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Investigating the Landscape and Settlement of Rajpur: A Spatio-Temporal Study of an Early Medieval Settlement from The Brahmaputra Valley

Preetee Sharma¹ and Lohita Bala Hajong²

Assistant Professor, Dept of History, Cotton University, Guwahati, Assam, India

PhD Research Scholar, Dept of History, Cotton University & Assistant Professor, Dept of History, Nirmal Haloi College, Bajali, Assam, India

Abstract: *This paper has attempted to document and analyse the material landscape of early medieval Rajpur which is located in the West Garo Hills district of Meghalaya in India. Through a systematic surface survey, the paper documented and mapped the material and structural remains of this site with an aim to understand its settlement patterns. By analysing the distribution of artefacts, especially pottery and architectural features have provided a comprehensive understanding of the historical landscape of Rajpur. In this paper also utilized the data pertaining to the pottery density and the density of other material remains to identify the habitation area within this fortified settlement. Also, the stylistic attributes of pottery have been explored for possible linkages across the Brahmaputra valley. Overall, this study explores the nature of settlement pattern at Rajpur during the early medieval period.*

Keywords: *Systematic Surface Survey, Landscape Study, Pottery Distribution Study, Settlement Pattern, Early Medieval Archaeology, Brahmaputra Valley.*

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Introduction

This paper is an attempt at understanding the material landscape of an early medieval settlement called *Rajpur* from the West Garo Hills district of Meghalaya in the northeastern part of the Indian subcontinent. *Rajpur* is an archaeological site protected by the Department of Arts and Culture, Meghalaya (hereafter TDACM). It is located in the west Garo Hills district of Meghalaya and situated on the bank of the river Jinjiram, a tributary of the river Brahmaputra (see figure 1). The site was excavated for a season in 1992 by the Prehistory branch of the Archaeological Survey of India (hereafter ASI), Nagpur (Sharma 1993). The excavator dated the beginning of this site to a period before the

second century BCE (Sharma 1993:75) till about 12th -13th centuries CE (Sharma 1993:21) on the basis of excavation findings using relative dating techniques. Though, the present study does not have any absolute dates from this site till date. According to A K Sharma, Director of the 1992 excavation, after 13th century CE there was a change in the river course which led to flooding of the site and the possible destruction of the ancient site (Sharma 1993:21).

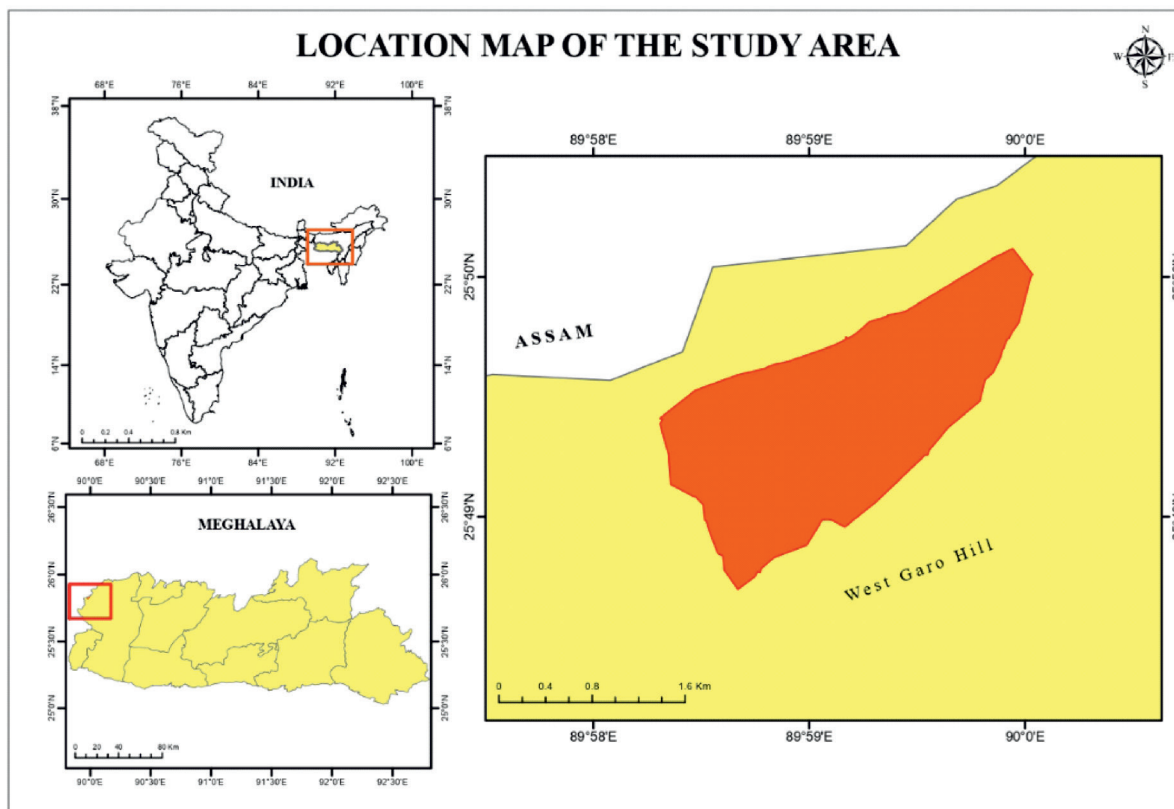


Figure 1: Figure showing the inset map of India identifying the study area.

The beginning date of this site to a period before the second century BCE by Sharma is on the basis of handmade pottery which he found similar to the site of Sekta in Manipur and a few other sites from the Indo-Gangetic plains (Sharma 1993:75). Further, the architectural style of the two temple structures unearthed during the excavation were interpreted by Sharma as showing Pratihara-style affinities. On that basis, he has dated the temple structures to the period of 7th to 11th centuries CE (Sharma 1993:38). The excavators also identified three chronological phases of construction in the excavated fortification without specifying the exact dates of these phases (Sharma 1993:26-28). Further, they reported three pre-stupa habitation layers from below the stupa structure. The three layers yielded brickbats, fine greyware pottery, some made of kaolin, charcoal, animal bones and refuge pits (Sharma 1993:75), though the exact dates of these layers have not been provided. It would have been more meaningful, if the excavator could have done the relative dating by taking into consideration the regional stylistic attributes of pottery and other material, but it was not attempted. On the basis of the excavation findings, Sharma argued that this site was probably one of the most prominent urban as well as religious centre of this region. He also claims that the peak period of habitation at Rajpur was between 9th to 11th centuries CE (Sharma 1993:22).

Other scholars such as, Bhuyan (Bhuyan 1972-1973:11-12) and Sharma (Sharma 2018b:312) both suggest on the basis of their study on terracotta plaques and pottery respectively, that the site dates

back to the early medieval period, specifically the 10th-12th century CE, based on the stylistic patterns. Bhuyan explicitly argues that the style and pattern of terracotta plaque such as the ones at Rajpur chronologically belong to the early medieval period. Similarly, Sharma also found stylistic similarities between the pottery deposits of Rajpur with other early medieval sites from the Brahmaputra valley such as Ambari, Rajpat, Garhdol, Paglatek and Surya Pahar.

This study comprises firstly, a detailed survey and documentation of the material landscape of the area and secondly, a systematic pottery classification study of pottery from both the context of excavation and surface collection. The systematic surface survey of the area was conducted in the period of February to April 2023 with the aim of documenting all visible material features along with collection of artefacts such as pottery from the surface. This kind of a survey can significantly contribute towards our understanding of a historical space, site formation and the patterns of human settlement. It should be noted that this type of comprehensive study has rarely been attempted at any archaeological site in the region of Northeastern India though there are many examples from the rest of the subcontinent, such as the study conducted at the early historic site of Kaundinyapura (Smith 2000:75-87), Vijayanagar Metropolitan Survey Project (Sinopoli and Morrison 2007), Thotlakonda (Fogelin 2003), Aihole (Kadambi 2011:95-102), Banavasi (Suvrathan 2013:77-80), Varendri/Gauda (Swadhin Sen 2017), and Bonaigarh Sub-division of Brahmani River Valley (Sakir Hussain 2024). A significant aspect of this study is a systematic pottery classification, study of pottery from both excavations and surface collection from the site. The excavated pottery studied was collected during the 1992 excavation of the site by the Prehistory branch of ASI, Nagpur under the directorship of A K Sharma (Sharma 1993:76). The pottery is now kept by TDACM at Tura and Shillong at Meghalaya.

The archaeological site under consideration comprises a total of 11 villages, which are located in the present-day region. Initially, the site was referred to as Bhaitbari (Bhuyan 1972-1973). But in later studies, Bhaitbari and Vadagokugiri are used interchangeably because Bhaitbari is a more recent name, and the site falls under the revenue area of Vadagokugiri (Sharma 1993). However, for this study, the site is being referred to as Rajpur, as most of the archaeological remains and artefacts were exposed in this particular village. The artifacts and archaeological remains found at Rajpur village and other villages of the site provide valuable evidence of the historical processes of the region.

In the 1992 excavation, archaeologists found two temples, a mound, terracotta plaques, almost 40 meters of fortification wall, and 9 water tanks. Additionally, they excavated a few trenches in the habitation area as well (Sharma 1993:6). During the 2023 surface survey along with the above-mentioned archaeological features, some additional landscape and material features were documented.

The objective of the present research is a thorough documentation and mapping of artefactual and structural distribution pattern at the early medieval settlement of Rajpur through a systematic surface survey in order to understand the settlement pattern and site formation process. The pottery will be further studied to identify stylistic attributes that will help in establishing connections between the settlement with other early medieval settlements in the fluvial zone of Brahmaputra Valley, which will help in understanding the historical context of such a settlement in this micro region.

Methodology Pertaining to Systematic Surface Survey

To achieve the objective of the study the method adopted is Systematic Surface Survey. The surface survey was conducted in two phases where initially; the entire area of the site was surveyed extensively on foot to identify the significant areas of human activity within the fortified settlement and the broader material landscape of Rajpur. In the second stage, these identified areas were surveyed and documented in a detailed manner.

The method of Systematic Surface Survey in archaeology was first used by G. R. Willey (1953). It was subsequently utilised in Latin America by Sanders, Parsons and Stanley (1979); Blanton (1982); Parsons et al. (1983); in the Middle East by archaeologists such as Adam (1965 & 1981), Adams and Nissen (1972); Wright and Johnson (1975); Wilkinson (2003 & 1995) (Kadambi 2011: 96), and in the Aegean and Classical World by Alcock and Cherry (2004) (Kadambi 2011: 96). In the Indian subcontinent the Systematic Surface Survey method has been employed by archaeologists such as Smith (2000: 75-87), Fogelin (2003), Sinopoli and Morrison (2007), Kadambi (2011:95-102), Suvrathan (2013:77-80), Sen (2017), and Hussain (2024). These studies have highlighted the significance of this method in identifying archaeological sites, reconstructing settlement, and examining long-term patterns of cultural and socio-economic development across diverse environmental and cultural settings.

In the current study, the objective of the first phase of survey i.e., the extensive surface survey of the site, was to identify and map the layout of the site by creating a detailed outline and specifically map the remnants of the fortification wall structure, which was mentioned in the work of the 1992 excavation. In this phase, full coverage survey of the site was completed. In this survey have documented artefactual, structural remains, and other archaeological features. The outcome of the first phase of the survey is that, firstly, it ascertained the extent of the fortified site. Secondly, all the significant area that needs to be studied in detail were documented and marked in the first phase itself. Following the first phase of survey, base map of the study area was created of an area of 3.36 sq km. After the completion of the first phase of survey, the study area was divided into 392 grids, each spanning 100 x 100 meters (see figure 2). These grids are the primary sampling units for the systematic surface survey conducted at Rajpur. Though, the survey was chiefly focused on the area within the fortification wall, two additional areas outside the fortification was also surveyed in 2023. These two areas were selected and documented during the survey due to evidence of stone quarrying activity and the presence of metal slag on the surface.

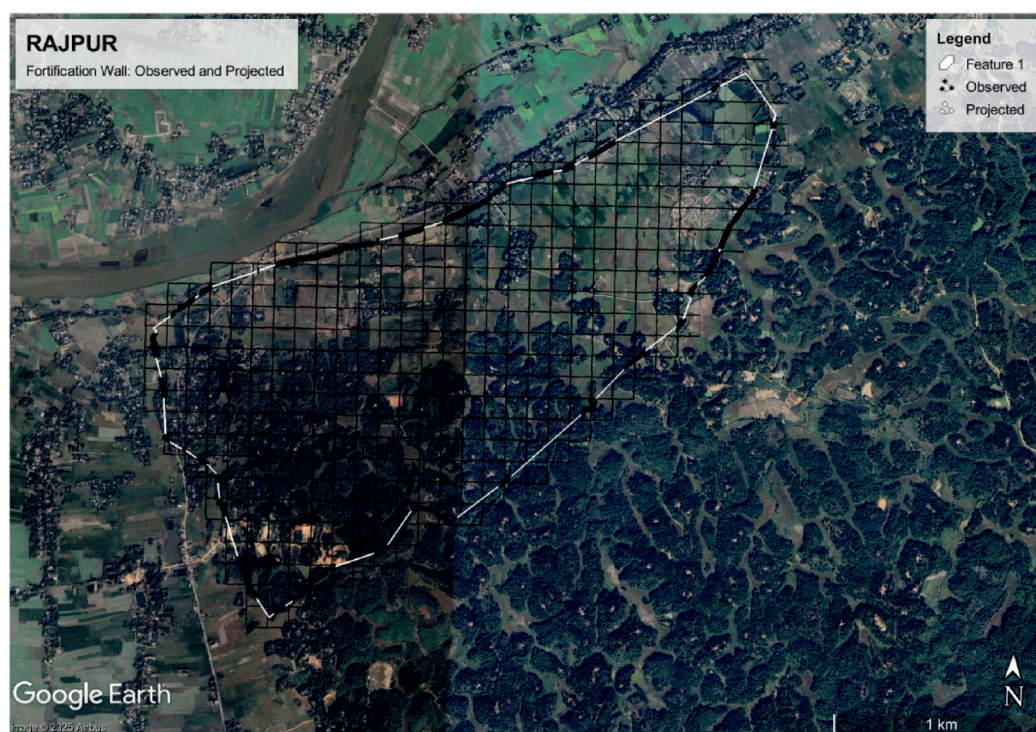


Figure 2: Figure showing the grid divisions of Rajpur and the fortification wall around it

Following the creation of the base map and the division of the study area into 392 survey grids, the survey was designed with the objective of achieving full coverage. However, the systematic surface survey could be conducted only in 78% (306 grids), the remaining 86 grids cannot be surveyed due to problems in accessibility, resulting from dense vegetation and ponds. As noted by Parsons (1990), and Sinopoli and Morrison (2007:17-18), even surveys planned for full coverage rarely achieve complete spatial coverage because of environmental and topographical constraints.

In the second phase of survey, 61 grids were selected for intensive investigation using the purposive sampling technique. These grids were selected on the basis of the density of surface artefacts, structural remains, and other cultural features identified during the first phase. The artefactual and structural scatters on the surface documented with Global Positioning System (thereafter GPS) coordinates using software such as Google Earth and Alpine Quest. The GPS coordinates taken during the survey were further used for preparing maps of the site using software such as Arc GIS and QGIS. The pottery and other artifacts were collected from the surface within these grids using a grid-based systematic surface collection method with selective sampling from the high-density pottery scatter zones. Out of 392 grids, only three grids (J 15, M 9 and M 10) were selected for pottery collection from which 36 potsherds were collected. These potsherds were collected as a representative sample from the selected grids to avoid disturbance to the site while ensuring sufficient material for type-variety analysis. Some of these analyses will also be discussed in the present paper.

In certain areas, the surface was exposed, section photography was undertaken to document visible stratigraphy which can throw light on the settlement pattern. For this purpose, detailed contour maps of Rajpur have been prepared using Arc GIS and QGIS software to understand the spatial settlement pattern since Rajpur has both elevations and depressions within the fortified area.

Methodology Pertaining to Pottery Classification

The methodology adopted in recording the various attributes of the pot sherds is an amalgamation of type-variety and quantitative-statistical classification typologies (Sinopoli 1991:4-5). The type-variety method involves sorting ceramics into broader groups or types, and finer groups or varieties, usually on the basis of raw materials, clays and tempers, and decorative treatment. The quantitative or statistical method is based on explicitly defining and measuring a number of attributes or traits of ceramics and using a variety of statistical techniques to examine their distributions to divide the vessels into objectively verifiable categories. During classification, the form, type, weight, count, diameter, Munsell color code, and notes were taken of every sherd.

While identifying the vessel typology at least two attributes were utilized, whereas in certain cases there were more than two attributes present but these kinds of sherds were rare. Attributes such as a diagnostic style, such as a rim style and a base style, and production process, which indicates the pottery technology and fabric. Also, in case of decorated sherds the decoration is also recorded as an attribute. The restricted vessel forms are vessel forms with larger middle body diameter than the rim diameter like pots and jars. Pots are vessel forms with a larger middle body diameter than the maximum height of the vessel. Jars are vessel forms with a bigger height than the maximum diameter of the vessel. The unrestricted vessel forms have smaller middle body diameter than the rim diameter such as bowls and dishes. Bowls are vessels with internal height less than one half of the maximum body diameter. While dishes are extremely squat open vessels whose internal height is equal to or less than one sixth of the maximum body diameter (Dales and Kenoyer 1986:28-29).

Survey Findings

This section of the paper has been divided into two parts, where the first part delves into the previous findings reported earlier by other scholars, and the second part discusses the findings of the present systematic surface exploration. The analysis is conducted with meticulous attention to detail, extracting as much information as possible from documented material, structural remains, and the water bodies. The goal is to gain a thorough understanding of the subject matter, examining every piece of information and drawing meaningful conclusions based on the findings.

Part 1: Earlier Findings

G N Bhuyan (1972-1973:8-13) conducted a thorough documentation of the various terracotta plaques that were discovered during that time. Bhuyan's study has documented the intricate designs, patterns, and symbols that were engraved on these plaques, offering a glimpse into the artistic and cultural traditions of that era (Bhuyan 1972-1973:8-13). Though, the author cites that these plaques are of historical significance, hardly they have been analysed to understand this ancient settlement.

During the excavation work carried out in 1992, A.K. Sharma (Sharma 1993:6) made a significant discovery of two temples in the study area. One of these temples is dedicated to *Śiva* and features a unique octagonal shape with eight *Śiva lingas* placed at different angles. The plinth of the temple is made of bricks of different sizes, and outside the temple, there is a stone carving with intricate floral and geometrical designs. Sharma has mentioned in the report the location of a brick structure (temple no.1) with terracotta plaques on the eastern side of the temple (Sharma 1993:43). These two temples are significant structural remains of the site which are presently under the protection of TDACM.

The fortification wall is a prominent structural feature at the site. The wall is made of uneven-sized burnt bricks and is located next to the Jinjiram River which flows beyond the northern boundary of the fortification. It also features water tanks on its inner side. In 1992, a small excavation was carried out on the southern side of the wall (Sharma 1993:6). Moreover, there is a moat that flows on the southeastern side of the study area, which provides valuable insights into the landscape.

Several artifacts have been found within the fortification wall, including pottery, terracotta plaques, temple architectural remains, sling balls, water bodies, and mounds. In the earlier surveys, terracotta plaques were documented and are now housed in four museums such as the District Museum Tura (Meghalaya), the Assam State Museum, Guwahati (Assam), the Williamson Sangma State Museum, Shillong (Meghalaya), and the Tribal Research Institute, Shillong (Meghalaya). The plaques predominantly feature iconography figures of Brahmanical gods and goddesses. In the northern part of the site a mound was reported which the excavators identify as a Buddhist stupa (Sharma 1993:32).

Shastri (2000-2001) has discussed the findings of the 1992 survey and excavation done by AK Sharma. Moreover, he has critically analysed the findings of A K Sharma and also discusses the about temple architecture and terracotta plaques (Shastri 2000-2001:79-83).

The study by P. Sharma (2015:1116-1124) is a systematic classification study of decorated pottery from the early medieval Brahmaputra valley that provides valuable insight into the material culture of the region. In this work she has also analysed the decorated pottery from Rajpur along with a few other sites from the valley. She has classified the pottery collected during the 1992 excavation and has further compared the stylistic patterns and fabric types across six other sites in the Brahmaputra Valley. This comparative analysis has attempted to establish the stylistic similarities and distinctions specifically within the decorated pottery, shedding light on regional interactions and influences. Through pottery stylistic analysis, Sharma relatively dated the Rajpur site to the 10th-12th century CE early medieval chronological framework.

Part 2: Current Survey Findings

Previous studies have confirmed the existence of a fortification wall, which can be assumed was built for the purpose of defence. The current study has brought to light some new findings. For instance, presently the northern part of the wall has been repurposed as a residential village settlement, with construction done right on top of the wall. On the eastern side, a village road has been constructed right on top of the fortification wall. The southwestern side of the wall is covered in dense vegetation but the area is elevated, so, surveying this portion of the wall is very difficult task. The western side of the wall has mostly eroded as observed during the survey. Through this survey, the existing remains of the fortification wall have been documented and mapped. Also, the possible extent of this fortification wall in the earlier times has been suggested as projections in the mapping (see figure 2).

During the survey, it was observed that the structure earlier thought to be a simple stupa mound is quite complex with its own boundary walls within the fortified settlement, suggesting this to be a possible stupa complex or a Buddhist monastic structure rather than a simple mound (see figure 3). Around the stupa structure, four walls can be seen on the eastern side and two walls on the western side. Additionally, on the northern side, two walls can be observed and one of them is in a dilapidated state. On the southern side, another two sets of walls were documented. Interestingly, the second easternmost wall features two terracotta plaques, measuring 120cm x 50cm, and both these plaques depict a *Śālabhañjikā* female figure each. The two figures are depicted embracing trees with their limbs. The *Śālabhañjikā* iconography is commonly found adorning the pillars of Brahmanical temples and the gateways and pillars of Buddhist structures such as stupas and monasteries as well (Desai 2010). It is hypothetically suggested that these two terracotta plaques might have also adorned a possible gateway into the fortified stupa area at Rajpur. These terracotta plaques have been documented in grid M 9. According to M. S. Randhawa, as cited by Soni (2015:52), the *Śālabhañjikā* pose, depicting a woman plucking flowers from a *śāla* tree, is associated with the nativity of the Buddha at Lumbini, where *Māyādevī* is described as holding a *śāla* tree while giving birth. This association with birth led the *Vṛkṣikā* or *Śālabhañjikā* motif to become a symbol of fertility. The motif also reflects the ancient Indian belief in the reciprocal relationship between female and vegetal fertility, expressed through the concept of *Dohada* (fertilization). Thus, the *Śālabhañjikā* symbolises fertility, regeneration, and natural abundance (Soni 2015:52).

Water tanks were documented beyond the eastern and western walls of this stupa complex like structure. The water tank beyond the eastern boundary wall was documented in the grid L 5, while the tank beyond the western wall is in the grid L 10. The walls have become dilapidated over time due to increased human activities such as agricultural work and brick-making kilns at the site. This complex structure around the stupa mound with multiple walls might be a possible Buddhist monastic structure, with the mound located at the northern side of this structure (see figure 3).

During the excavation of 1992, the excavation team uncovered the remains of two possible temple structures. One of this structure has an octagonal brick foundation (see figure 4.A) and is documented presently in grid N 16 (see figure 4.D). Based on its layout and the presence of distinctive religious symbols, the excavators identified it as a *Śiva* temple dating back to the 11th to 13th centuries CE (Sharma 1993:40). It is to be noted; the excavators found eight *Śiva-linga* (symbolic representations of *Śiva*) which were found placed at each of the eight angles of this octagonal temple. Further, on the eastern side of this octagonal temple they documented another substantial brick-built structure, identified as another temple structure in 1992 (see figure 4.B). This temple structure has a distinctive shape different from the octagonal temple structure and has been presently documented in grid N 18 (see figure 4.D).

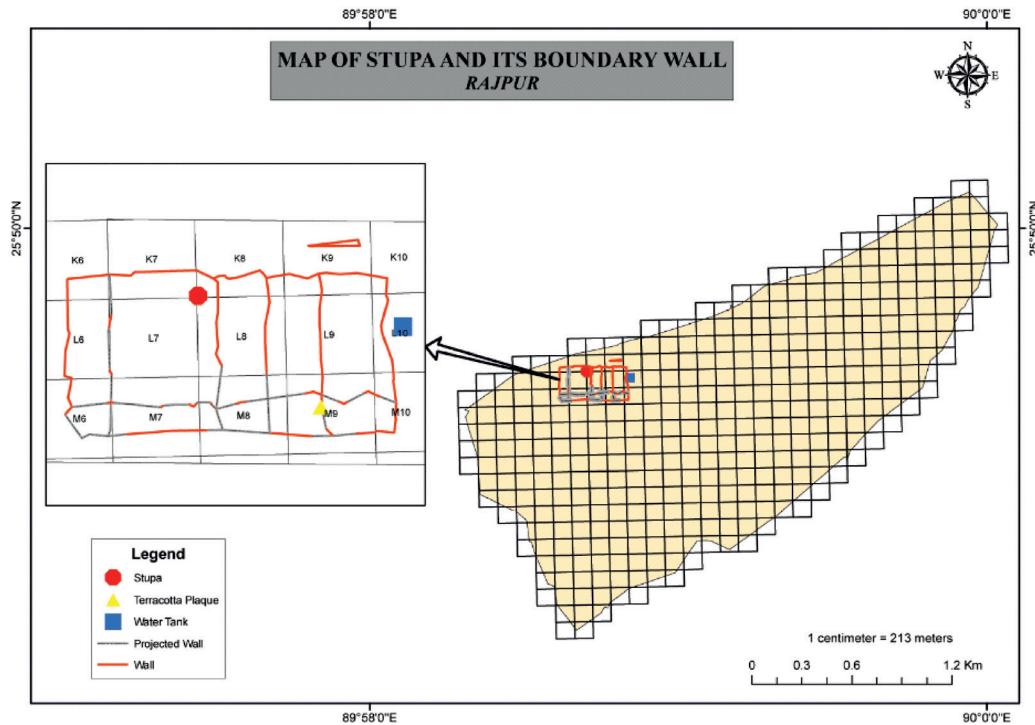


Figure 3: Figure depicting the location of the stupa complex at *Rajpur*

In the 2023 survey, to the west of the octagonal temple structure, another large brick structure was documented which is partially visible as some portion of it is buried (see figure 4.C). Its full size and architectural layout remain uncertain, as further excavation is required to uncover and study it completely. This structure is located in grid O 16 (see figure 4.D).

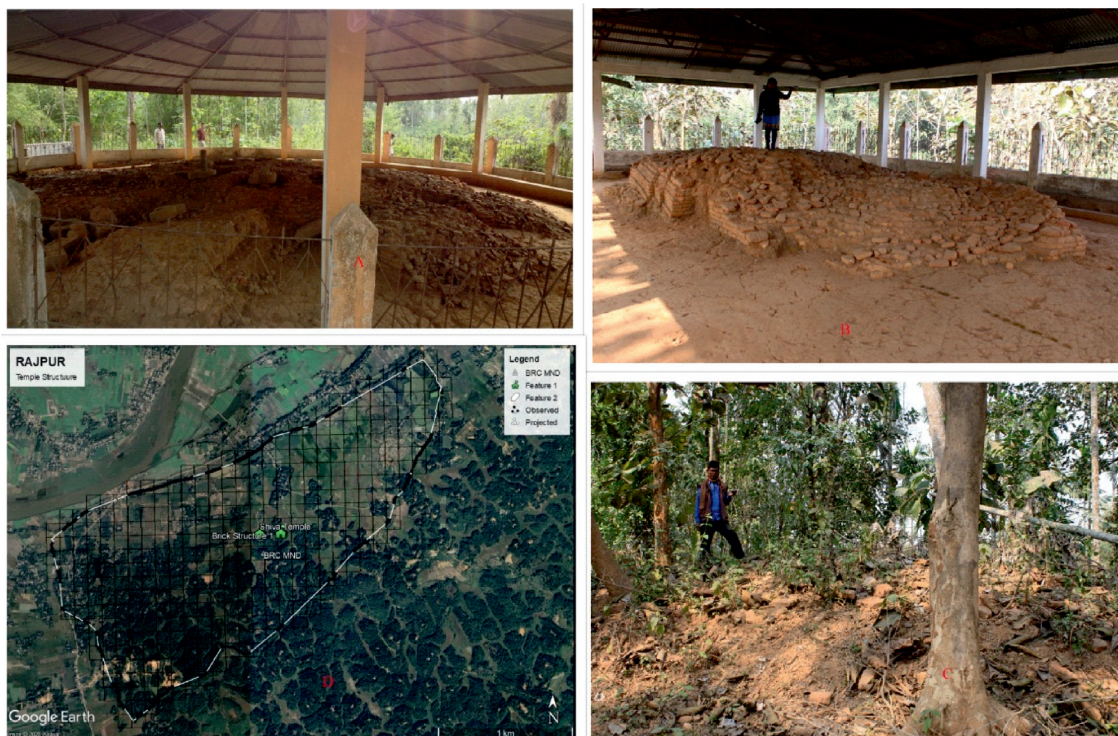


Figure 4: Figure showing Two temple structures and one brick-built structure

The spatial layout of these temple structures suggests the possibility of a religious architectural complex consisting of multiple temples (see figure 4.D). In this possible religious complex, the octagonal temple seems to be at the centre, and to its east lies the other temple structure found in 1992, and to its west is the possible temple structure identified in the 2023 survey. Together, these three structures probably constituted a sacred space or religious complex within the fortified settlement of Rajpur. However, spatial proximity alone does not establish a direct functional relationship among all features and structures. It is merely suggested that there is a possibility of these three structures functioning as a cohesive space within the study area.

This survey has documented two new tanks, in addition to the nine that had been previously recorded in 1992. The two newly documented tanks are located in the following grids: I 15 and I 16 and Z7. It is to be noted that ten out of the eleven water tanks are located on the north western side of the site adjacent to the northern fortification wall, this area is comparatively lower in elevation compared to the rest of the site (see figure 5). Along the banks of these tanks, *Śiva liṅga*, *yonī* and architectural features such as *āmalaka* have been documented. The *āmalaka* architectural feature is an ornamented crown found on Hindu temple structures, stone carvings and pillar structures. The discovery of these features closely associated with Hindu temples on the bank of the largest tank at Rajpur is historically quite significant. These structural features are predominantly located within the grid N 15. It can be assumed that there could have been more temple structures on the banks of these tanks in the earlier times.

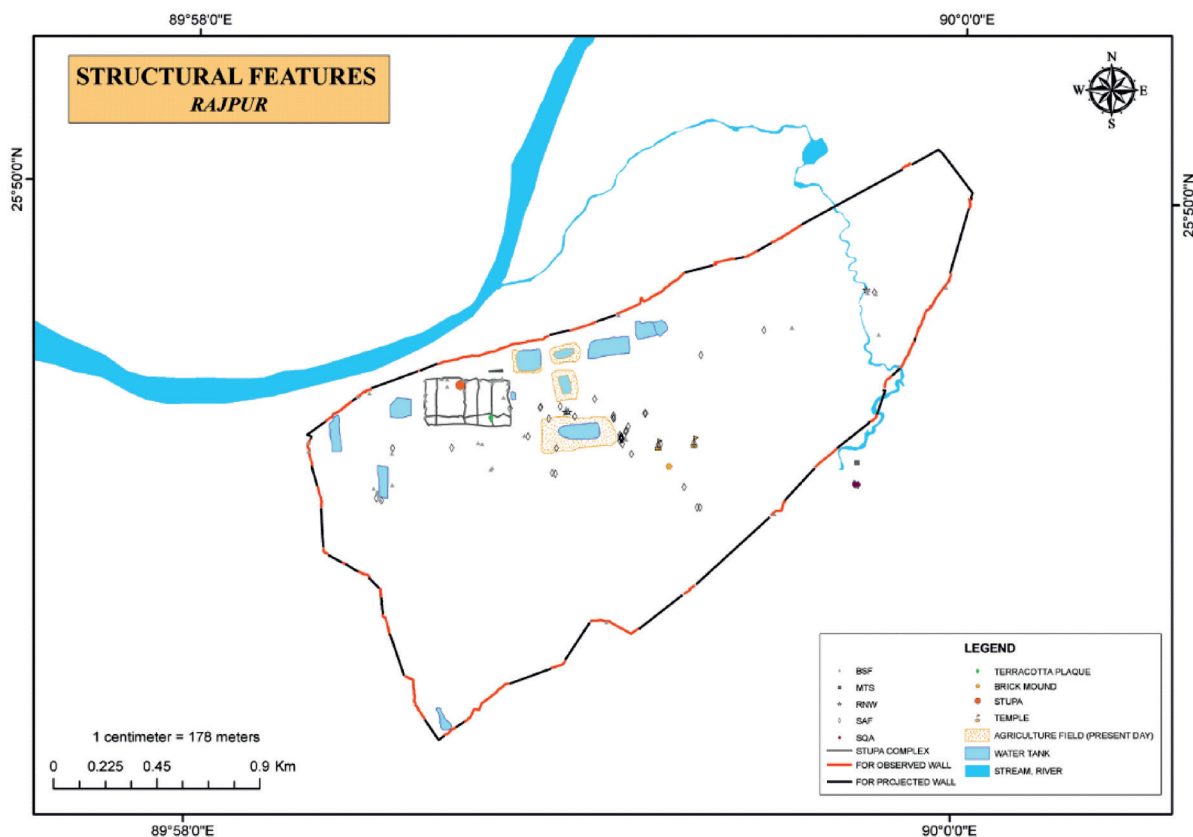


Figure 5: Figure showing the various architectural and structural features at Rajpur

Around four of these tanks, remains of a brick alignment structure observed which could be the remains of a boundary wall around them. Most of these walls are in a dilapidated state due to human

activities within the site, such as brick kilns and agricultural work. It was observed that one of the tanks had an unusual structure at its centre. Presently, this structure looks like a mound with some brick alignment visible. At this stage, it is very difficult to identify the exact nature of this structure without further investigation. However, it may represent a small shrine, although its function cannot be confirmed at present. This tank is documented within the four grids J 10, J 11, K 10, and K 11. Though, four of these tanks are protected by the TDACM, they have been dredged and converted into agricultural fields and fisheries by the local population. Due to agrarian expansion and retrieval of land by dredging the tanks in this area, there is a gradual decrease in the size of most of these tanks over time. A remarkable observation, shared by the locals, is that the level of water in the largest tank remains constant throughout the year, even when used for irrigation, despite other areas drying up. This tank is located within the grid M 11, M 12, M 13, M 14, N 11, N 12, N 13, and N 14 and is protected by TDACM.

Another source of water for the early medieval settlement of Rajpur were wells along with the water tanks. During the 2023 survey, two terracotta ring wells were documented which are still used, and are regularly repaired and renovated. One of these wells seem to have been repaired and new rings were placed on top. But one of them is still being used in its original form. Both these wells are found adjacent to tanks no. 7 and 8 in the northwestern part of the site. Some fragments of terracotta ring wells have been documented on the surface in different parts of the site in red and black hues. Apart from the river and the water tanks, wells were also a significant source of water for this ancient settlement.

In the recent times, many studies have focused on the relationship between hydraulic management and religious institutions. V Narayan (2001) has discussed about the ecological perspective within the Hindu traditions. Fogelin (2003) has highlighted the relationship of water bodies with the practice of Buddhism in the context of the Thotlakonda Buddhist site. Shaw (2018) has discussed the close relationship of Buddhism with its natural environment specifically pertaining to water management and conservation. Furui (2021-2022) provides epigraphic evidence for the presence of water bodies, watercourses, canals and rivers in the landscape associated with Buddhist *vihāras*, which might be relevant in understanding the water body dominated landscape of Early Medieval Bengal and the surrounding regions. Thus, monasteries and temples took interest in water management and conservation as reflected in their architectural structures and epigraphic evidences. Also, water was essential for both performance of rituals and daily consumption.

During the survey, two significant economic activities associated with the early medieval settlement of Rajpur were documented. The locations of these activities are notably outside the fortification wall of the settlement (see figure 5). In the first spot, a concentration of metal slag pieces, which may indicate possible metallurgical activity. The slag concentration may represent the results of metallurgy production waste. Upon observation, it seems the metal slag deposit is spread in a roughly 2-3 diameter area (see figure 6). The second activity observed outside the fortification area is the possible stone quarrying activity. An interesting finding of the 2023 survey was documentation of a mini temple *deul* style *śikhara* carved out of a monolithic in situ granite boulder from this spot of possible stone quarrying. Today the upper portion of the *śikhara* has broken away from the main boulder and is now preserved in one of the temple structures (see figure 7). Incidentally, granite is locally available in the hills surrounding Rajpur and was also a popular material for sculptural art and temple construction in the region of Brahmaputra valley. Though, to ascertain the true nature of these two activities in relation to early medieval Rajpur, one will require a more nuanced archaeological investigation which was not covered in the 2023 survey.



Figure 6: Figure showing metal slag activities



Figure 7: Figure showing evidence of stone quarrying activities

Pottery Classification Study

This section has also been divided into two parts; the first part will discuss the pottery collected during the 1992 excavation and in the second part will discuss the pottery collected through the systematic surface survey in 2023. The pottery collected through the 1992 excavation are currently housed in the District Museum, Tura and TRI, Shillong. Primarily, from these museum collections the excavated potteries have been documented and classified. In the 2023 surface survey potsherds were documented in 306 grids out of the total 392 grids. Based on the surface distribution of pottery, out of these 306 grids pottery evidence recorded from 194 grids. Among these 19.28% of them were found to have higher density of pottery scatters on their surface followed by 13.72% with medium density, 30.39% were found with low density. The remaining 36.60 % i.e., 112 grids have no evidence of potsherds on their surface (see figure 8). The percentages presented in Figure 8 are calculated based on the 306 surveyed grids, not all 392 grids.

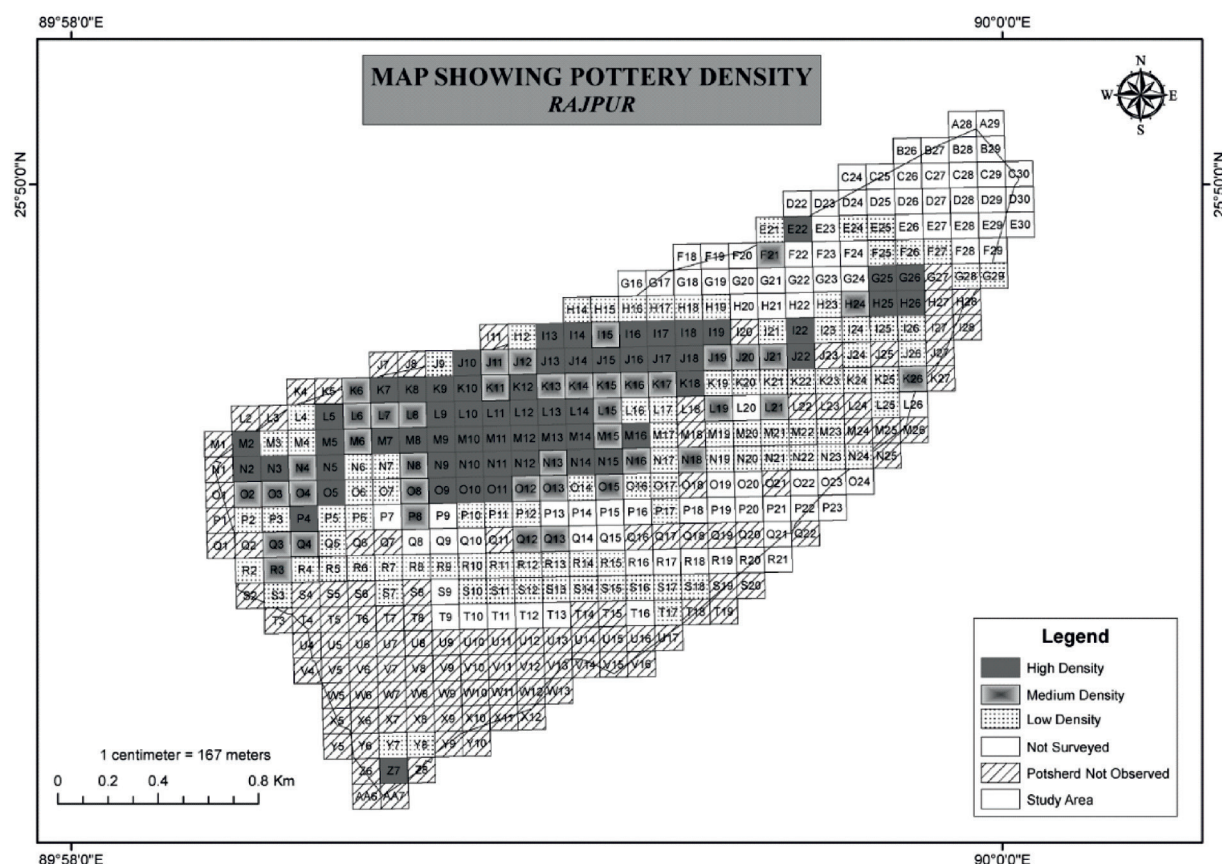


Figure 8: Figure showing the pottery density at Rajpur across the grids

Part 1: Pottery from the Excavation Context

This part discusses the pottery collected during the excavation of 1992, led by ASI, Nagpur. The excavated pottery at Rajpur is largely identified as early medieval based on stylistic attributes, observed in other early medieval sites of the valley. Most of the excavated pottery comes from layers 1, 2, and 3 which has been stylistically dated between 10th -12th centuries CE (Sharma 2018b:312).

The areas where excavation trenches were laid in 1992 are temple structure no 1, temple structure no 2, the stupa mound and the southern western portion of a fortification (Sharma 1993:23). The 1992 excavation trenches presently fall in the following grids of current survey, N 16, N 18, K 7, K 8, L 7,

[illegible]

A total of 129 diagnostic sherds were recorded which includes rims, bases, lids, knobs, spouts and handles (see table 1) from the excavation context at Rajpur. The rim sherds record a higher occurrence which makes it the most voluminous among the diagnostic sherds (see table 2). Table 2 subdivides the 129 diagnostic sherds listed in table 1. Overall, various stylistic patterns were observed in the different diagnostic categories: 21 rim patterns, 2 base patterns, 2 lid patterns, 1 knob pattern, 1 spout pattern, and 1 handle pattern among the 129 diagnostic sherds. Also, one pattern of dish on stand was observed as well. The decorated sherds documented are mostly cord-impressed decorative patterns in a few variations (see figure 10).

Pottery Category	Counts	Percentage %	Weight (Kg.)	Percentage%
Diagnostics	129	42.29%	7.357	86.4%
Non-diagnostics	131	42.95%	0.816	9.58%
Decorated	45	14.75%	0.342	4.01%

Table 1: Diagnostic, Non-diagnostic and Decorated sherd counts (excavation context) and weight at Rajpur. (These three categories are mutually exclusive and do not overlap. The primary difference between the non-diagnostic and the decorated sherds is the presence of decorated patterns in the latter. Otherwise, these categories constitute the body sherds or non-diagnostic potsherds but for the purpose

of documentation here, both were kept as separate classification categories. All the sherds in the three categories were individual number wise calculated, their weight was also measured and their individual percentage of occurrence have also been included in the table).



Figure 10: Figure showing cord-impressed potsherds at Rajpur

The study has recorded and documented 82 rim sherds in total among the 129 diagnostic sherds which constitutes a major portion of the diagnostic sherds. It is followed, on the basis of percentage of occurrence, by dish on stand, base, lid, handle, spout and knob diagnostic sherds respectively (see table 2)

Table 2: Total counts and percentages of the Diagnostic forms at Rajpur

<i>Diagnostic Sherds</i>	<i>Counts</i>	<i>Percentage %</i>
Rims	82	63.56%
Bases	10	7.75 %
Lid	10	7.75 %
Knob	1	0.77 %
Spout	2	1.55 %
Handle	4	3.10 %
Dish on Stand	20	15.50 %

Among the rim sherds, 21 rim types associated with pots, 3 rim types associated with jars, 19 rim types associated with bowls and 2 rim types associated with dish forms have been identified and recorded. The highest percentage of rim sherd occurrence is seen among the pot forms (46.98%) followed by the bowl forms (42.16%). The lowest occurrence is recorded in the dish forms (6.02%) followed by the jar forms (4.18%). At Rajpur two types of wheel-made base patterns have been observed among the base sherds. Among the bowls only one base pattern occurs.

The distribution pattern of the sherd counts recorded in the pots category clearly shows a peak in layer 2. The pot types have been recorded in all the layers at Rajpur. They have been found occurring in four fabric types namely oxidized unslipped medium fabric (O1M), oxidized slipped medium fabric (O2M), oxidized slipped kaolin medium fabric with red slip [O2M(K)r] and oxidized unslipped kaolin medium fabric [O1M(K)]. Out of the four fabrics, the highest sherd count is recorded in O1M fabric, followed by O2M, O2M(K)r and O1M(K) respectively. It is to be noted that all the sherds that were recorded and documented were oxidized and no reduced sherds were observed. The unslipped sherd counts (55.26%) are higher than the slipped sherd counts (44.73%) but the difference is not very substantial. Among the pot forms, 21.05% were kaolin sherds, while the rest which is 78.94% were made with ordinary red clay. All the potsherds recorded have medium-sized inclusions or temper in their fabrics. A detailed pottery fabric documentation and analysis of early medieval pottery assemblage from different sites of the Brahmaputra valley have been attempted by Sharma (Sharma 2021:205-225). A descriptive terminology and methodology on pottery fabric analysis developed by Sharma have been utilised in the present study.

The jar types at Rajpur have been recorded only in layer 2 and 3, and not in layer 1. The distribution pattern of the sherd counts shows an equal distribution in layers 2 and 3. They have been found occurring in three fabric types namely oxidized unslipped medium fabric (O1M), oxidized unslipped medium kaolin fabric [O1M(K)] and oxidized slipped medium fabric (O2M). It is to be noted that all the sherds that were recorded and documented were oxidized and no reduced sherds were observed. Among the jar types, 1 slipped sherd and 3 unslipped sherds were recorded. Out of the total 4 sherds belonging to jar types, recorded only one kaolin sherd and 3 sherds were made of ordinary red clay. All the sherds belonging to the jar type were observed to have medium sized inclusion or temper in their fabric.

The bowl type was recorded at Rajpur in all three layers. However, the distribution pattern of the sherds recorded in the category of bowls clearly shows a peak in layer 2. They have been found occurring in four fabric types, oxidized unslipped medium fabric (O1M), oxidized slipped medium fabric (O2M), oxidized slipped kaolin medium fabric with red slip [O2M(K)r] and oxidized unslipped kaolin medium fabric (O1M {K}). Just like the pot forms earlier, even in the bowl forms the highest sherd count is recorded in O1M fabric, followed by O2M, O2M(K)r and O1M(K) respectively. Among the bowl types at Rajpur, only oxidized sherds were recorded and reduced sherds were not observed at all. There is no substantial difference between the slipped (44.73%) and unslipped sherd counts (55.26%). Out of the total 38 sherds recorded in the bowl type there are only 8 kaolin sherds. All the sherds recorded have medium sized inclusions or temper in their fabrics.

At Rajpur among the dish types, two fabric types were recorded, namely oxidized unslipped medium (O1M) and oxidized slipped medium (O2M) fabric. Only oxidized sherds have been recorded in all the layers. Also, slipped and unslipped sherds have been recorded in equal counts among the dish forms. The layer 2 has recorded peak in pottery distribution among the dish types at Rajpur. All sherds recorded under dish types have medium-sized inclusion or temper in their fabric. No Kaolin sherds were observed among the dish forms.

Part 2: Pottery from the Systematic Surface Survey

In this part, discusses the potsherds that were collected during the 2023 surface survey. These sherds have been collected from the surface of the following grids: J 15, M 9 and M 10, which show a very high-density of pottery scatters on their surface (see figure 11). The highest collection is from the M 9 grid with 27 sherds and the lowest is from M 10 with only 2 sherds. The J 15 grid is near the water

tank no. 10 which falls in the adjacent grid of J 14. The M 9 grid includes the eastern stupa fortification wall no. 3. And the M 10 grid includes the eastern stupa fortification wall no. 4, and water tanks no. 3 and 4. It is to be noted that the areas exhibiting high density of pottery scatters on the surface at Rajpur are adjacent to significant architectural/ landscape features such as water tanks and the stupa mound.

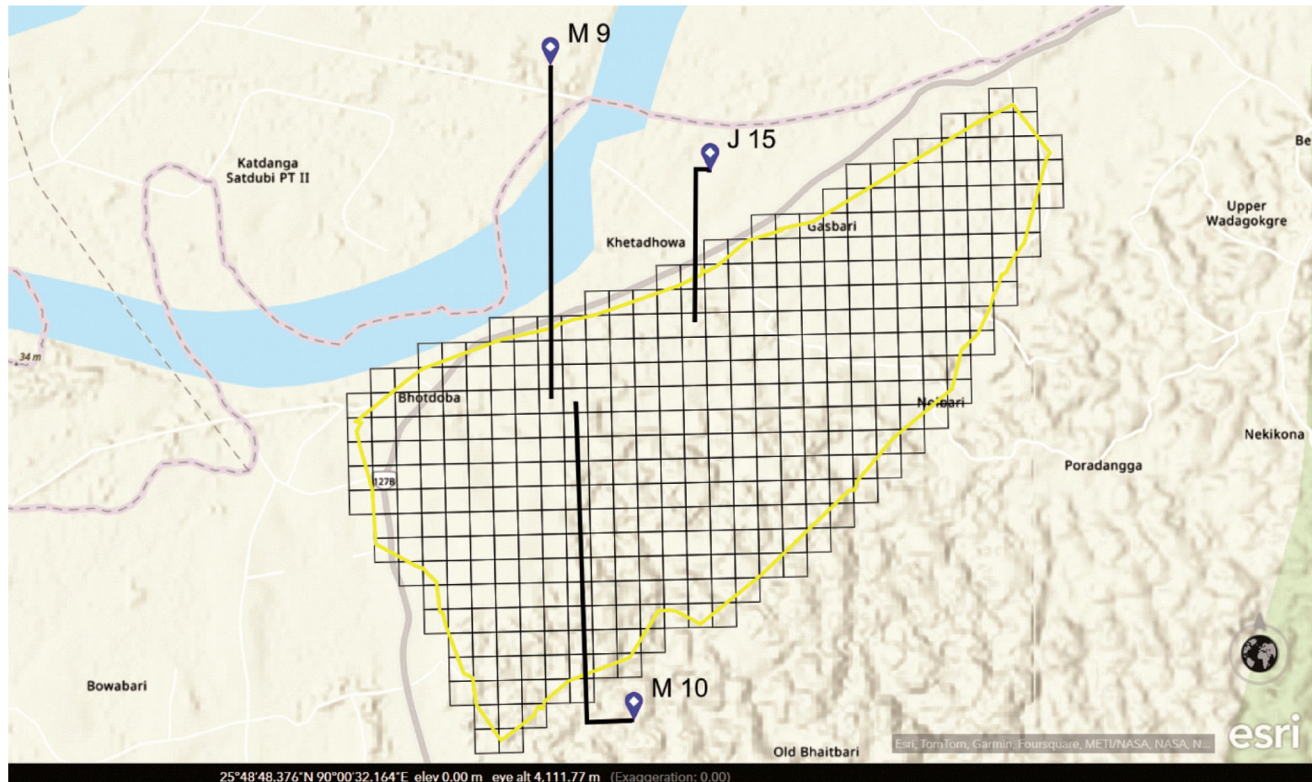


Figure 11: Figure showing the grids from where potsherds were collected from the surface at Rajpur

Overall, 36 potsherds were collected from the surface during the survey in 2023 for further study. Out of the 36 sherds, there are 13 diagnostic sherds and 2 were non diagnostic sherds. The diagnostic sherds include 8 sherds belonging to pots, 3 sherds belonging to bowls, 1 sherd of a lid with a knob and 1 sherd of the dish on stand vessel. In addition, there were 21 decorated sherds out of the 36 sherds, which mostly includes various types of cord-impressed decorations made using paddle and anvil technique (see table 3). These cord-impressed decorations are very similar to the ones that recorded and studied from the excavation context. Many varieties of cord impressed decorations have also been observed from different early medieval sites of the Brahmaputra valley (Sharma 2023:287-309). Interestingly, one decorated sherd had a stamped decorative pattern a technique similar to Ambari and Rajpat stamped decorations (Ota 2006:174-182; Sharma 2018a:125) (See figure 12).

Table 3: Diagnostic, Non-diagnostic and Decorated sherd count from the surface context and weight at Rajpur

Pottery Category	Counts	Percentage %	Weight (gm.)	Percentage%
Non-diagnostics	2	5.55 %	13.5	0.83 %
Diagnostics	13	36.11 %	1100	67.7 %
Decorated	21	58.33 %	509	31.37 %

(These three categories are mutually exclusive and do not overlap. The primary difference between the non-diagnostic and the decorated sherds is the presence of decorated patterns in the latter.

Otherwise, these categories constitute the body sherds or non-diagnostic potsherds but for the purpose of documentation here, both were kept as separate classification categories. All the sherds in the three categories were individual number wise calculated, their weight was also measured and their individual percentage of occurrence have also been included in the table).



Figure 12: Figure showing potsherd having stamped decoration

The sherds collected in the surface survey occur in four fabric types, oxidized unslipped medium fabric (O1M), oxidized slipped medium fabric (O2M), oxidized slipped kaolin medium fabric with red slip [O2M(K)r] and oxidized unslipped kaolin medium fabric (O1M {K}). Out of the total 36 sherds, 12 sherds are made of kaolin clay (33.33 %), while 24 sherds are made with ordinary red clay (66.66 %). Furthermore, 10 of these potsherds have been slipped (27.77 %), whereas 26 are unslipped sherds (72.22%).

Discussion

In this section, the findings of the analysis of the pottery distribution data from both the excavation and the surface context will be presented. The excavated pottery distribution data shows a higher prevalence of pot and bowl forms with 46.98 % and 42.16 % of occurrence, respectively. Comparatively, the other

vessel forms such as jars and dishes record much lower percentage. A similar pattern can also be seen in the surface potsherds where pot and bowl forms are quantitatively more. The most common pottery fabric observed across the various vessel forms is oxidized unslipped medium fabric (O1M). It should be noted that unslipped sherds are far more in quantity than slipped sherds. Another feature observed is the use of kaolin pottery. Across the excavated layers, approximately 21% of kaolin sherds in both pot and bowl forms. Whereas, on the surface there is a higher percentage of kaolin sherds recorded at 33%.

Overall, there are a number of similarities observed in the pottery distribution data when compared with other early medieval sites of the valley. The most common vessel type is the cord impressed bowl form which has been reported from sites such as Ambari, Garhdol, Paglatek, Surya Pahar and Rajpat (Sharma 2018a:113-131; Sharma 2023:287-309). These bowl forms may have been associated with activities related to an agrarian rice-based economy and are also documented across the early medieval sites of this region. They are primarily used for cooking and maybe for storage. In most of the sites, the sherds of this vessel form have distinctive soot marks associated with cooking. Also, there is a higher percentage of breakage especially around the neck portion, possibly due to frequent handling on a daily basis (Sharma 2018b:318-319).

Another similarity in pottery tradition observed across early medieval Brahmaputra valley and also at Rajpur is the use of kaolin clay as raw material for different kind of potteries (Sharma 2021:205-225). Kaolin is a relatively fine clay and often low in iron and other inclusions; its technological suitability depends on mineralogical composition and preparation. Thus, the clay has to be prepared for potting by adding inclusions which improve the workability and/or mechanical properties of the clay body. (Sharma 2021:207-208). The chemical composition of this clay comprises of aluminium silicates with hydrates. In the northeastern part of India, it has been reported at Karbi Anglong, Golaghat and Lakhimpur districts of Assam and at Mawphlong of Meghalaya. Kaolin pottery has been again reported from the early medieval sites of the Brahmaputra Valley - Ambari, Garhdol, Paglatek, Surya Pahar and Rajpat.

Sharma points out that there is not one type of kaolin fabric but there are a few varieties of kaolin fabric, depending on the technique of clay preparation, from the early medieval context of the valley. At Rajpur, two types of kaolin fabric observed, oxidized slipped kaolin medium fabric with red slip [O2M(K)r], and oxidized unslipped kaolin medium fabric (O1M {K}). The oxidized slipped kaolin medium fabric with red slip [O2M(K)r] is prepared by mixing kaolin clay with powdered pot sherds made from red clay which ends up giving a distinct pinkish hue to the otherwise white coloured kaolin clay. This fabric additionally has an application of red clay slip on top. According to Sharma, this was the most preferred fabric type for stamped decorations at the site of Ambari from the Brahmaputra valley (Sharma 2018a:126).

The similarities observed in the pottery technology across these early medieval sites dotting the riverine landscape of the Brahmaputra valley suggest regional interaction and possible technological connectivity, and translated in the form of common material traditions. Rajpur which is also located in this fluvial landscape display similar patterns of pottery tradition which were observed elsewhere in the Brahmaputra basin. Fluvial networks across early medieval Brahmaputra valley could have aided transfer of ideas, objects and technology. Similarities in economic practice and lifestyle could have also encouraged uniformity in the shape and size of potteries.

Contextual Analysis of Distribution Pattern of artifacts and structures across Rajpur

In this section, the possible distribution pattern of past human activity in the early medieval site of Rajpur will be discussed through the documented landscape features and pottery distribution data.

The entire site has been divided into three zones: the north-western zone, the north-eastern zone, and the south-western zone on the basis of documented material evidence (see figure 13). This division of Rajpur into three zones has been done primarily to understand the settlement or usage pattern within the fortified settlement. First, the distribution of pottery scatters documented on the surface in relation to the grids is to be discussed. The density of pottery scatter on the surface of the site which has already been discussed earlier (see figure 8) shows a distinctive pattern that might indicate significant aspects of past activity. The grid-wise surface pottery distribution data has been compared zone-wise along five parameters: grids with high pottery density, grids with medium pottery density, grids with low pottery density, grids with no pottery recorded, and grids not surveyed. Percentages are calculated against the total number of grids. Eventually, the pottery density data will be compared with the documented structural features and ecological patterns across the landscape of the study area to understand this early medieval human settlement.

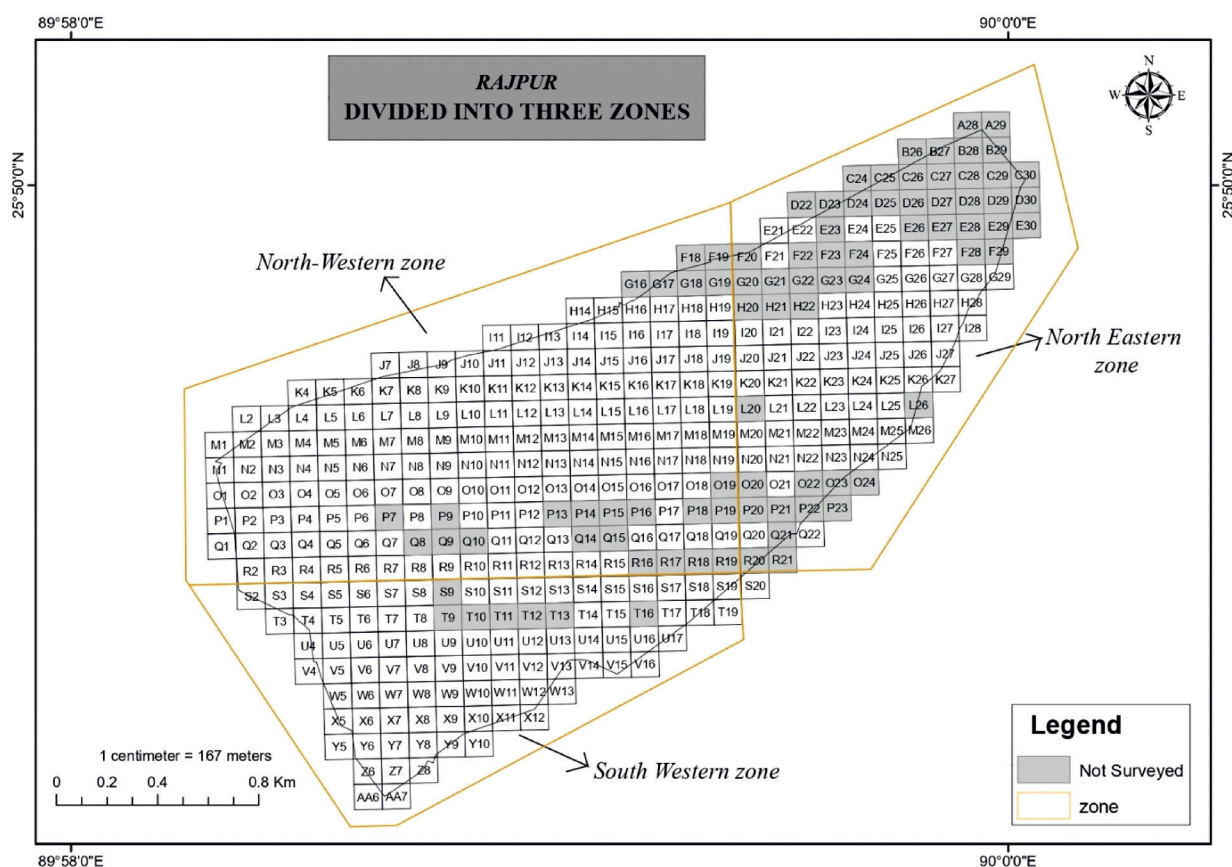


Figure 13: Figure showing the division of Rajpur into three zones on the basis of material evidence

The grids with high density of pottery and their percentage of occurrence across the three zones are as follows: 12.75 % in the northwestern zone, 1.78 %, in the north-eastern zone, and 0.25 % in the south-western zone. The grids recording medium density of pottery and their percentage of occurrence shows 9.18 % in the north-western zone and 1.53 % in the north-eastern zone. No grids in the south-western zone have recorded medium density of pottery scatter. The grids recording low density of pottery and their percentage of occurrence shows 14.79% in north-western zone, 8.16 % in north-eastern zone, and 0.76% in the south-western zone. Clearly, the north-western zone of the site shows higher percentage of surface pottery distribution across the three parameters of high density, medium

density, and low density. It should be noted that the pottery that was studied from the excavation context came from trenches that were mostly located in the north-western zone of Rajpur.

During the surveys undertaken for this paper there was no evidence of pottery scatter on the surface in certain areas. The percentage of occurrence of grids with no pottery evidence across the zones are as follows: 7.39 % in the north-western zone, 5.35% in the north-eastern zone, and 15.81% in the south-western zone. Compared to the north-western and north-eastern zones, the south-western zone has recorded larger area with no evidence of pottery on surface. Also, there were certain grids that could not be surveyed due to difficult terrain, heavy vegetation cover, area submerged under water and human habitation. The percentage of occurrence in these zones are as follows: 6.37% in the north-western zone, 14.28 % in the north eastern zone and 1.53% in the south-western zone. Here, clearly the north-eastern zone has a higher percentage of area that could not be surveyed.

The significant structural remains documented at Rajpur includes a fortification wall, two brick temple structures, a possible stupa complex, several water tanks, terracotta wells and other remains such as a brick mound, brick structure and stone architectural fragments (see figure 5). Interestingly, most of these structural features are concentrated in the north-western part of the site which also records occurrence of high pottery density. It is highly plausible that the north-western part was a significant locality of Rajpur housing the most important religious institutions such as the possible stupa complex, and the temples. Also, this zone is dotted with hydraulic features such as the water tanks and the terracotta wells, which is also suggestive of the possible residential character of this locality.

Based on the available evidence, it is hypothesised, that the north-western zone of Rajpur was the settlement area in the early medieval times housing the important politico-religious features as well as daily amenities in the form of hydraulic features. It is further suggested, on the basis of material remains or its absence, ecological features such as elevation or depression, presence of hills, streams and rivers, that each zone within the fortified area of Rajpur might have had distinct spatial uses in the early medieval period. As already suggested above, the north-western zone possibly served as a human habitation area; the north-eastern zone which is ecologically situated in a depression with the lowest elevation point within the site might have been used for agricultural purpose, or any other suitable activity, as there is also a stream that flows right through it; and the south-western zone which records the highest elevation point might not have been preferred for both settlement or agricultural use (see figure 14). These hypothetical observations have been made on the basis of available material evidence and sometimes due to their absence, but at the same time within an archaeological site there is also the issue of differential preservation for different kind of artifacts that decay at varying rates. While surveying areas with dense vegetation and inaccessible landscape features, another issue faced by the surveyors is survey visibility. Both differential preservation and survey visibility can affect the surface distribution pattern of artefacts and structures which needs to be taken into consideration while attempting to understand the nature of settlement pattern.

The site formation process of Rajpur remain difficult to trace due to the absence of historical records and the meagre archaeological investigations attempted here. The 1992 excavation of the site, wherein four trenches were laid, was not very substantive in its conclusions regarding the site formation and settlement pattern. As a consequence, most of the interpretations in this study is mostly based on the material evidence documented through the surface survey.

The archaeological remains and their context within the site have been significantly affected by the constant human activities and their presence. The *Śiva liṅga*, *Yonī*, and *āmalakas* near the largest water tank continue to be used in religious ritual practices by the local community, demonstrating

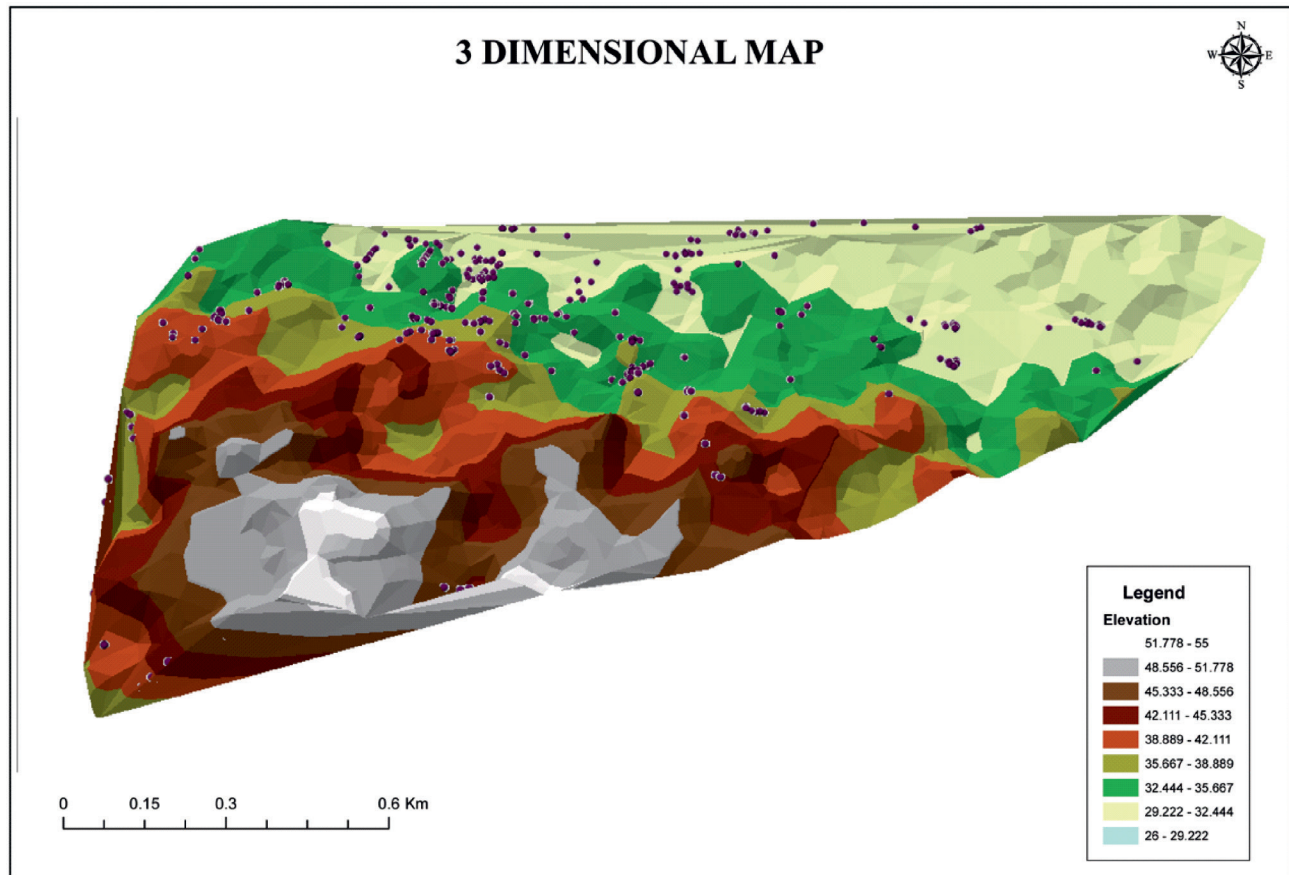


Figure 14: Figure showing the elevation at Rajpur in a 3-dimensional map

the continued use and reuse of the archaeological materials and the landscape. Clearly, from some of the ancient bricks of the structures have been pulled out and reused in contemporary constructions, also modern houses and roads have been built over some portion of the fortification wall. In addition, many open areas of the site are regularly used for paddy cultivation. Most of the ancient water tanks are currently used as ponds and fisheries by the local residents. Although four tanks are protected and maintained by the TDACM, they are gradually shrinking due to the expansion of agricultural land around them.

According to Schiffer's (1987) theory of site formation process, it may be understood as the outcome of both cultural transformations (C-transforms) and natural transformations (N-transforms). The archaeological observations recorded at the site provide evidence of both types of processes, although their effects appear to have varied spatially across the site.

The evidence for C-transforms is observed in the continued human use and modification of the site. The presence of tanks, ring wells, and structural remains within and around the tanks indicates repeated use of the landscape. Agricultural activities may also have disturbed archaeological deposits through cultivation and other forms of surface disturbance. In addition, brick-kiln manufacturing activities exposed and disturbed archaeological deposits, as observed from the exposed soil sections documented during the survey. Nevertheless, the survival of several structural and artefactual remains in situ, particularly along the tanks, suggests that later activities did not completely destroy the archaeological context.

Apart from C-transforms, the archaeological record at Rajpur has also been shaped by N-transforms. Evidence of N-transforms is particularly found in the thick silt deposits covering structural remains,

as reported by Sharma (1993:75). The excavator suggested that flooding may have affected parts of the early medieval settlement. The sediment deposits and distinct stratigraphic layers recorded during the 2023 survey provide further evidence of the natural depositional processes. These observations support the interpretation that flooding and subsequent sediment accumulation contributed towards the formation of the present archaeological deposits. However, the available evidence does not require assuming that all artefacts or structures were displaced by flooding.

The exposed stratigraphic sections provide additional evidence for understanding the formation history of the site. Distinct layers were visible in the exposed profiles, and most of the recovered artefacts came from Layer 2. While this may point to an important phase of cultural deposition, its identification as the possible habitational layer requires consideration of the wider stratigraphic and archaeological evidence. The association of artefacts with stratified deposits and the preservation of in-situ structures nevertheless demonstrates that portions of the archaeological record retain valuable contextual information.

Therefore, the present archaeological record at Rajpur represents the combined effect of successive cultural activities and natural processes. C-transforms associated with reuse, agriculture, and brick-kiln activity have disturbed some areas, while N-transforms, particularly flooding and sedimentation, have contributed to the burial and preservation of archaeological remains. Together with excavated evidence and stratigraphic observations, these surviving contexts provide an important basis for understanding the habitation, settlement pattern, spatial distribution, and site formation processes of early medieval Rajpur.

The location, material remains, and chronological placement of Rajpur as per relative dating exhibits characteristics commonly associated with the settlements belonging to the early medieval period. The presence of extensive brick architecture and the distribution of cultural materials suggest that the site may have functioned as an important fortified settlement within the regional landscape. There was growth of regional centres, expanding agrarian economies, and increasing socio-political integration during the early medieval period across the Indian subcontinent, including the eastern Ganga Brahmaputra basin. In the light of, absence of absolute dating evidence and the limited excavation data present, the available archaeological data based on surface survey suggest that processes of settlement expansion, landscape modification, and increasing socio-economic complexity were important factors in the formation and development of the site of Rajpur in the Brahmaputra valley.

Conclusion

The current study through the systematic surface survey conducted in 2023 has documented a number of new spatiotemporal features across the landscape of Rajpur, which were not recorded in the 1992 excavation. Features such as the actual extent of the fortification wall, possible religious complex within the fortified settlement of Rajpur, two additional water tanks, two terracotta ring wells and the possible stupa monastic complex within Rajpur was documented and studied in the present study. Their spatial distribution, considered alongside the pottery evidence, provides a broader basis for examining the organisation and functional differentiation of the fortified settlement of Rajpur.

The pottery distribution is uneven, with a marked concentration in the north-western zone corresponding with the distribution of structural remains. This association suggests a higher intensity of human activity and supports the interpretation of this area as a possible habitation zone within the settlement. The distribution of vessel forms is also consistent with domestic and subsistence-related activities, indicating a significant agrarian component in this settlement economy. The pottery distribution data similar to other Pottery analysis points towards a prevalent distribution of vessel types

meant for use in an agrarian economy. Similarities in fabric, technology, decoration, and morphology with pottery from other early medieval sites of the Brahmaputra basin provide additional chronological and regional context.

The spatial analysis further indicates differentiated use of the fortified area. The north-eastern zone, which is also the lowest-lying area according to the site elevation data, might have been used for paddy cultivation. The south-western zone, which represents the highest elevated area possibly served a specialised function which remains uncertain presently.

Chronologically, the ceramic and other artefactual evidence place Rajpur broadly within the early medieval period. The 2023 survey also provides a broader understanding of the spatial organisation and settlement pattern of the site, including possible habitation areas, agricultural zones, hydraulic features, and possible monastic and temple complexes. However, the available surface evidence does not establish whether the fortification, water tanks, ring wells, and religious or monastic structures were contemporary or represent different phases of construction and use. Therefore, while the present study establishes the broader early medieval context of Rajpur through relative dating, absolute dating will be required to determine the specific chronological arrangement of individual features and habitational phases.

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