# Threats and Management of Prehistoric Landscape in and around Galudih area in Purbi Singhbhum district of Jharkhand

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## Abstract

Chota Nagpur Plateau is very fertile zone for human habitation in the Eastern part of India. Evidences of human inhabiting this area are available since the origin of *Homo sapiens sapiens*. Singhbhum region belongs to the lower part of the Chota Nagpur Plateau. The region has yielded prehistoric human cultural remains over more than a century with the discovery of first Neolith by Captain Beeching in 1868.

Present work is an approach to study few prehistoric sites found in and around Galudih area of presently eastern part of Singhbhum region i.e. Purbi Singhbhum District of Jharkhand. The study tries to focus on the landscape of these prehistoric sites that might probably have facilitated human habitation here since ages. Beside this present work also tries to address different threats related towards the destruction and management of archaeological heritage and associated landscape of these sites. The objectives are fulfilled by direct observation during fieldwork and topo sheet and google map study in order to understand the landscape and identify problems leading to damage and suggest probable measures for their protection.

**Keywords-** Landscape, Habitation, Threats, Management, Heritage, Map.

## Introduction

Landscape Archaeology broadly shows human having a continuous interaction with its surrounding environment hence shaping their natural surrounding and vice-versa their own lives (Wagstaff, 1987). It focuses on components like soil, slope factor, distance to water or other resources favorable for human settlement (Adams, 1990). Landscape approaches in archaeological study began during 1920s but flourished during last two decades of the century and thereafter. Various scholars defined landscape in many ways focusing on ecological habitat, built environment, integration of subsistence and settlement and many more (Anshuetz *et.al*., 2001; Walker, 2012; Cooman et.al., 2019). Archaeological action focusses on landscapes since archaeologists took into consideration landscape of the archaeological sites in order to understand its dynamic conditions during past and present that help them also to predict their future conditions (Dalgish, 2012). Fleming in his recent work

sketched the roadmap of futuristic research works in landscape archaeology based on SWOT (Strength, Weakness, Opportunity, Threat) Analysis including post-modernism and cognitive approaches (Fleming, 2012).

In Indian subcontinent archaeological work focusing on landscape has been carried out by researchers like Shaw, Morrison, Arjun and any more (Shaw, 2004, 2017; Morrison, 2015; Arjun, 2016). The term 'Cultural Resource' and 'Management' was started being used since 1972 and 1974 respectively. Culture Resource Management (CRM) is defined as the utilization of art of management like planning, organizing, directing, controlling and evaluating in order to protect and preserve cultural heritage for betterment of peoples of America (Wildesen, 1980). Cultural Resource Management (CRM) works began to flourish as an archaeological discipline in United States since 1974 in accordance with Natural Resource Management (Fowler, 1982; Mondal, 2021). In India CRM work has been taken into consideration since Pre-Independence without any formal terminology. Sir William Jones showed interest in Indian archaeological heritage since the establishment of Asiatic Society in 1784. Alexander Cunningham, father of Indian Archaeology and first director of Archaeological Survey of India began systematically investigating Indian archaeological heritage since early 1848. Preservation of Indian Archaeological Heritage since 1873 by a circular given by Central Government to local government in order to protect and preserve Cunningham's assigned historical and architectural valued properties (as cited in Mondal, 2021).

**Review of Literature**

With the discovery of first Neoliths by Captain Beeching in 1868 in Singhbhum area and revisited by Ball in the same year (as cited in Ghosh, 1970); several works have been carried out here by different scholars focusing on the various aspects like general cultural background and typo-technology of the artifacts found from the area, stratigraphical and geomorphological analysis in order to understand paleo-environment, human-environment relationship in prehistoric time period in this area (Anderson, 1917; Sen, 1950; Sen and Ghosh, 1960; Sen *et.al*., 1962; Ghosh, 1970; Ray, 1978; Ray et.al., 1993; Chakrabarti, 1993; Chattopadhyay and Saha, 2004; Bhattacharya, 2014; Dutta and Mondal, 2018, 2021; Mahato and Mondal, 2020, 2021).

The focus of the present paper is given to understand the landscape associated with the five prehistoric sites mentioned later on in and around Galudih area in Purbi Singhbhum District of Jharkhand. It also tries to find out different types of threats leading towards the destruction of the landscape and thereafter to suggest probable remedies for it protection.

**Objectives**

The objectives of the present study are to:-

- Understand the landscape of the site and its surrounding area that facilitated prehistoric human settlement in the area.
- Identify the threats causing destruction of the landscape hence leading towards the extinction of the prehistoric sites.
- Suggest probable measures for the management of the landscape thus protecting prehistoric sites.

**Methodology**

To fulfil the present objectives both primary and secondary data were collected. Primary data was collected directly from the field. For collection of primary data archaeological field work methods and techniques were used.

- Surface survey was carried out with the help of compass, GPS (Global Positioning System) and topographical and google maps.
- Observation of the associated landscape of the sites agents of its destruction.
- Recording of landscape and sites by means of photographs.

**Studied Area**

The present study is conducted in five different prehistoric sites in and around Galudih area of Purbi Singhbhum (22°12′N to 23°01′N and 86°04′E to 86°) district of Jharkhand. All sites are under the inspection of Galudih police station and have a common post office Galudih (Mahulia). The flora and fauna observed in the areas are mango, date palm, *palash*, *sonajhuri*, dry bushes, bamboo, types of conifers, etc.; sheep, hen, dog, cow, pig, goat, buffalo, etc. respectively.

The five sites are as follows:-

- Left Bank of Subarnarekha River Valley near Galudih Barrage (22°19′N and 86°5′E; Elevation-approximately 100m MSL).
- Foothill of Lakridungri Hillock(22°39′N and 86°24′E; Elevation-130m MSL)

- Chandrarekha Village (22°39′N and 86°22′E; Elevation-98m MSL).
- Khasidih(22°64′N and 86°39′E; Elevation-102m MSL)
- Jagannathpur(22°37′N and 86°25′E; Elevation-100m MSL)

**Left Bank of Subarnarekha River Valley near Galudih Barrage**

As the name suggest the site is located on the left bank of Subarnarekha River just on the south-eastern side of the Galudih Barrage (Fig. 1-2). The area showed five riverine terraces $T_1$, $T_2$, $T_3$, $T_4$ and $T_5$ i.e. the present river-bed in the 2017 fieldwork. The area is mostly covered with red-yellow and lateritic soil. Beside this alluvial soil is also scantily found in $T_3$ terrace. Varieties of rock like quartz, quartzite, mica, schists, milky quartzite were found scattered in the area.

Two types of stratigraphic sections have been observed in the area. The first one shows the lower-most Pre-Cambrian bedrock topped by a gravel layer of humid phase finally topped by a silt layer of dry phase. A thin layer of gravel lens has been present in this silty layer indicating presence of a short wet period at the end of Pleistocene. The second stratigraphic section showed silt mixed with ghutting indicating end of Pleistocene and beginning of Holocene. It is topped by a thin alluvium layer that might have been deposited in the Post-Pleistocene Period (Ghosh, 1970). The site yielded varieties of prehistoric cultural remains. It included different types of scrapers like side, end-cum-side, denticulate; point; notch; Mousterian point; microlith; blade and many more. Beside these few potsherds were also found.

- **Present Observation-** At present the area is used by local people for their daily chores like defecation, bathing, washing, animal grazing and also for recreational purposes. They used the area for dumping their daily garbage. A canal has been constructed running parallel to the river leading to the complete extinction of $T_1$ & $T_2$ river terraces at present that were observed in 2017. Beside this the river is also continuously changing its course minutely leading to the erosion of soil at the beginning and later on to the complete cutting down of the landscape.

**Foothill of Lakridungri Hillock**

The site is situated just on the eastern side of NH-18 opposite Galudih *Haat.* The landscape is undulating in nature and is sloping southwest towards the Subarnarekha River. It is situated at an approximate distance of 1km from Subarnarekha river (Fig. 1-2). The site was formed

during Pre-Cambrian and Archaean Age and showed presence of reddish, yellowish-sandy and lateritic soil. Varieties of rocks like quartz, quartzite, milky quartzite, etc that might have acted as raw material for making artifacts were present.

In the surrounding foothill region of the hillock two stratigraphic sections have been observed. The first one showed unsorted pebble and gravel mixed with kankar lying in sandy matrix topped with a yellowish silty layer. It indicated wet and dry climatic phases at the time of their deposition respectively. The second one shows presence of pebble sized lateritic gravel sometime in conglomerate form. This wee formed during late Pliocene till early Pleistocene (Ghosh, 1970).

Different types of Abbevilian and Acheulean hand axes, side scraper, end scraper, side-cum-end scraper and round scraper, cleaver, chopper and cores were found scattered in the area.

- **Present Observation-** During the fieldwork conducted in 2017 it was seen that the entry to the actual Lakridungri hillock was restricted since due to developmental work taking place there. As a result exploration was only carried out in the surrounding foothill region of the hillock. Thereafter, in the successive years the entire hillock and its surrounding landscape has been destructed due to construction of cement factory build just beside it. As a result, continuous cutting down of the hillock and clearing of plants and trees has been noticed in the area. It leads to not only erosion of the soil but also complete dislocation of prehistoric cultural remains stored here.

**Chandrarekha Village**

The prehistoric landscape is undulating in nature and is located just on the eastern side of river Subarnarekha from where it gradually slopes west into the river. The site is surrounded on its North, South, East and West by railway-bridge, Siddheswar Pahar (hillock), brick kiln and Subarnarekha river respectively (Fig. 1-2). Silty and alluvial soil of comparatively dry phase of late Pleistocene and early Holocene period has been found here (Ghosh, 1970). In the silty soil numerous microliths like lunates, triangle, burin, awls, etc. were present; whereas the alluvial sol yielded potsherds, iron slag and few terracotta sinkers, etc.

- **Present Observation-** The terrain of the area is eroded and cut down due to changing river course. The silty soil yielding microliths is destructed and eroded due to excessive deforestation and brick kiln situated just on the eastern side. Continuous cutting down of soil is taking place for making brick and for extending railway tracks in the area. The alluvium layer observed in 2017 was completely destructed in the very next year for construction of new railway tracks.

**Khasidih**

The prehistoric site of Khasidih is situated just on the bank of river Subarnarekha. The landscape is actually encircled by the river in two sides that provide natural protection to prehistoric communities living here (Fig. 1-2). The terrain is undulating and sloping from north-east to south-west towards the river. On South, East, North-West, and North-East of the landscape Subarnarekha River, Galudih Barrage, Chandrarekha village and Ulda village are respectively present. In sandy lateritic soil mostly filled with pebbly stone varieties of microliths like lunate, awl, burin, micro point, notch scraper, blade, etc. were present.

- **Present Observation-** Agricultural field are located just beside the higher lateritic terrain yielding prehistoric remains. Regular digging of the soil during cultivation leads to soil erosion and dislocation of cultural material. People are moving on the tracks situated just beside the site by means of two wheelers. Changing river course is hugely eroding the soil and cutting the landscape leading.

**Jagannathpur**

The site of Jagannathpur is situated just beside the river Kundra (locally called as *Kondor Nalha*) a tributary of river Subarnarekha. The river originated at Paharpur, approximately at a distance of 10km from north-eastern side of Jagannathpur (Fig. 1-2). It is basically a rain fed river and it flows decreases near the site due to heavy deposition and meandering activities. Quartz and quartzite rocks in the form of different shapes and sizes of pebbles and gravel is present in the area that were probably used as raw materials for making tools by prehistoric men living in the area. The soil is sandy-yellowish in nature. The area unveils two similar stratigraphic sections first one naturally exposed and the later one was found after doing a trial trench and step trenching. The lowermost layer was mottled clay i.e. decomposed bedrock over a longer period of time topped by a fertile loosely packed gravels and pebbles in the matrix that is finally overlaid by infertile silt layer. The stratigraphic section present showed the presence of alternative wet and dry climatic conditions at the time of their deposition in late Pleistocene Period (Ghosh, 1970).

Overall the fertile gravel bed from both the sections yielded few Middle Palaeolithic chopper, scrapers, hand-axe on flake, blade, bladelets, awl, fluted core, few unfinished tools and a hammer stone.

- **Present Observation-** The landscape is almost destructed due to construction of water reservoirs and cutting down of trees and soil for exporting it to other places from the present area as said by the local people. At present the *Kondor Nalha* is completely dried up in places especially towards the highway due to dumping and filling up of *Nalha* by soil and garbage for easy movement of heavy four wheelers around the area. The heavy vehicles are mostly used for carrying the soil from the region. Beside these local people are using the area and river for their different daily chores like defecation, bathing, washing, animal grazing and also for recreational purposes.

**Landscape and Surrounding Environment of Prehistoric Sites**

All the above mentioned five prehistoric sites mostly have undulating terrain and are situated just beside any water source either River Subarnarekha or its tributary river Kundra. Only foothill of Lakridungri hillock is situated approximately at a distance of 1KM from the river Subarnarekha. All the sites are surrounded by hilly jungle area on both the sides (Fig. 1-2). The region have scattered gravels and pebbles of quartz, quartzite, schists, mica, milky quartzite and many more. These gravel and pebbles are transported and deposited by river in several terraces in due course of time or dislocated from outcrops within the hillocks. Prehistoric communities living here used them as the source of raw materials for making artifacts that helped them in their subsistence pattern. They get water from the nearby water source, food from the games and different varieties of edible grasses and grains present in the surrounding jungle areas. Beside these they also acquired firewood just like present population from the dried out branches, leaves of trees and shrubs from the jungle. The encircling of the prehistoric landscape by the course of river provided natural protection to the prehistoric human staying in the area.

**Threats Related to the Destruction of the Site and their Associated Landscape**

Prehistoric sites are immensely destructed in our country mostly due to lack of proper legislations as found in case of various historical monuments, architectural properties and antiquities. Natural agencies of destruction like minute gradual changes in the course of the river are continuously eroding the soil by forming numerous narrow gullies through which water flows. In due course of time these gullies keep on broadening itself and finally two adjacent gullies join together and completely cut down the terrain, soil in between them leading to the destruction of landscapes (Fig. 3).

Lack of awareness about the natural prehistoric heritage is seriously noticed among the local peoples. They are accidentally or intentionally creating many human agencies of destruction

for these prehistoric landscapes. They are using the area for performing the daily chores like bathing, washing clothes and utensils, defecation, etc. in the region. They used the area as a place for grazing their animals which lead to the loosening of the soil. The neighboring people also used this area for dumping their garbage. Occasionally they also used the prehistoric landscape as their recreational center. It is mostly observed at left bank of river Subarnarekha near Galudih barrage and at Jagannathpur (Fig. 3).

Cultivation is been actively practiced by local people in the adjacent landscape yielding prehistoric cultural remains at Khasidih (Fig. 6). Continuous tilling and digging activities during agricultural process result loosening of soil leading to its easy erosion. People are also moving in two wheeler on the narrow un-metaled path running beside the prehistoric site since it provide as easy shortcut to their respective destination ultimately leading to destruction. Trees and shrubs help to hold the top soil intact and protect it from heavy rainfall or gusting winds. But extensive cutting down of trees, shrubs, soil, hillocks in order to clear the land for various developmental processes like agriculture, construction of railway track, brick kiln, cement factory, reservoirs, canal and many more are observed at all the sites (Fig. 4-8). Due to this prehistoric landscape is destructed by excessive erosion of soil ultimately leading to the washing away of cultural remains of prehistoric time period stored here since ages and losing their original context.

**Suggestive Measures for Protection of the Sites and their Associated Landscape**

It has been observed that limited funds are allocated in protection of any prehistoric sites. Therefore alternative measures by means of public archaeology should be taken into consideration. Local people should be properly aware to protect their own landscape and prehistoric heritage. With proper awareness, local people would stop using the prehistoric landscape for their daily chores, dumping of garbage, recreational purposes, cultiv3ation in the adjacent areas, cutting down of trees, clearing of shrubs and digging of soil for agricultural purposes. They will also optimize the use of any type of vehicle at the site and its surrounding landscape.

Getting properly aware locals will not only refrain themselves but will also stop outsiders from destructing the landscape by cutting down of trees and soil for any developmental purposes any prehistoric landscape and associated sites.

Tourism focusing on these prehistoric sites and landscape involving local people should be done. It will not only protect the prehistoric heritage of the area but will also benefit local people financially. As a result they will also get interest in protecting their own cultural heritage since it would become a means of their earning. And lastly, Government and private authorities before initiating any type of developmental works in these areas should concern authorities having proper archaeological knowledge so that they can survey the landscape and give necessary suggestion to minimize the destruction of the resources while carrying out the developmental project works in the region.

**Discussion & Concluding Remarks**

Present research work focusses on the landscape on the prehistoric sites Left Bank of Subarnarekha River Valley near Galudih, Foothill of Lakridungri Hillock, Chandrarekha Village, Khasidih and Jagannathpur near Galudih in Purbi Singbhum district of Jharkhand. All the sites except one are located on undulating terrain either beside river Subarnarekha or its tributary Kundra. Foothill of Lakridungri is situated beside national highway opposite Galudih Haat and is at a distance of approximately 1KM from river Subarnarekha. All the sites have resources of survival (food from jungle, water from river and raw materials for making tools from river or highland hillock) present nearby. Perhaps proximity to source of water, availability of tool making raw materials, games in the jungle attracted pre-historic people to live in the area for a long time. The landscape is encircled by the stream, which gave protection to the people.

Excessive exploitation of the landscape by local people and various developmental projects together with changing course of river are observed as the greatest threats towards the destruction of associated landscape and sites. Proper awareness of people staying there about their own heritage landscape by utilizing public archaeology, encouragement of tourism industry based on focusing on prehistoric sites and adequate intervention by knowledgeable authorities of ancient landscape before commencement of any type of developmental projects in the area will be helpful to decrease the level of destruction. And lastly further investigation on landscape by applying proper GIS analytical tools like ArcGIS, QGIS, etc. would be helpful in getting better information about landscape that helped in prehistoric settlement in the area on micro level and Eastern India on a macro level.

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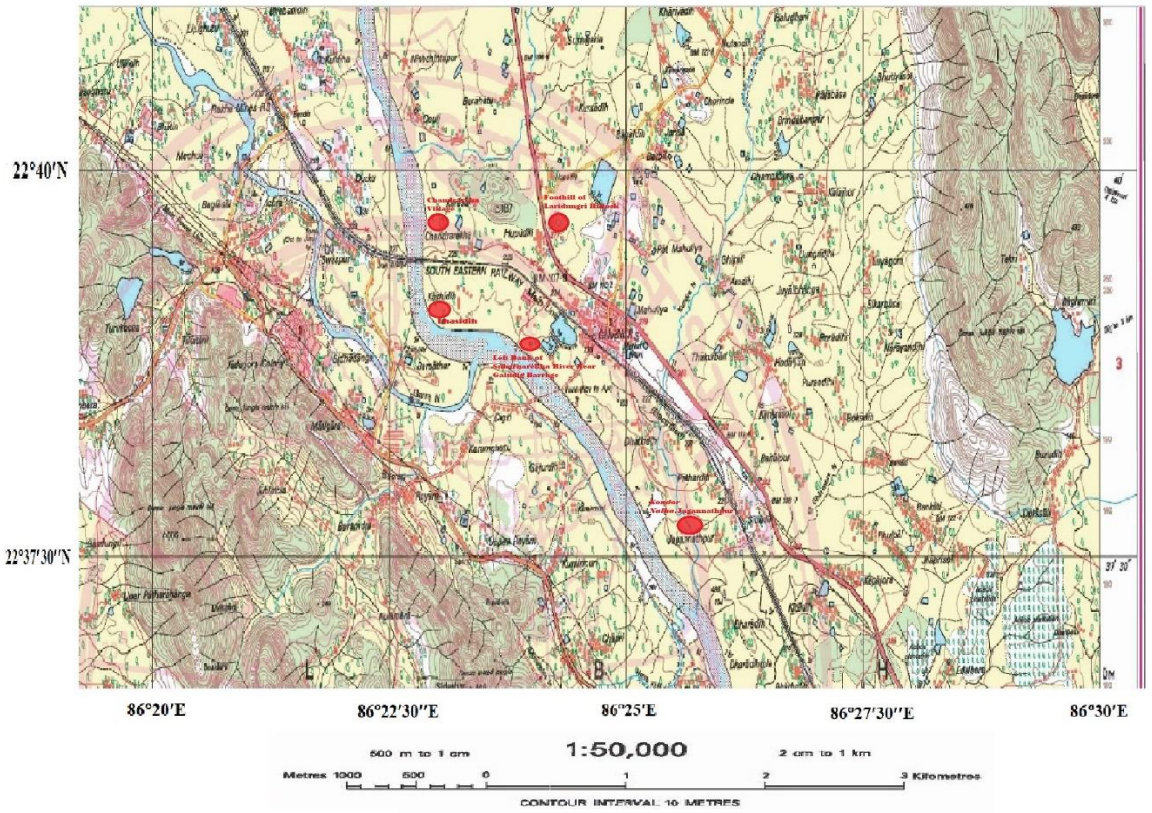
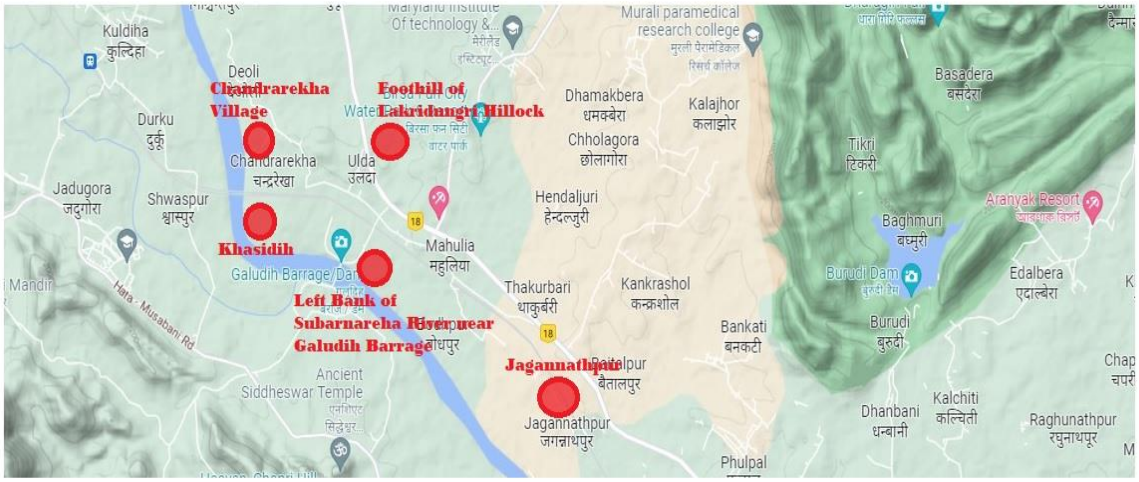



**TOPOSHEET NO:- 73J/6**

**Fig. 1: Location of the sites in Topo sheet No.73J/6 (Survey of India, 2009)**




**Google Map** **Not To Scale**

**Fig. 2: Location of the sites in Terrain Map of Google**

**Fig: 3**

**Fig: 4**

**Fig: 5**

**Fig: 6**

**Fig: 7**

**Fig: 8**

**Fig. 3-8: Different Natural and Human Agencies of Destruction (narrow gullies, grazing animals, dumping of garbage, construction of railway track, brick kiln, agricultural field and cutting down of hillock and soil)**