CHAPTER VI

DISCUSSION

6.1 The Cultural Chronology of Tham Lod Rockshelter

The cultural chronology can be analysed by using the interpretation from geological and archaeological evidences found at Tham Lod rockshelter excavation. The relationship among stratigraphy, sedimentology and archaeological data (Figures 6.1, 6.2 and 6.3) can be classified into 2 periods in geological time scale as late Pleistocene and Holocene. Four cultural phases of cultural pattern can also be classified, from the oldest to the youngest as Late Pliestocene Period I , Late Pleistocene Period II , Early to Middle Holocene and Late Holocene.

6.1.1 Late Pleistocene Period I (32,000 – 13,000 years BP)

This cultural pattern is predominantly characterized by the appearance of cores and flakes assemblages (mainly pebble to cobbles size), including several types both utilized and non utilized as utilized cores, wasted cores, broken cores, utilized flakes and wasted flakes. Especially, utilized cores are mostly characterized by unifacial tools which were made by direct percussion with hard hammer stone technique. All of them was made from gravel and fine to very fine grained rock that about 70 % from sandstone and 20 % from quartzite. This evidence shows that human in the past at Tham Lod rockshelter collected the raw materials from the Lang river. Most of stone tools assemblages represented the entire production sequence, especially high density cores and flakes in area 3 indicate that there were the stone tools manufacture at this site.

Surprisingly, stone tools were discovered extensively in the foot slope of rockshelter (area 3). These stone tools assemblages represent that human activities not only use on rockshelter but the activities also extended down slope. Even, limestone roof

fall occurred, human did not stop their activities by changing the area activities down slope. Stone tools assemblages are mainly composed of pebble to cobbles, including utilized cores, wasted cores, broken cores, utilized flakes and wasted flakes that represent the entire production sequence till finish production. Spatial distribution of material suggests that this area seems appropriately to be the place as lithic workshops.

The animal remains are characterized by a small fragment of bones (non of complete long bone), both burned and not burned. A preliminary identified from teeth samples can be classified from small to larges size animals such as bovid, deer, bear, mountain goat, pig, rhizomys and small primates etc. Shell remains were also found associate with animal bones remains. The evidence of the stone tools artifacts, numerous of fragmentary animals and shell especially in area 1 suggested that hunting animals and collecting shell were the general subsistence patterns. The occurrence of those animal remains on the flat floor area of the rockshelter indicates human in the past used the floor of shelter for food processing and known how to fire for cooking (i.e. butchering animals and burned of animal bones). In addition to the spatial distribution of mixed of stone tools materials and animal remain fragments in area 2 and animal remains were possibly removed or tossed against the wall and it is suggested that it may have been used as a refuse area too.

Based on the result of AMS and TL datings in this area, the earliest cultural layers were dated by TL dating to approximately 32,380 ± 292 years BP. The dating in the high density of habitations (a lot of archaeological remains) based on AMS dating has given the age ranging approximately from 22,190 ± 160 years BP (dated by shell remains) to 16,750 ± 70 years BP (dated by shell remains). TL dating of sediment in layer 3 of area 3 suggests the age of deposition approximately 14,055 ± 47 years BP. The archaeological remains indicated that the prehistoric people in this time were the users and makers of stone. This rockshelter was used by them in multi functional purpose in one place including habitation, processing food, stone tools manufacture and refuse area. The cultural period can be corresponded to late Paleolithic or late Pleistocene Period.

6.1.2 Late Pleistocene Period II (13,000 - 10,000 years BP)

The cultural pattern in late Pleistocene Phase II is somewhat similar to the late Pleistocene Phase I but the use of rockshelter was functionally changed based on the occurrence of two burials (two human skeletons). Human skeleton I was an "extended burial" that was found together with stone tools. Human skeleton II underlying burial I was a "flexed burial" that was also found together with stone tools.

Based on the result of AMS dating from organic sediment, burial I was given the age approximately 12,100 ± 60 years BP and burial II was approximately 13,640 ± 80 years BP. Archaeological remains associated in same level indicate that prehistoric people in this time are probably same groups of late Prehistoric Period I. They were the users and makers of stone tools as main tools for habitation. This rockshelter was used continuously by them for temporary camp and then changing for burial site during late Pleistocene Period II.

6.1.3 Early to Middle Holocene (10,000 – 2,900 years BP)

The cultural pattern during early to middle Holocene is unclear to divide by the archaeological remains from early Holocene to middle Holocene because archaeological remains as flakes, potsherds and beads were mixed. According to the interpretation of stratigraphic sequence, the boundary between stratigraphic unit B and unit C represented the unconformable natural process that was affected by flooding. The flooding may have reworked and disturbed the archaeological remains from several period mixing together of flakes associated with potsherd, bead, polish stone.

Based on the dating by TL dating in the upper part of unit B in area 3 (contact boundary between unit B and C), two sediment samples were dated and given the age approximately 9,980 ± 120 years BP and 10,589 ± 49 years BP. In the upper part of this unit C (contact boundary between unit C and unit D) sediment was dated

and suggested the age approximately 2,933 ± 83 years BP. The relative age from dating suggested that fake was probably made during whereas late Pleistocene, potsherds, beads and polish stone were possibly produced during early to middle Holocene.

Although, it was not clear about the time span of occupation especially during this phase, however, the evidence of potsherds, beads and polish stone found can indicate that Tham Lod rockshelter was occupied by people who use ceramics (potsherd). It can be generally estimated that the age of this phase may be sometimes between 3,410 – 2,000 BP based relative dating of sherds found at Banyan Valley Cave (Reynolds 1992:84).

6.1.4 Late Holocene (2,900 year BP to present)

Archaeological remains were found continuously from early to middle Holocene. Potsherd, beads are the evidence from stratigraphic C in area 1. The characteristic of all potsherds and beads was indicated the late Holocene period.

The deposition of this phase is unable to clarify, because the deposit was thin layer and mostly disturbed by materials in the present. However, the distribution of archarological remains such as potsherd, beads, iron tools found on the floor of this shelter may indicate that this shelter was used continuously by human from the middle Holocene to late Holocene.

Figure 6.1 Total analysis and total number of archaeological remains by component and stratigraphic unit of Area1

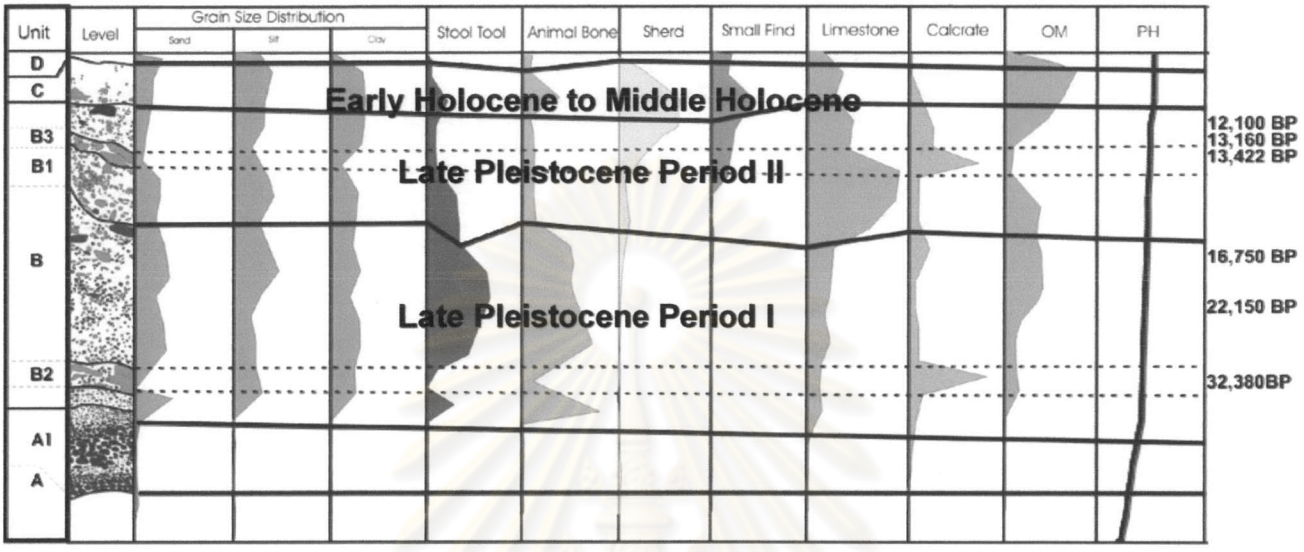


Figure 6.2 Total analysis and total number of archaeological remains by component and stratigraphic unit of Area2

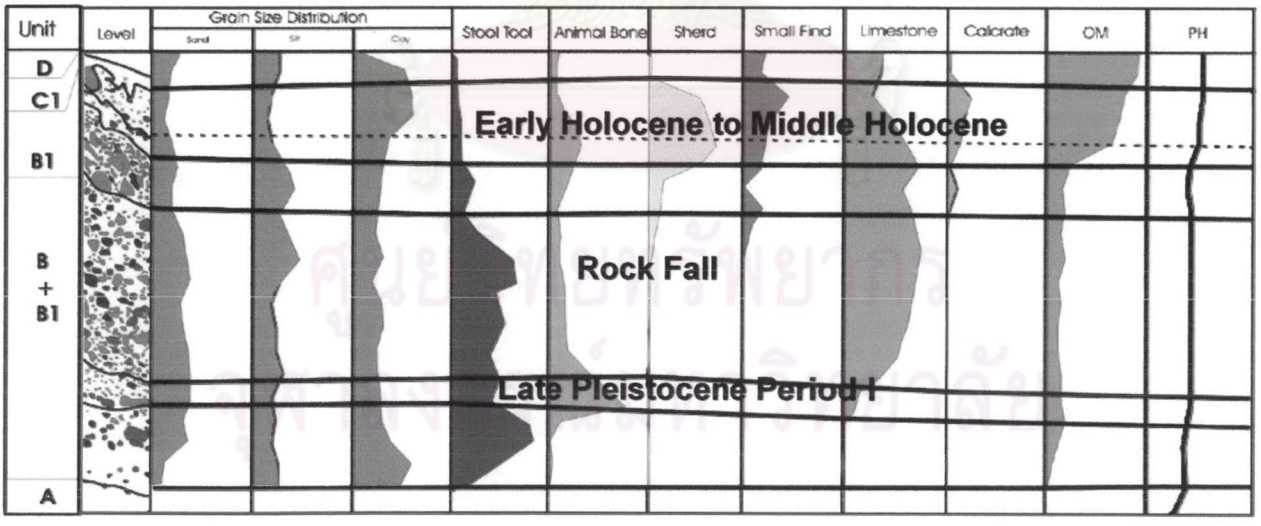
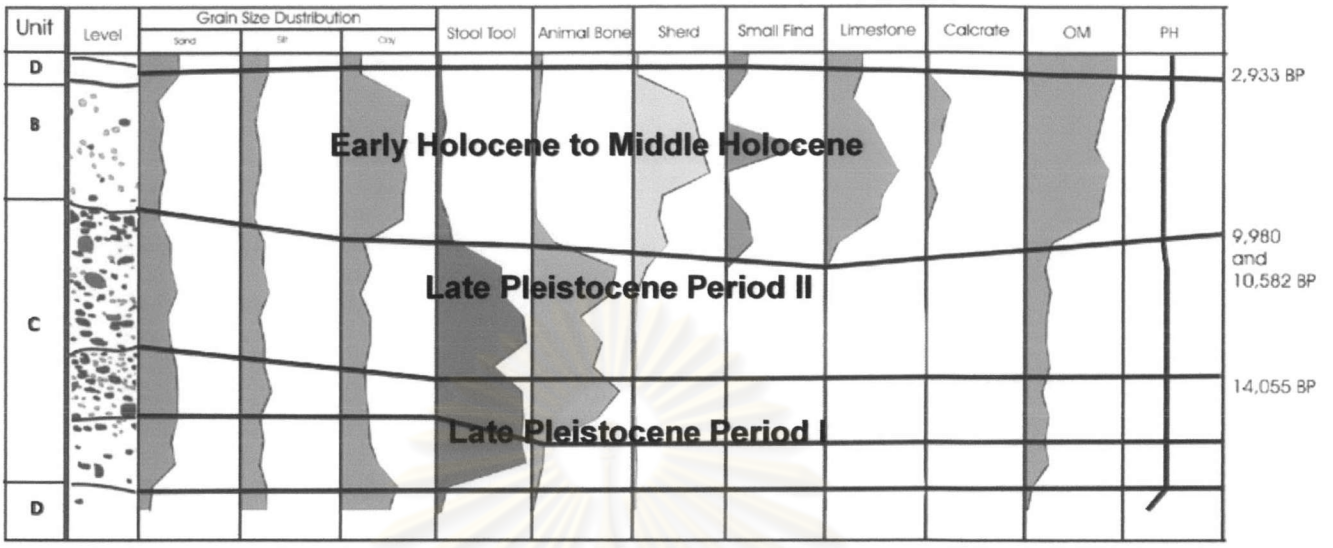


Figure 6.3 Total analysis and total number of archaeological remains by component and stratigraphic unit of Area3



6.2 Settlement Pattern Perspective

According to the extensive archaeological surveys conducted by Highland Archaeological Project phase I, a lot of prehistoric archaeological site was found surrounding the area but rare of rockshelter like in this study area. Tham Lod rockshelter seems to be a very good location (permanent place) and land marked for people in the past to settle their habitation. This shelter is situated in open doline that contains a small to medium flat floor space on shelter, dry, well protected from rain. This shelter is situated on the highest position within doline that easy to overlook around doline and the area nearby. There is also surrounded by an abundance of accessible natural resource, especially close to the Lang river, water and lithic raw material sources (Figure 6.4).

Based on geographical context, this rockshelter is located within the transitional zone between karst and non karst areas that suitable to increase the degree of habitation diversity. The abundance of natural resources in this area could be enough to support for human activities, especially prehistoric man. Lang River is the main river passing in the are a very close to Tham Lod rockshelter. The evolution of terrace

deposits of Lang river indicate that the river was located more closer to Tham Lod rockshelter than present. As it can be seem today, the Lang river valley supports a variety of plants and animals and human residents. The significance of the Lang River for prehistoric man is numerous of gravel deposited along the river. The analysis in type of gravel from the Lang river comparison with stone tools indicate that gravels from Lang river were the major raw materials for prehistoric man to make stone tools. It is also supported that, most of gravels from Lang river is able to be good raw material, because of their several sizes, high of hardness and easy to take from the river to rockshelter.

The evidence from archaeological excavation indicated long term used this rockshelter for habitation site by prehistoric hunter-gatherers. Gravel deposited in area 1 represented that stream used to pass this shelter. After that, this stream changed flow direction and then no longer pass through this shelter. The rockshelter become suitable to serve as a good place for setting up a base camp for people to live a bit away from river. Archaeological remains such as numerous of stone tools, animal remains and shells also confirm that this place had evidence of manufacturing, processing and maintenance activities. The activities suggest the processing of animals which found numerous of animal bones fragments, the manufacturing of stone tools which found entire stage to finish stage of stone tools production such as utilizes cores, wasted cores, broken cores, primary wasted flakes and secondary wasted flakes, the maintenance of stone tools which found reshapening flakes or the trace of retouch on utilized cores. All of activities indicated Late Pleistocene Period occupation.

The interpretation of settlement pattern guided in general that prehistoric people activities at the Tham Lod rockshelter were directly related with environment. In addition to that, main natural resources were classified into two sources; mountain and river. The mountainous features in the area comprise cave and rockshelter enabled to support for human to use and live comfortably. Wild animals were abundant for hunting and transported them back to the shelter for processing and cooking. The Lang river was a raw material sources, especially, gravel was the main raw material for making stone tools at the rockshelter. This evidence and archaeological remains indicated

long term temporary camp settlement patterns from Late Pleistocene until Late Holocene. After that, this shelter was functionally changed to burial site but temporary settlement still went on (Figure 6.5).

6.3 Site Function

The settlement pattern of human at Tham Lod rockshelter was occupied by prehistoric hunter – gatherer groups which have long periods of to use this rockshelter for living during late Pleistocene. The location of the rockshelter and its material cultures suggests that this shelter was primarily used as a temporary camp and as protection from rainy season and flooding. According to archaeological remains, site function can be classified into 4 functions as follows:

1. Temporary habitation camp

Prehistoric people have been used this rockshelter for temporary site since late Pleistocene period. Tham Lod rockshelter and adjacent sites were mainly occupied by hunter – gatherer groups, indicated by high density of archaeological remains such as stone tools, animal remains and shells. The pattern of archaeological remains indicates that this camp has been used for animal processing, cooking and consumption after animals and shell remains were hunted and collected from their natural resources around the rockshelter.

2. Manufacture and maintenance stone tools site

Due to the location of Tham Lod rockshelter close to the Lang river, it is reasonable for prehistoric people to select and collect the gravels from the Lang river and carried them back to the rockshelter for making stone tools. This is confirmed by archaeological remains especially cores and flakes that were found extensively within 3 areas of excavation. Cores and flakes analyses revealed the stone tools manufacturing and maintenance activities occurred at the site. Utilized cores, wasted cores, broken cores, hammer stone, primary wasted flakes, secondary wasted

flakes were also deemed that the site has been used to produce stone tools since the beginning until finishing the process.

3. Refuse Site

After prehistoric people finished their activities, numerous of un-used material were remained. A large number of animals bone fragments, shells, wasted cores, primary wasted flakes and secondary wasted flakes was un-used material remains. The spatial distribution of them especially in area 1 and area 2 suggested that this rockshelter was a refuse site, for example, animal bones fragment in area 1 (level 25 – 30 : 330 – 380 cm.Dt.) were tossed near the southern wall.

4. Burial Site

The cultural chronology from late Pleistocene phase II indicated that this rockshelter has become a burial site. Two of human skeletons were found. Human skeleton I was an "extended burial" with stone tools associated with the burial and indicated the time to approximately 12,100 ± 60 years BP by AMS dating. Human skeleton II was found underling that was burial I characterized by a "flexed burial", with stone tools in association with burial. AMS dating was given the age approximately 13,640 ± 80 years BP.

6.3 Preliminary paleoenvironment interpretation

This research has not been paid too much attention on the paleoenvironmental aspect, but the geological and archaeological records from the excavation can preliminary help in interpreting paeoenvironment by the characteristic of sediment deposited and animal remains.

Beginning of the from late Pleistocene and older, a few evidence for interpretating paleoenvronment is available. In the lower part of late Pleistocene

deposited, lateritic soil formed and being graded to be laterite. The deposition during this time may has been affected by groundwater and alternate wet-dry season.

During the late Pleistocene period, homogenous sediment deposit made the difficulty to interpret the paleoenviroment. However, the analysis of animal remains from the excavated area has confirmed that some animals are still exist until today such as deer, bovid and monkeys. A similar group of animals was found in the other archaeological site near Tham Lod rockshelter such as spirit cave (Gorman 1970), Banyan cave (Reynolds 1992) and Ban Rai rockshelter (Shoocongdej 2001,2002). It can be indicated that the environment has fundamentally little changed and nearly same the present.

The sedimentary deposit represented the severe flooding in the area occurred sometimes between early Holocene to middle Holocene. The flooding raised water level up to the high area of rockshelter. It can be assumed that this period was high frequently of rain fall making the weather become wet. The rockshelter or upland area seemed reasonably to be the good place for human in the past used to live safely. Even today, the area suffers from high quantity rate of raining and high water level in Lang river that, sometime, flood cover the middle terrace around, particularly during rainy season.

This interpretation on paleoenvironment is the first attempt to describe micro paleoenvironment only in the study area. However, the full research of paleoenvironment around the area especially high land region is important and necessary to understand the adaptation of human with the environment. Interdisciplinary research in the area about paeloenvironment is, therefore, necessary.

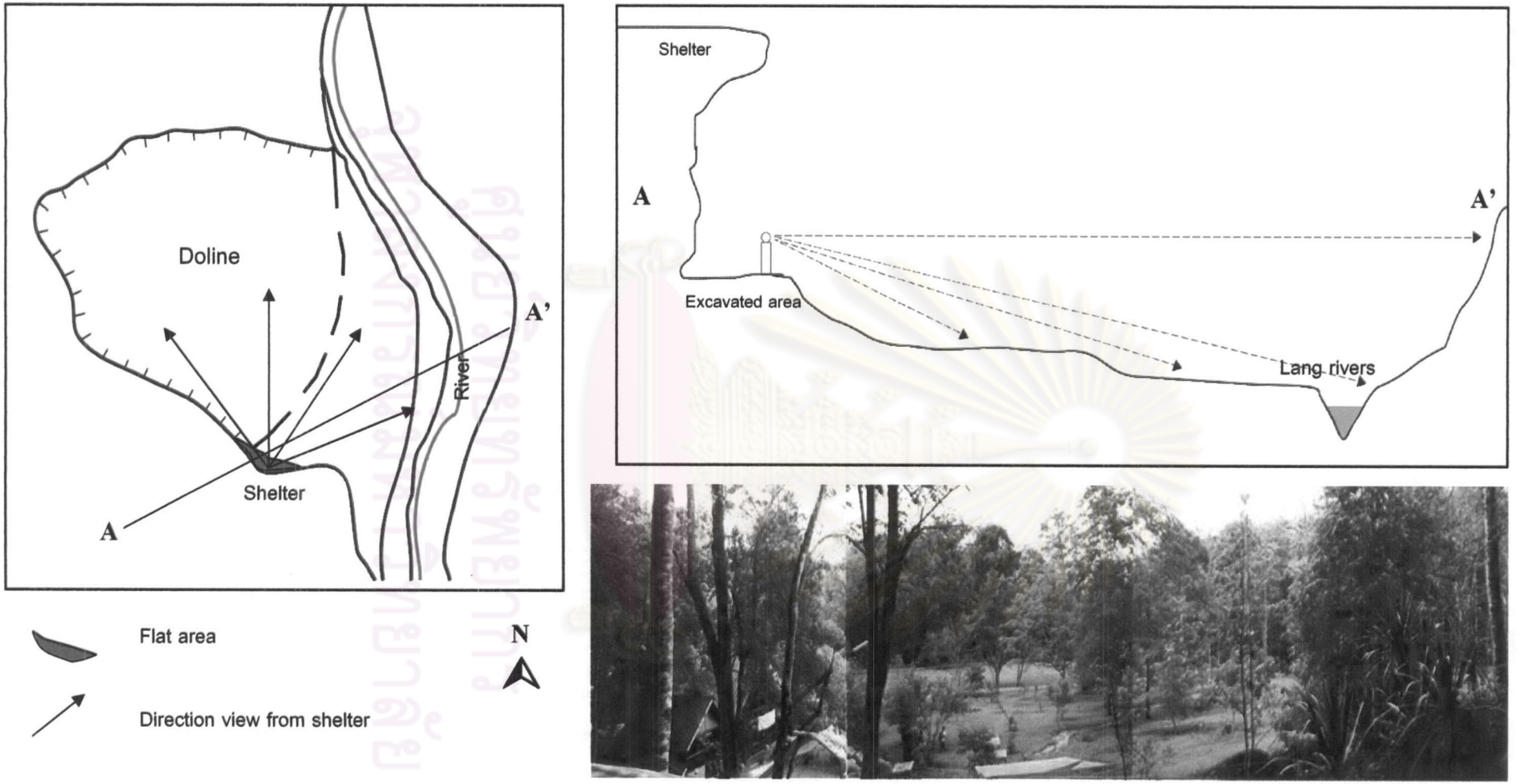


Figure 6.3 Direction view from the rockshelter for contact with the natural resources

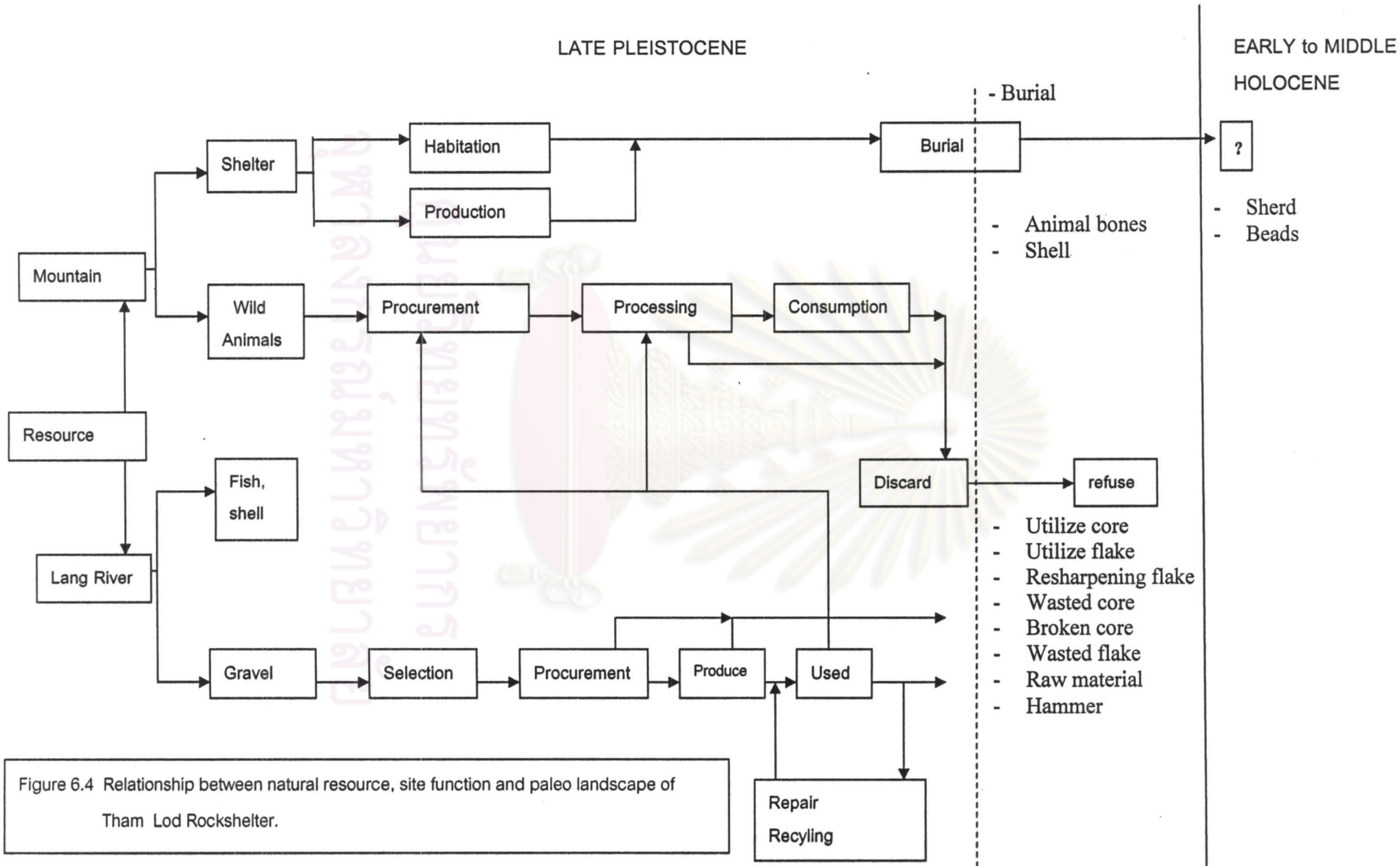


Figure 6.4 Relationship between natural resource, site function and paleo landscape of Tham Lod Rockshelter.