rs 55-60 per cft before retail.[26]

VIII.CONCLUSION:

Rivers and streams are dynamic waterways that are always changing, part of this change occur during river bank erosion. River bank erosion occurs when water wears away at the banks of a river .To assess the impact of river sand mining it is necessary to understand the underlying process. Sand might seem like abundant resources, after all our desserts appear to be filled with it. Unfortunately, sand that has been subject to wind erosion such as dessert sand is rounded and therefore less suitable for construction purposes. Construction-grade sand must be angular and should have a certain mineral composition, hence the particular interest in river sand, which has a wide range of particle sizes and mineral properties. Environmental consequences of riverbed mining, River mining basically removes the channel of the river from the riverbed. It leaves behind a flat, featureless plain with virtually no place left for many, if not most of the river fauna to exist. The flattening of the river channel resulting from riverbed mining allows the river to spread out over a large area creating a much shallower water depth than would normally be present. When the natural channel of a river is destroyed, water spreads out over a larger area, its speed increases, relative to the stream bottom. As consequences of indiscriminate mining of riverbeds, a number of public and private properties in the area have been washed away mainly due to river bank erosion having an adverse negative impact on environment destroying the main source of water for agro based farming and agriculture..

[25]*Riverbed mining continues*, Nagaland Post, April 10, 2016.

[26]*Sand traders from Dimapur and Manja scheduled to meet*, Accessed 06 August 2024, https://morungexpress.com/sand-traders-from-dimapur-and-manja-scheduled-to-meet

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