

Trung S-n Hydro-electric Project in the project for
technical supports (PHRD grant) preparing for the plan
''Vietnamese Hydro-electrical Development''

Final Report

*"Investigating tangible cultural resources in the area of
Trung S -n Hydro-electric Project , Thanh Ho ,
province"*

Consultative group: Viet Nam Institute of Archaeology

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Report

Investigating tangible cultural resources in the area of Trung S-n hydro-electric project, Thanh Ho, province

1. Project overview:

1.1. Introduction

The contract MT-04: "Investigating tangible cultural resources in the area of Trung S-n Hydro-electric Project, Thanh Ho, province" has been done by the consultants of ViÖt Nam Institute of Archaeology, a partner of Trung S-n Hydro-electric Project in the project for technical supports (PHRD grant) preparing for the plan "Vietnamese Hydro-electrical Development".

Trung S-n Hydroelectric Project is multi-purposed, including electrical generation, flood prevention and water control in M. River in the dry season. The dam base is projected to build in the lower area of M. River, 25 km from Vietnamese-Laotian border in Co Me village, Trung S-n commune, Quan Ho, district, Thanh Ho, province. The flow behind the dam will run in ViÖt Nam territory. A cemented dam, which is 88m high and 353m long, will form a reservoir with the capacity of 112 million square meters and the surface area of about 13.13km², is to serve the electrical generation of the four groups of turbines with the total power of 250MW.

In the period of investigation and exploration to prepare for the investment, The PECC4 (the fourth Consultative Company for Electronic Construction) has taken a draft report on the environmental effects for the project. After examining that report, the Management Board of Trung S-n Project has some suggestions to complete the report, including the investigations of tangible cultural resources. Based on that, the Management Board of Trung S-n Project has signed the contract of consultative services for the matter of "Investigation of tangible cultural resources in the area of Trung S-n Hydro-electric Project with ViÖt Nam Institute of Archaeology on 18th April 2008.

This report, which has been set up and carried out by the consultant group is to solve the problems of

tangible cultural resources in the report 'environmental assessment' of Trung S-n Hydro-electric Project.

1.2. Legal environment

The investigation of tangible cultural resources in the area of Trung S-n hydroelectric project in Thanh Ho, province has been carried out on the following legal bases:

-Based on the Law on Cultural Heritage passed by the National Assembly of the Socialist Republic of ViÖt Nam on June 29th 2001.

-Based on the Decree No 92/2002/NDD-CP on November 11th 2002 with the government detailed properties in some articles of the *Law on Cultural Heritage*.

-Based on the daft of the investigation and design of Trung S-n Hydro-electric construction, the period of pre-invetigation done by the fourth Consultative Company for electric construction on September 2004, which was ratified by the ViÖt Nam General Company of Electricity in accordance with the Decision No.2847/Q§-EVN-T§-KTDT on October 06th 2004.

-Based on the Decision No.635/Q§-EVN-T§-KTDT on April 14th 2008 by the General Director of ViÖt Nam Electricity about the ratification of the contract of MT-04: Investigating tangible cultural resources in the area of Trung S-n Hydro-electric Project – the PHRD grant Project for the preparation of the project for development of ViÖt Nam electric resources.

-Based on the Decision No. 807/Q§ - KHXH on May 10th 2005 by the President of the ViÖt Nam Academy of Social Sciences defining the function, responsibilities, authority and organization of ViÖt Nam Institute of Archaeology.

-Based on the consultant service contract No.16/H©TV-AT§TS-P2 of the the project for technical supports (PHRD grant) preparing for the plan 'Vietnamese Hydro-electrical Development', which was signed on 18thApril 2008 by the Management Board of Trung S-n hydroelectric project and the ViÖt Nam Institute of Archaeology.

-Based on the World Bank regulations and guidelines on tangible cultural heritage in the correlate articles in the addendum of consultative service contract No.16/H©TV-AT§TS-P2.

-Based on the official document No. 683/TDTS - P2 by the department of Environmental and Social Experts -

the Management Board of Trung Sơn Hydroelectric Project to the draft report on the investigation of the tangible cultural resources in the area of Trung Sơn Hydroelectric Project.

1.3. Objectives, tasks, methods and conducting modes

-Objectives:

To conduct an overall investigation of tangible cultural resources in the lake bed, and then do consultative work for the Management Board of Trung Sơn Project to have sufficient procedures for constructing Trung Sơn hydro-electrical plant and contribute to the protection of national culture in accordance with the *Law on cultural heritage* of Vietnamese State.

The tangible cultural resources are considered to be tangible cultural heritage as in the Article 4, Item 2 in the *Law on cultural heritage*: ‘‘Tangible cultural heritages are material products of historical, cultural or scientific value, including historical-cultural relics, famous landscapes and beauty spots, vestiges, antiques and national precious objects’’.

The archaeological investigations and explorations in the area of Trung Sơn Hydro-electric Project are aimed at discovering and studying potential areas (such as archaeological sites and artifacts in the lake bed...) or/and studying and evaluating archaeological relics and artifacts exposed on the ground, which have been or haven't been registered in the list of national and local relics related to the present local life (such as communal houses, pagodas, temples, burials...or other architectural relics...). From the study results, the consultative group will present specific solutions to each site or group of sites and artifacts in order to protect the values of traditional culture in the best.

The archaeological investigations and explorations are also aimed at collecting more historical data and artifacts to serve the museum display and valorize the national culture in the cause of economic, cultural and social development in the western Thanh Hoá.

- Tasks:

The main tasks of the consultants are to identify the landmark and to evaluate the effects of the tangible cultural varieties including human and natural resources that have been or have not been registered, removable or irremovable in the area of Trung Sơn Hydroelectric Project.

- Methods:

The approaches of inter-disciplinary studies of archaeology, ethnology and culture are used to discover any cultural, historical and archaeological remains, collect sufficient information and then register and

build a map of relic distribution in the area. In which, wide-scale investigation and focal survey are the two modes for the consultative group to work.

Test-excavations are conducted at some main points or typical sites to identify their scale, characteristics and dates. The test-excavation results will serve as a base to proposed treatment solution to each specific relic.

During the working time, the consultative group will be in close contact with the local authority and people now living in this area in order to search for and collect archaeological artifacts that are now being kept.

All the found relics and artifacts will be described in the registration form, photographed, drawn and filed (*in the Appendix of the report*).

- Conducting modes:

The archaeological approaches are mainly used to investigate widely all the area of Trung S-n Hydro-electric Project. In which it is necessary to focus on the study of the potential artifacts and sites.

1.4. The investigation areas and conducting steps:

The investigation and explorations areas are carried out in accordance with the profile of basic designs of Trung S-n hydroelectric project, including:

- The frequently-flooded areas
- Workers' camps and their supporting camps
- Borrowed and wasted land areas.
- Entry roads and conveyer belts
- Re-housing area
- Raw material mines

Therefore, the investigation and exploration areas are carried out in the administrative locations of 25 villages in five communes, three districts and two provinces. They are Ta B,n, Co Me, Qu,n Nhôc of Trung S-n commune, Quan Ho, district; Tui Ch,nh, KÝt, Mau, ChiÕng N-a, Nụng 1, Muêng 2 villages of M-êng Lý commune; Lxn, Tụ Cãm, U, Cự Gi,ng, ChiÕng Lý, Pa Bóa villages of Trung Lý commune; Poom Khu«ng, Kha Ni, Ko §ãc, Poom Bu«i villages of Tam chung commune, N-êng L,t district (Thanh Ho.); Pĩ LÇu, Tụ Lụo §«ng, Tụ Lụo T©y villages of Xu©n Nha, Méc Ch©u district (S-n La province).

However, the profile of basic designs was built before 2004, and now there some changes in administrative locations. Particularly, Poom Bu village has belonged to M-êng L,t town since 2004; Tụ Lụo §«ng, Tụ Lụo T@y villages have belonged to T@n Xu@n commune since 2007.

Table 1: The present administrative locations

Province	Districts	communes	Hamlets/villages
Thanh Hóa	Quan Hóa	Trung Sơn	Tà Bán, Co Me, Xước, Quán Nhục
	Mường Lát	Mường Lý	Tài Chánh, Kít, Mau, Chị Mưa, Nàng, Muống 2
		Trung Lý	Lìn. Tà Cóm U, Cà Giáng, Chàng Lý, Pa Búa
		Tam Chung	Pôm Khuông, Càn, Pôm Buôn, Kha Ni, Lát, Ko Đốc, Lâm Trường
Sơn La	Mộc Châu	Xuân Nha	Tà La Đông, Tà Lao Tây, Pù Lầu
		T@n Xu@n	Tụ Lụo §«ng, Tụ Lụo T@y

The work is done in the four stages:

- Investigate and explorations the whole area of dam base and lakebed and other related areas in order to identify and set up statistics of various types of relics and artifacts.

- Conduct test-excavations at the major points with traces of archaeological cultural layers in order to confirm the types of relics and artifacts and thereby to propose treatment solutions.

- Classify collected relics and artifacts; complete their registration forms, take their photographs, complete field-work drawings, set up charts and tables of statistics...

- Analyzing and finishing the final report.

1.5. Implementation plan

In the stage I and II, the consultative group is divided into 3 sub-groups that work independently under the direct control of the Head of the consultative group:

- The first sob-group investigates the villages located round the Quanh stream and its branches in Trung Sơn (Quan Hóa), Tân Xuân, Xuân Nha communes (Mộc Châu district)

- The second sub-group has a survey in the villages in the right side of the Mã River, Trung Lý commune in Mường Lát town

- The third sub-group investigates in the villages in the left side of the Mã river, in Mường Lý and Tam Trung (Mường Lát).

2. The results of investigations and surveys

2.1. The geographical and geological locations and environmental perspectives

This item is based on the study results in the report on the basic designs of Trung S-n Hydroelectric Project; the book 2.2: report on geology – geomorphology in the construction area and a small part is the results of the investigation in the working area of the consultative group.

The area of Trung S-n Hydroelectric Project is located in M. River basin in the western Thanh Ho, and Hoµ B×nh. This is a highland of northwestern ViÖt Nam, including the mountain range running northwest – east-south direction; the cliff is fairly sloping, 10° – 30°. The mountainous ranges along the river are gently sloping; the absolute altitude vibrates from hundred meters to hundred meters.

In the area with two deep geological faults in M. River bank and other deep faults in S-n La zone:

- *M. River geological fault* is 390km long (including almost 100km in Laotian land), in common north-west – east-south direction, with many sections in opposite direction, starting from N-êng ,ng (TuÇn Gi,o) and ending in the coastal area of Qu¶ng X-¶ng-T¶nh Gia (Thanh Ho,).

- *S-n La geological fault* is about 360km long, starting from TuÇn Gi,o (Lai Ch@u) and ending in Nga S-n coast (Thanh Ho,) in the common north-west – east-south direction, except ChiÖng Ve – Mai Ch@u in semi-meridian. S-n La geological fault shows discontinuance and weak geo-morphological changes.

This area has two main terrain types:

- The erosion type is the main one with the largest scale, overlapping the hill range with high separation rate. Based on this rate and terrain sloping rate, it is possible to divide mountain ranges: the erosion range with medium separation and the other erosion range with sloping to very sloping cliffs.

- The agglomerated type: on the plan, the geomorphological type coincides with the distributed area of Quartery sediments in form of a narrow, flat strip. According to the altitude, it is possible to divide in the first level terrain, high alluvial fields and other low alluvial fields, sand dunes, sand beaches along the river.

The M. river system includes the main flow of M. river and large sub-flow of Chu river originated from Pu Va mountainous area (¶iÖn Bi^an, Lai Ch@u provinces),

512km long, running in northwest - southeast direction through S-n La, Sçm N-a (Lao), Hoạ Bxnh, Thanh Ho, and pouring into L¹ch Truêng, L¹ch Híi in the coastal area of Thanh Ho, province. According to the statistics, M· river basin is 28,400km². Its geographical location to the dam line is at 20°6' - 20°0' north latitude and 104°6' - 105°0' east longitude. The main river, with Chanh stream as its branch, comes from Y^an Ch@u mountainous area (S-n La province) to M· river at Qu,n Nhôc village, 0.7km from the dam line.

The stream branches of M· river are relatively dense, in form of fish bone, with the length from 2kms - 3kms to tens of kms. Their most typical feature is semi-meridian and consists of many winding sections. The separating level along streams is often low in the lower part and suddenly increases higher in the upper part.

The work area is located in tropical area with monsoon. The total sunny hours are over 4,400. The annual average temperature is 26.3°C. The highest temperature is 42°C and the lowest is - 0.8°C. The rainy season starts in June and ends in October. The heaviest rain is in August, September and October. The rainy days in Mùng Lát are 49days per year. The rain is unevenly distributed. The highest humidity is 93% in August - October, the lowest is 6% in January - March, and the average level is 85%.

The main wind direction changes very strongly according to the seasons. In summer, the main direction is east and southeast. In winter, the main direction is north and northeast. The west wind is dry and hot. It often appears in early summer and lasts 20 - 30 days per year. In September, there is often heavy and storms.

The land traffic in this area is very hard. From Mai Ch@u town, there is a 13km-long road to Co L--ng. Go along M· riverbank on the rock-covered road to the riverbed from Co L--ng. The traffic system within the local area is very bad and inconvenient for vehicle. The main traffic ways are paths made by the local people along the riverbank and across mountain. Cars or coaches can only reach the commune centre or some large villages. In particular, Mùng Lý that has just set up in 2007 has only one path to the commune centre on foot or by motorbike.

The traffic on river from Co L--ng to the dam line by boat is more convenient in the flood season. In the dry season, the traffic is difficult due to the narrow way from X-íc village to Mùng Lát - with a lot of waterfalls and rapids; boats and junks can only travel in a short distance.

The environmental landscape in this area is a combination between ranges of successive hills and mountains with high separating level and the river bed has a narrow winding slope with a lot of waterfalls and rapids between mountain creeks, joining with branch streams to pour into the M· river in form of fish bone. The land and water traffic has been very difficult to date.

The mountain and hill terrain is the most distributed in the working area. Most of them were formed by degenerated sediment rocks of M· river system in northwest - southeast direction and saddle-shaped semi-meridian.

The rivers and streams are narrow in the river basin if very slopping, with one-graded bench; there are alluvial warps, sand dunes and gravel beaches along the river. The one-graded bench is distributed in the altitude from 7m - 11m, with narrow surface that is sloping to the riverbed. The alluvial warps are located at the altitude from 2m - 3m, with narrow area that is sloping to the riverbed and flooded in the rainy season. The sand dunes and gravel beaches along the river are distributed sparsely in the winding sections of the river, which are half-flooded. The sand areas are often some tens of meters to some hundreds of meters long and some tens of meters to 100m wide.

In general, the hill and mountain terrain is full of obstacles, difficult to access, and inconvenient for living and movement of the local inhabitants, especially the pre-protohistorical ones. So far, in the working area, except the villages of H'Mong minority with shifting cultivation on very high mountains (often outside the riverbed), the Thai villages are often located in the junction of rivers and streams, where is fairly favorable for living and moving. The finds of pre-protohistorical sites in these area are very rare and extremely important. The historical and cultural sites and the burials are found with larger quantity and are often closely related to modern local people or their provenance. These sites used to be located in the areas along the mountainsides and rivers/streams or the flat land alluviated by the big rivers or streams. The areas with particular relic types will be referred in details in the chapter 3.

2.2. The results of the survey at the hydroelectric dam base:

The area at the dam base is located in Co Me

village, Trung Sơn commune, Quan Ho, district, Thanh Ho, province. It is possible to go to the dam base on land and by water route.

The road is from Mai Châu town to Quan Ho, (13km) and then to Co Lãng town. The rock-covered road from Co Lãng along M. river to Trung Sơn centre is about 22km, and then to Co Me (about 3 km away) - where is the dam.

The river route is also favorable; the section from Co Lãng to Co Me is large, with a few waterfalls and rapids. It is possible to travel by boats or canoes from Co Lãng up to the dam about 15km.

The dam base was built in a narrow section of riverbed, with steep cliffs at both sides. The narrow riverbed with many waterfalls and rapids, with steep cliffs are the common characteristics of the M. river and the working area. At the dam base, the right riverbank has a trace of a tunnel running deeply for geological exploration. This tunnel has been collapsed and filled with rocks and earth. Now, what can be seen in a low track caused by falling rocks, waste wood trunks that were used to support the tunnel and some piles of rocks and earth thrown to the cave entrance. The coordinate of this site is 20°36' north latitude and 140°50'201'' east longitude. The altitude from the sea level is 97.5m.

Also at the right bank, about 200m from the drilled tunnel to the upper river is Qu, n CÇu spot - a large gravel and sand dune area located on the river bank, next to the flow, which is exposed only when it is dry season. The gravel area is in coordinate of 20°36'665'' north latitude and 140°50'093'' east longitude. The altitude from the sea level is 88.6m.

The current situation of the investigated area has been mentioned above. In the report, due to the specially important character of the dam area, we applied the methods investigating and exploring on main points, not on a large scale as in other areas.

The results of the investigation and exploration show that the dam base and its surrounding area are full of obstacles and difficult to access; the mountain cliffs are high and steep; they belong to the type of river bank, gravel areas and sand dunes that were half flooded and not favorable for settlement and daily activities of the ancient and modern inhabitants. There

have not any finds of tangible cultural relics or archaeological artifacts at this area. Therefore, the construction of the dam base faces no tangible cultural obstacles.

2.3. Overview on found sites and artifacts

The archaeological sites, artifacts and tangible cultural spots are all discovered in such areas as riverside, streamside, hillsides, stream junction, especially in rather plain areas formed by big streams. These areas have the medium altitude, with source of water supply all year round and not threatened by floods. The terrain is rather favorable for residential settlement and developing economic activities and natural exploitation in other areas. The above area coincides as same as the area of Trung Sơn Hydroelectric river reservoir...

The investigations identified 11 sites with traces of tangible culture (6 archaeological remains, 2 collections of archaeological artifacts and 3 votive shrine of such villages). Of the 11 sites, 7 in the reservoir area and 4 outside of it.

Classification in terms of the affected areas of the riverbed:

- The sites in the hydroelectric reservoir: Paleolithic Nùng village 1; **Khiêng San** of such villages as Ta Bìn, Tụì Chanh, Nàng 1; Huài Pa ancient burial, collections of historical, collections of Metal Age.

- The sites outside the affected area: Neolithic - Metal Age Cỏ Cave, Nùng Chanh Rockshelter, Tiêng Túng burial and stones engraved with with inscriptions at Tam Chung.

The archaeological artifacts have been collected in the villages of Ta Bìn, Tụì Chanh; Nùng 1 and Lxn.

Table 2: Morphological and affected riverbed area classification

Site types	In the riverbed	Outside the affected area
Paleolithic	Nùng village 1	
Neolithic – Metal Age		Cỏ Cave
Khiêng San	Ta Bìn; Tụì Chanh; Nùng 1	
Cave burial		Nùng Chanh Rockshelter
Ancient burial	Huài Pa	Tiêng Túng burial
Stone with inscriptions		Tam Chung
Collection of artifacts	a collections of historical-time artifacts, a collections of	

	Metal Age-time artifacts	
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The site distribution in administrative locations:

Thanh Hũa province

Quan Hũa district:

- Trung S-n commune: Nụng Chanh rockshelter; Huai Pa tombs (Ta B,n); Khi^ang S»n Ta B,n.

M-êng L,t district:

- M-êng Lý commune: B¶n Nụng 1; Khi^ang S»n of Tụi Ch,nh village, Nụng 1 village; Ti^an T»ng burial in Chiông N-a.

- Trung Lý commune: no finds of archaeological sites and artifacts.

- Tam Chung commune: Cồ Cave in B¶n L,t; stones with inscription.

- M-êng L,t town: no finds of archaeological sites and artifacts.

Son La province

Méc Ch@u district:

- T@n Xu@n commune: burial no finds of archaeological sites and artifacts..

- Xu@n Nha commune: no finds of archaeological sites and artifacts (*See Distributive Map*).

Table 3: Site classification in terms of administrative locations

District	Commune	Village	Sites
Quan Hũa	Trung S-n	Ta B,n	Nụng Chanh rockshelter; Huai Pa burial area (Ta B,n); Khi ^a ng S»n Ta B,n.
M-êng L,t	M-êng Lý	Nụng 1	Ban Nụng 1; Khi ^a ng S»n
		Tụi Ch,nh	Khi ^a ng S»n
	Trung Ly	Chi ^a ng N-a	Ti ^a n T»ng burial
		Lxn	
	Tam Chung	Ko §ãc	stones with inscription
		L,t	Cồ Cave
Méc Ch@u	T@n Xu@n	Tụ Lụo T@y	
Quan Hũa, L,t	M-êng		a collections of historical-time artifacts, a collections of Metal Age-time artifacts

Morphological classification:

- Paleolithic sites: Bả Nằng 1.
- Neolithic and Metal Age cave site: Cỏ Cave (Bả Nằng 1, t).
- Votive shrine of such villages (called Khiêng San) as: Ta Bả Nằng, Tỏi Chanh, Nặng 1.
- Burials in the cave: Nằng Chanh Rockshelter (Tỏi Bả Nằng).
- Ancient tomb areas: Huồi Pa (Ta Bả Nằng), Tiên Tằng burial (Chiông N-a).
- Stones with inscriptions at Tam Chung.

Table 4: Morphological classification

<i>Site Type</i>	<i>Site Name</i>	<i>Site Characteristics</i>
The Paleolithic Site	Nằng 1 village (1)	The site is situated in the centre of Nằng 1 village, Mường Lý commune, Mường Lát district, Thanh Hoá province. The coordinate is at 20°32'433'' Northern latitude and 104°46'078'' Eastern longitude. Its altitude is 119.4m
The Neolithic – Bronze Age Site	The Cỏ cave (2)	The site lies in the Lát village, Tam Chung commune, Mường Lát district, and is about 300m from the Lát stream. Its coordinate is at 20°33'531'' Northern latitude and 104°36'849'' Eastern longitude. The site is 210m above from the sea level.
Artifact collection	The pre-protohistoric period of time (3)	Recovering 26 artifacts encompasses 5 bronze items, 20 stone artifacts and 1 bone-horn object.
	The historical period of time (4)	The artifacts include 1 bronze bar and a collection of zinc coins. The zinc coin collection comprises of 171 specimens put in a stoneware pot, dating to 3 Nguyen-time dynastic titles namely Gia Long, Minh Mệnh and Tự Đức
The cave burial site	The rockshelter of Nằng Chanh (5)	It is located in the head of Tả Bán village, Trung Sơn commune, Quan Hoá district. The site's coordinate is at 20°38'468" Northern latitude and 104°51'588" Eastern longitude. The altitude is over 300m.
Ancient burial	The burial of Tiên Tằng (6)	It lies in Chiêng Nứa village, Mường Lý commune, Mường Lát district. The site's coordinate is at 20°31'512" Northern latitude and 104°42'112" Eastern longitude. It is 183m from the sea level.
	Huồi Pa (7)	The burial area lies next to the stream of Pa, Tả Bán village, Trung Sơn commune, Quan Hoá district. It is at 20°37'514'' Northern latitude and 104°49'780''

		Eastern longitude. The site's altitude is 131m.
A stone carved with characters	Tam Chung (8)	It is situated in Tam Chung commune, Mường Lát district, at 20°31'940" Northern latitude and 140°40'263" Eastern longitude. It is 182m above the sea level.
Khiêng sắn	Ta Bán (9)	It lies in the head of Ta Bán village, Trung Sơn commune, Quan Hoá district, at 20°37'300" Northern latitude and 104°50'237" Eastern longitude. The site's altitude is 145m.
	Tài Chánh (10)	The site is located at the head of Tài Chánh village, Mường Lý commune, Mường Lát district, at 20°32'849" Northern latitude and 104°47'434" Eastern longitude. Its altitude is 146m.
	Nàng 1 (11)	It is at the head of Nàng 1 village, Mường Lý commune, Mường Lát district, 20°32'528" Northern latitude and 104°46'104" Eastern longitude. The site's altitude is 126m.

The sites and artifacts newly discovered have different characteristics but they are very important because this is the first investigation of tangible cultural sites in Western Thanh Hóa land.

Due to different characteristics, various approaches were different in accordance with each site. The collections of artifacts were not found in specific layers, so they have been just documented recorded in their profiles and are not considered as relics. Specific approaches to every site are mentioning in the following item by the team of consultants. The consultants will make various suggestions in accordance to each site such as: sites located outside the affected area do not have to solve during the construction and hydropower operation; solution to those sites outside the flooded zone but within the affected area; the sites in the riverbed, which have been area studied thoroughly in this investigation and it is necessary or not to remove them... In general, the sites located in the Trung Sơn Hydro-electric river reservoir must be handled before closing the dam to keep water. However, the treatment of these sites will not basically change the basic designs of Trung Sơn Hydro-electric project.

There are specific results of the investigation other areas outside the reservoir such as the dam base, the workers' camp sites, mines, material-storage yards, roads leading into the construction site. None of tangible cultural sites as well as archaeological sites and artifacts have been found there. Therefore, the construction of the dam base, the workers' campsites, building roads or clearance of the site for rehousing... will not meet any obstacles from cultural aspect.

3. Tangible cultural Site groups

3.1. Paleolithic site: Nàng 1

In this survey, the consultants discovered a Paleolithic site right in the center of Nàng 1, Mường Lý

commune, M-êng L,t district. The site has been named Bñn Nụng 1 as the name of the discovery area.

Its coordinate is 20°32'433'' Northern latitude and 104°46'078'' eastern longitude. The altitude is 119.4m from the sea level.

The site is distributed at the mountain foot, where slope is not great and near Nụng stream. This stream runs north - south and joins Ma river about 0.5km from Bñn Nụng 1 to the south. The stream runs round Nụng 1 site and surrounds its northeast, east and southeast directions. There is a small rivulet in the south that regularly has water in the rainy season. The western is just the range of high mountains.

It is possible to go into the site by land and waterway. The road is 22km from Co L--ng to Co Me mountain village, Trung S-n commune (the dam base). Along the riveside path up the right bank of M. river about 20km is through such mountain villages as Qu,n Nhôc, X-íc (Trung S-n commune), Mau, KÝt, Tui Ch,nh (M-êng Lý commune) to Bñn Nụng 1 where the site is. Other way is the road from M-êng L,t town, through the suspension bridge of L,t village, 3km down to the right bank of M. river to the People's Committee of Tam Chung commune, and about 25km of the riverine path along Ma river through Ko sãc village (Tam Chung commune), Chiông N-a village, M-êng 2 village, headquarters of the People's Committee of M-êng Lý commune to Nụng 1 village. Waterway is about 30km from Co L--ng to Nụng 1 village but it is possible to travel by this way in the flood season because in the dry season, there are waterfalls and rapids that boats and rafts are impossible to pass; or it is possible to travel by boat from Co L--ng to Tui Ch,nh village, then along the path near the mountain foot to the site. In general, it is rather difficult to go to the site.

Previously, the site was a high hillock but it is now partially flattened by local residents to build houses and roads. It is located in the surrounding area of Mr Ng@n V"n Thu's the house and some other houses nearby. The middle of the relics is the riveside path crossing in the East - West direction. On the surface of the sites, there are many big original rocks falling down from the mountain. The distributive site area is approximately 1000m². The artifacts and Paleolithic

tools are exposed on the surface so that it is possible and easy to observe and collect them. The tools are nice and very typical for the late Paleolithic in the Northwest Mountain (*Drawing 2*).

As for site strata, on the talus wall left by the locals when flattening to build their house, it is possible to see that the cultural layer is rather hard clay mixed with yellowish-brown gravels grits, about 0,5m - 1m thick and the artifacts collected in the layer. The sterile layer consists of original rocks in the decomposition process.

The collection of artifacts of the survey includes 15 typical stone artifacts with various types: end-chopper, side-chopper, three side-edged tool, points, pebble choppers, flakes... (*Drawings 3, 4, 5, 6 and appendix*).

Table 5. Stone tool assemblage of Ban Nang 1 site

Stone tool types	Sum
End- chopper	5
Side-chopper	2
Three side-edged tool	1
Point	1
Amorphous tool	1
Pebble tool	2
Flaked tool	2
Axe-like tool	1
	15

End- chopper:

End- chopper signed 08.BN1.ĐT: 1 was made from a dark blue river pebble which is square shape. A tool, totally covered by quite thickness brown patina. An user edge was made somewhere a middle of pebble, one top of tool is thickness it made a cone vertical section. Tool was made from flaking on one face of the core from many difference directions. A tool have a large edge angle. A body part still remained a original surface of pebble. Tool size : length 10,8cm; width 9,5cm; thickness 4,6cm.

End- chopper signed 08.BN1.ĐT: 2 was made from a quite big river pebble which is have dark blue colour, oval shape and uneven surface. Totally covered by quite thickness brown patina. An user edge was made somewhere a middle of pebble. Tool was made from flaking on one face of the core from the same direction with many layers it made a tool have a quite flat edge, large edge angle and sharp blade. A body part still remained a original surface of pebble. A butt of tool is an arc shape. Tool size: length 11,5cm; width 11,3cm; thickness 4,6cm.

End- chopper signed 08.BN1.ĐT:3 was made from a river pebble in triangle shape, outside covered by quite thickness light brown patina. An user edge was made at one top of pebble. Tool was made from flaking on one face of the core from the same direction with many layers. A medium strikes combined with a small refitting to made a sharp blade. A tool have a large edge angle. A body part had remained a original surface of pebble. Tool butt's have a pyramid shape. Tool size : length 7,5cm; width edge 9cm; thickness 3,4cm.

End- chopper signed 08.BN1.ĐT: 4 was made from a river pebble in oval shape. Chất liệu đá Basalt stone, outside covered by quite thickness brownish white patina layer. An user edge was made from a narrow part at middle of pebble, a blade was made from 3 – 4 big strikes and some small refitting. Tool was made from flaking on one face of the core, one layer from one way it was made a sharp blade and a narrow angle edge. A tool remained an original surface of pebble. Size: Length 12cm; body width 8,8cm; Blade width 7cm; thickness 3,8cm.

End- chopper signed 08.BN1.ĐT: 5 was made from a small river pebble in oval shape. Chất liệu đá Basalt stone, outside covered by a dark brown patina layer. A part of tool was black it cause by fire. An user edge was made from middle of pebble. Tool was made from flaking on one face of the core, one layer from one way. A curve blade made from three stroked, edge angle is narrow and sharp. A body part of tool still remained an original surface of pebble, a small part of butt was broken. In general, a tool look like a hoof of horse. Size : length 7,8cm; width 6cm; thickness 2,5cm.

Three side-edged tool: signed 08.BN1.ĐT: 6 was made from a quite big river pebble in oval shape, its basalt stone. A tool totally covered by a light brown patina layer. An user edge were make from 2 horizontal and 1 vertical margins of pebble, it made tool have an arc shape. Tool was made from flaking on one face of the core, one layer from one way. Vết ghè lớn liên tiếp, combined with a small refitting to made a sharp blade, blade angle is narrow. Size: length 9,5cm; width 13,4cm; thickness 3,9cm.

Point: signed 08.BN1.ĐT: 7 was made from a square, flat kidney-shaped, blue dark pebble. It was covered totally by a thickness brown patina layer. Its surface was weathered to create a rough and loose sand layer. A used blade was at a top of pebble. It was created by unifacially flaked technique from one direction, multi-layer flaking and the traces of flaking were relatively big and consecutive. Tool had a large edge angle caused by using two-edge flaked technique. A maximum natural stone was remained in this tool and its butt was in circular arc shaped. Size: length 13,5cm; width 10,1cm; thickness 4,4cm.

Side-chopper:

Side-chopper signed 08.BN1.ĐT: 8, was made from a flat kidney-shaped pebble. It was covered totally by a thickness brown-yellow patina layer. Its surface was weathered strongly to create a loose sand layer. A used blade was at an edge along the pebble. It was created by unifacially flaked technique from one direction, and one layer flaking. The relatively big traces of flaking were continuous from beginning to end, to create a narrow and curved edge. Because of weathering, its edge was rather obtuse. Its body still remained an original surface of pebble. Size: length 6,8 cm; width 9,7cm; thickness 3 cm.

Side-chopper signed 08.BN1.ĐT: 9, was made from non-shaped Basalt stone pebble. It was covered by totally by slight brown patina layer. Its blade was created by an edge along its body. It was created by unifacially flaked technique from one direction. The big traces of flaking were continuous to create a narrow and sharp edge. Size: length 6,8cm; width 10,2cm; thickness 5,8cm.

Amorphous tool: signed 08.BN1.ĐT: 10, was made from kidney-shaped Basalt stone pebble. It was covered by a light brown patina layer. Its blade was an edge along the tool, the left edges and belly were flaked separately from the surface of pebble. It was created by multi-layer flaked technique from various directions from the beginning to end. The moderate traces of flaking were continuous. A sharp blade was flaked from the back to the body of pebble. Two edges were flaked from the back, perpendicular to the blade. Size: length 6,6cm; width 8cm; max. thickness 4,6cm

Semi-pebble tool: signed 08.BN1.ĐT: 11, was made from a flat kidney-shaped Basalt stone pebble. It was covered totally by brown yellow patina layer; its surface was being weathered strongly. It was created by striking $\frac{1}{2}$ of a pebble along an edge in bigger surface, then flaking a head of pebble to create a blade. Its blade was created in the form of convex arch from a head to the middle of pebble. It was created by unifacially flaked technique from one direction, with one layer to create sharp and narrow blade edge. Flaked area was from surface of pebble to surface of striking with little and continuously traces. The original surface pebble remained in the back of tool. Size: length 18,6cm; width 9,7cm; thickness 2,9cm.

Quarter of pebble tool: signed 08.BN1.ĐT: 12, was made from flat kidney-shaped quartz pebble. It was covered by light brown patina layer. It was created by striking $\frac{1}{2}$ of pebble along a edge, then flaking in the body of pebble to form a tool with the shape of $\frac{1}{4}$ pebble. It was created by unifacially flaked technique from one direction with one layer. Flaked area was from surface of pebble to surface of striking. There were 3 continuously traces of flaking and some small traces to amend blade edge. Its blade was sharp and narrow. The original pebble remained in the back of tool. Size: length 7,6cm; width 8,8cm; thickness 2,5cm.

Flaked tool:

Flake tool, signed 08.BN1.ĐT: 13 was a flake in the form of a triangle that was splited from a pebble. It was covered by a thickness brown patina layer with even and flat back and belly parts. The original surface of pebble was remained in two edges of tool. The blade was amended by some little traces of flaking. Amended traces were followed one direction from surface of belly to surface of back to create a sharp tool as a knife. Size: length 6cm; width 5,7cm; thickness 1,5cm.

Flake tool, signed 08.BN1.ĐT: 14, was made from a large Basalt stone pebble chip. It was covered by a thickness brown patina layer that was being weathered strongly. This tool was created from various traces of flaking that followed different directions surrounding edges from surface of pebble to surface of belly. Big traces of flaking together with small amended traces created a sharp and narrow blade. It was considered to be a non-shaped tool. Size: length 7,2cm; width 8,3cm; thickness 3,2cm.

Axe-like tool: signed 08.BN1.ĐT: 15, was made from a flat kidney-shaped, black quartz pebble. It was covered by a livid patina layer. A surface remained original surface of pebble and other surface was flaked to take off original surface of pebble by large traces of flaking, then was amended by small traces of flaking to create a tool with long axe shaped and a sharp and narrow blade. It could be an unfinished stone axe in the period of the Late New Stone Age or Earlier Metal Age. Size: length 13,6cm; width 6,5cm; thickness 2,1cm.

Table 6. Stone tool assemblage of Ban Nang 1 site

	Stone tool types	Registered Number	Raw material	Size (cm) (length x width x thickness)
1	End- chopper	08.BN.1. ĐT:1	Basalt	10.8 x 9.5 x 4.6
2	End - chopper	08.BN1. ĐT:2	Basalt	11.5 x 11.3 x 4.6
3	End-chopper	08.BN1. ĐT:3	Basalt	7.5 x 9.0 x 3.4
4	End-chopper	08.BN1. ĐT:4	Basalt	12.0 x 8.8 x 3.8
5	End-chopper	08.BN1. ĐT:5	Basalt	7.8 x 6.0 x 2.5
6	Three side-edged tool	08.BN1. ĐT:6	Basalt	9.5 x 13.4 x 3.9
7	Point	08.BN1. ĐT:7	Basalt	13.5 x 10.1 x 4.4
8	Side-chopper	08.BN1. ĐT:8	Basalt	6.8 x 9.7 x 3.0
9	Side-chopper	08.BN1. ĐT:9	Basalt	6.8 x 10.2 x 5.8
10	Amorphous tool	08.BN1. ĐT:10	Basalt	6.6 x 8.0 x 4.6
11	Semi-pebble tool	08.BN1. ĐT:11	Basalt	18.6 x 9.7 x 2.9
12	Quarter of pebble tool	08.BN1. ĐT:12	Quartz	7.6 x 8.8 x 2.5
13	Flaked tool	08.BN1. ĐT:13	Basalt	6.0 x 5.7 x 1.5
14	Flaked tool	08.BN1. ĐT:14	Basalt	7.2 x 8.3 x 3.2
15	Axe-like tool	08.BN1. ĐT:15	Quartz	13.6 x 6.5 x 2.1

The location is open-air Paleolithic site located on a hill with gentle slope next to Nang stream terrace. The region is favourable to occupation and foraging strategy with subsistent pattern by hunting and gathering, because of availability of water and natural food resources.

Chipped stone tools are domination within the assemblage. The characteristic of technique for stone tool making is rather simple with the percussions on sides or ends of pebbles. Both morphologically and technology of these stone tools are attributed as Late Paleolithic (Son Vi culture). Few flaked tools also found, the appearance of flake splitting technique shows the bias of saving raw material applying to big pebbles. Some stone tool types such as preform-axe and handaxe are well-made by removing almost cortex from both faces probably dated to the Early Neolithic basing on comparative study with other assemblages in the region (Nguyen Gia Doi 2003; Ha Van Tan 1998, Ha Van Tan et al. 1999). In sum, Ban Nang 1 is assigned as such of a typical Son Vi culture site so far firstly known in Western Thanh Hoa province. Thus it is the very important site that must be studied in detail in terms of the settlement and subsistent patterns of the prehistoric inhabitants.

The site is located in the area of water storage of Trung Son Hydro-electric reservoir. In addition, with level of more and less 120m in comparison with sea water level, after Trung Son Hydro-electric Station is completed and put into operation, the site will be located in the depth of about 40m under water surface of hydroelectric reservoir. The site is positioned in residential ground will bring great risk to it due to opening a way to emigrate residents from reservoir zone. In general, it can notice heavy impact of Trung Son Hydro-electric construction on the site, make full change of natural environment of the site distribution, even place the site in the risk of full destruction. Development of studying must be carried out at once before whole the site area is immersed in hydro-electric reservoir zone. This is a practical work to contribute documents to enlighten past original point of the nation and keep cultural heritage of the nation. Proposals and studying directions will be stated more specifically in item 5 of this report.

3.2. Archaeological sites of historical period

Huoi Pa ancient cemetery

A ancient cemetery named Huoi Pa situated in Ta Ban village, Trung Son commune, Quan Hoa district. The site locates on a mountain slope forested by bamboo near a small stream called Huoi Pa. Its coordinate is 20⁰37'514'' north latitude and 104⁰49'780'' east longitude; 131m above sea level.

The way to the site is from the People's Committee Hall of Trung Son commune following the macadam-scattered road, about 5km long, to Ta Ban village and then along a path to such mountain via Ta Lao Dong, Ta Lao Tay villages of Tan Xuan commune, about 3km – near the end of Ta Ban village reach to the site.

The surface of the site is a gentle hill slope and this area has been used to grow bamboo for some recent years. The site area is approximately 1,000m² and in rather well preserved condition. There are many burials having large-sized rocks arranged at the end or/and surrounding of them in order to remark burial's places. The difference is that the burials with a single rock is dominant in quantity.

The consultants have studied some rocks in details. Some pits are test-excavated at the foot of some big rocks to study the initial burial structure. The results show that: the first rock is 173cm long (excluding the part buried underground), 100cm wide, 7cm - 10cm thick; the second rock is 130cm long (excluding the part buried underground), 102cm wide, 7cm - 10cm thick; the third rock is 83cm long (overall length is 130cm), 75cm wide, 9cm thick. The fourth rock is 97cm long above the ground, 78cm wide, 9cm thick; the fifth rock is 55cm long above the ground, 75cm wide, and 6cm - 10cm thick.

The structure of the burials are almost similar with the Muong ethnic group's cemeteries which have been excavated by The Institute of Archaeology at Dong Thech, Hoa Binh and Muong Vang, Son La (Le Dinh Phung et al 1985; Pham Quoc Quan 1994)

Basing on comparative studies, the burials might be dated around seventeenth – eighteenth century

At present, Thai and Muong peoples are co-populating together in the same village, even no much differences of their norms The fact shows that the cultural interaction between them in consideration.

The find of the burials in the Thai settlement area with some traces of Muong burial type is fairly interesting. The research of them will reveal the past distributive picture of the minorities in Western Thanh Hoa, the cultural interaction and integration among them in this region in the past.

It can be noticed that the site is distributed on foot of hydro-electric dam base in reservoir foundation of Trung Son Hydro-electric Project. With the height more than 130m in comparison with sea water level, after store water for reservoir of Trung Son Hydro-electric Plant, the site will be located in the depth of about 30m under reservoir surface. At the same time, water storage will make natural environment of the site distribution fully change. Local residential groups will be emigrated from reservoir zone and so studying to learn about source and cultural interference of ethnic people in this zone in history will be buried eternally with the vestige. Preparation of plan on studying relic before it is deleted is real and useful action. Specific proposals on settling vestige will be mentioned in item 5 of this report.

3.3. Surface collections in the region

3.3.1. Assemblages of archaeological artifacts

Some assemblages of archaeological artifacts are possessed by the local people living in Ta Ban, Tai Chanh, Ban Nang 1, and Ban Lin. According to these people, the artifacts were collected from riversides or rice-fields around the village. For the local people, the items are thought as such of precious and sacred things.

A total of 26 specimens of the assemblages including 5 bronze artifacts, 20 stone artifacts, and 1 bone artifact (Table 7).

Table 7. The assemblages of archaeological artifacts in the region

Location (village)	Assemblage' owner	Stone axe	Stone hoe	Cylindrical shaped artifact	Chipped stone tool	Bone artifact	Bronze axe	Spear head	sum
Ta Ban	Pham Ba Lam	2					1		3
Ban Nang 1	Lo Kham Tu	1					2	1	4
Ban Nang 1	Ngan Thi Thiet	4	1			1	1		7
Ban Nang 1	Dinh Cong Diep	1			1				2
Ban Nang 1	Ngan Van Thu	1							1
Ban Nang 1	Vi Van Tham	3							3
Ban Lin	Dinh Cong Dien	2							2
Ban Tai Chinh	Luong Van Toan	3		1					4

From the information on the discoveries, the consultative team conducted

the survey but no any site with cultural layer found yet. However, these assemblages have been documented and informed in this report (*Drawings 7- 13*).

Bronze artifacts

- Bronze axes: 4 pieces

- The first one with the registered number 08.TB.ST:1, collected from Ta Ban streamside. It has a rather long blade, a socket of oval-shaped cross-section, and its edge is slightly curved. Casting seams are seen on both faces indicate production with a two-piece mold.

- The second one with the registered number 08.TB.ST:2, is collected from Ta Ban streamside. This type has an unsymmetrical blade, a socket of oval-shaped cross-section. Casting seams indicate production with a two-piece mold.

- The third one with the registered number 08.TB.ST:3 is also collected from Ta Ban streamside. This type has a fan-shaped, wide, round blade. The cross-section of the socket is in a hexagonal shape. Casting seams indicate production with two-piece mold.

- The fourth one with the registered number 08.BN1.ST:1, is collected from Nang streamside. It has a fan-shaped, a socket of oval-shaped cross-section. Casting seams are recognized on both faces indicating the use of two-piece mold for production.

- Bronze spearhead

A spearhead with the registered number 08.TB.ST:4, recovered from Ta Ban streamside. It has a hollow longitudinal socket of oval-shaped cross-section, the butt-end of “swallow-tail” shape. Casting seams indicate production with two-piece mold.

Based on comparative studies, these bronze artifacts mentioned above are attributed as the characteristics of Dong Son culture in the Northern mountainous region (Pham Minh Huyen 1996; Ha Van Tan ed. 1999).

Stone artifacts

A total of 20 stone artifacts include 17 pieces of polished axes, 1 piece of hoe, 1 piece of chipped stone tool.

Two types within the polished axes are quadrangular shaped axes and shoulder axes, of which 16 pieces of the shoulder axes and only one of the quadrangular shaped axe.

Shoulder axes:

- Stone adze/axe labelled 08.BN1.ST: 9 is currently kept at Mrs Ngân Thị Thiết's house, Nàng 1 village. The axe is collected in the area of Nang stream. It is intact, smoothly polished by water. The axe is made of fine-grained basalt. It is of two symmetrical shoulders, long body, quasi-rectangular cross section, V-shaped edge angle. The axe is wholly ground. Dimensions: axe length 6,0cm; butt width 1,8cm; butt length 1,8cm; body width 4,1cm; body thickness 1,4cm.

- Stone adze/axe labelled 08.BN1.ST: 10 is currently kept at Mrs Ngân Thị Thiết's house, Nàng 1 village. The axe is collected in the vicinity of Nang stream. It is undamaged. The axe is made of fine-grained basalt covered by a white grey patination. The axe is of two symmetrical shoulders which are shorter than the edge generating a quasi-symmetrical trapezium, rectangular cross section, slightly askew V-shaped edge angle, sharp edge, and some small indents caused by use. The axe is

rather thoroughly ground. Dimensions: axe length 5,1cm; butt width 2,0cm; butt length 1,5cm; shoulder width 4,9cm; edge length 5,5cm; body thickness 1,1cm.

- Stone adze/axe labelled 08.BN1.ST: 11 is currently kept at Mrs Ngân Thị Thiết's house, Nàng 1 village. The axe is collected in the vicinity of Nàng stream. It is in good condition. The axe is made of fine-grained basalte covered by a white grey patination. The axe is of two symmetrical shoulders, rectangular cross section, slightly askew V-shaped edge angle, sharp edge, and some small indents caused by use. The axe is rather thoroughly ground. Dimensions: axe length 5,3cm; butt width 1,6cm; butt length 1,3cm; shoulder width 4,2cm; edge length 4,6cm; body thickness 1,2cm.

- Stone adze/axe labelled 08.BN1.ST: 1 is currently kept at Mr Đinh Công Điện's house, head of Lìn village. The axe is collected on the field in the mountain. It is in good condition. The axe is made of a bit coarse-grained basalte covered by a grey brown patination and some tiny holes. The axe is of two symmetrical shoulders, rectangular cross section, slightly askew V-shaped edge angle, sharp edge, and some small indents caused by use. The axe is wholly ground. Dimensions: axe length 4,2cm; butt width 1,5cm; butt length 1,5cm; body width 4,5cm; body thickness 0,9cm.

- Stone adze/axe labelled 08.BN1.ST: 2 is currently kept at Mr Đinh Công Điện's house, head of Nàng 1 village. The axe is collected on the field in the mountain. It is in good condition. The axe is made of fine-grained basalte covered by a white grey patination. The axe is of two symmetrical shoulders, rectangular cross section, slightly askew V-shaped edge angle, sharp edge, and some small indents caused by use. The axe is rather well wholly ground. Dimensions: axe length 3,6cm; butt width 1,6cm; butt length 1,7cm; body width 4,7cm; body thickness 0,9cm.

Stone quadrangular axes:

- Stone axe labelled 08.TB.ST: 7 is currently kept at Mr Phạm Bá Lâm's house, Ta Bán village. The axe is collected in the area of Quanh stream mouth during his gold mining. It is in good condition. The axe is made of fine-grained basalte covered by a shining black brown thick patination. Its cross section is rectangular. Its edge is of symmetrical and a bit ached V shape, and some small indents due to use. The axe is elaborately ground. Dimensions: axe length 8,6cm; butt width 3,7cm; edge width 4,2cm; body thickness 1,5cm.

* *Flaked tools:* only one artifacts, labelled 08.BN1.ST: 2, made from river/stream sphere-shaped basalte pebble with a black grey outer face caused by fire. The tool is produced by flaking surrounding margins of a pebble, creating a plate-shaped one (called sumatralith in other words), which is very typical of Hoà Bình culture. The tool is made by one-face technique with multi flaking layers and centripetal direction that removes almost all cortex in one face. The continuous big negative scars in association with several small retouched ones generate sharp and steep edge angle. Dimension: 8,0cm long; 6,7cm wide; 2,3cm thick.

* *Stone hoe:* only one artifact, labelled 08.BN1.ST: 12, currently kept at Mrs Ngân Thị Thiết's house, Nàng 1 village. The hoe is collected in the area of Nàng stream. It is horizontally broken, leaving behind the lower part of the body. The hoe is made of fine-grained basalte with a white grey patination. This hoe belongs to a

wide rectangular type with rectangular cross section, V-shaped edge angle and sharp edge. It is fairly thoroughly wholly ground. Dimensions: 9,7cm in remaining length; 7,7cm in body width; 1,3cm in body thickness.

* *A stone round cylinder piece*, labelled 08.TC.ST: 4, is currently kept at Mr Luong Văn Toán's house, Tài Chánh village. The artifact is gathered in the vicinity of Tài Chánh stream. It is still complete. The artifact is made of fine-grained black green sandstone with black outer face. It is of round cylinder with one end which is ground flat and the other is ground into round-pyramid shape, and there is a belt in the middle of the body. It is likely that this is a sacred object. Dimensions: body perimeter 2,5cm; body length 4,2cm.

The group of stone artifacts, especially the two-symmetrical-shoulder axes, bears the characteristics of those stone artifacts found in the pre- protohistoric period in mountainous area of the North, such as Hà Giang culture or the Late Neolithic – Bronze Age stone artifact collections in provinces of Yên Bái, Lào Cai, Điện Biên, Sơn La... [Hà Văn Tấn (chief editor) 1998; Hà Văn Tấn (chief editor) 1999; Hà Văn Tấn, Nguyễn Đình Chiến 1977].

Bone artifact: only 1 specimen, labelled 08.BN1.ST: 13, is currently kept at Mrs Ngân Thị Thiết's house, Nàng 1 village and is found in the area of Nàng stream. It is still complete. The artifact is made of elephant tooth, shinningly polished. It is of rectangular shape, two symmetrical angles at one end and three 0,2cm-perimeter drilled holes at the middle of body that creates an isosceles triangle with 1cm in length for each side. Both horizontal and vertical cross sections of the artifact are rectangular. Dimensions: 4,4cm in length; 3,5cm in body width; 1,3cm in body thickness. It is probable that this is a wearing artifact functioned as a sacred amulet or a decorative object.

3.3.2. Artifact collection in the historical period of time

Like the artifact collection in the pre- protohistoric period of time, the one in historic period is also preserved by several residents in Ta Bán village (see table 8). In this collection, almost all artifacts are Nguyen-dynasty bronze coins discovered by Mr Vi Văn Đội in the process of digging hole in the garden. Mr Đội says, when the bronze coin group was first seen, they were all put in a stoneware pot. We think that this is a sign of hiding properties by a wealthy family in the previous time.

Different from local people's high appreciation toward pre- protohistoric artifact collection, little attention is paid to those artifacts in the historical time period. This is why when the state delegation comes to study the above-mentioned artifacts, the local people are willing to offer them for free.

Table 8: Statistics, classification for historical-time artifacts

Types Collection		Bronze bar	Zinc coins				Total
			Dynastic title Gia Long	Dynastic title Minh Mệnh	Dynastic title Thiệu Trị	Dynastic title Tự Đức	
Ta Bán	Lò Khố	1					1

village	m Tur							
	Vĩ Văn Đội		11	94	2	49	15	131
Total		1	11	94	2	49	15	132

The collection of artifacts includes one bronze bar and one collection of 171 zinc coins.

* The bronze bar labelled 08.TB.ST: 8 is currently kept at Mr Lò Kham Tur's house, Ta Bán village. It is casted into the form of a dug-out canoe being round at two ends. The local people call it “xiển tòng” (bronze bar). According to them, these “xiển tòng” are used to share properties with the deceased. Each “xiển tòng” is tantamount to a silver bar. Dimensions: 10,0cm long; 1,7cm wide; 0,5cm thick.

* A collection of zinc coins comprises 171 specimens. Typologically, the way of casting zinc coins is similar to that for bronze coins, with round outer rim and square hole in the middle. The typological classification result shows that they are Nguyen-time coins under the dynastic titles of Gia Long, Minh Mệnh, Thiệu Trị và Tự Đức.

- The Gia Long-dated coin group (1802 - 1820) includes 11 coins, labelled 08.TB.ST: 9 (1-11). The letter Gia Long thông bảo is casted in the front according to the orientation of upper – lower – right – left; two letters Thất phân is casted in the back. Its perimeter is 2,5cm - 2,7cm; each square hole's side is 0,6cm long. This type of coins is thicker than the other groups.

- The Minh Mệnh-dated coin group (1820 - 1840) includes 94 coins, labelled 08.TB.ST: 10 (12-105). The letter Minh Mệnh thông bảo is casted in the front according to the orientation of upper – lower – right – left; Its perimeter is 2,4cm - 2,5cm; each square hole's side is 0,5cm long.

- The Thiệu Trị-dated coin group (1840 - 1847) includes 2 coins, labelled 08.TB.ST: 11 (106-107). The letter Thiệu Trị thông bảo is casted in the front according to the orientation of upper – lower – right – left; its perimeter is 2,5cm; each square hole's side is 0,5cm long.

- The Tự Đức-dated coin group (1847 - 1882) includes 49 coins, labelled 08.TB.ST: 12 (108-156). The letter Tự Đức thông bảo is casted in the front according to the orientation of upper – lower – right – left; Its perimeter is 2,4cm - 2,5cm; each square hole's side is 0,5cm long.

- The coin group whose the dynastic title is unknown includes 15 coins, labelled 08.TB.ST: 13 (157-171)

The collection shows that the economic – cultural exchanges between this region and the lowland occurred in scale in the history.

3.4. The sacred sites of ethnic group (Khiêng sắn)

Khiêng sắn is the word of Thai people referred to the sacred ritual site of the whole village. Virtually all Thai villages have Khiêng sắn, but only Khiêng sắn of villages named Ta Bán (Trung Sơn commune), Nàng 1 và Tài Chánh (Mug Lý commune) are within the submerged area and need to be investigated and surveyed.

Khiêng sắn of other villages, which do not belong to the submerged area, are out of the work of the consultative group. Generally speaking, Khiêng sắn has a significant meaning within an ethnic community of a particular village. Studying these sites will further clarify the spiritual cultural features of the residents in the area.

3.4.1. Khiêng sắn of Ta Bán village

It lies in one end of Ta Bán village, Trung Sơn commune, Quan Hoá district. The coordinate of the site is at 20⁰37'300" Northern latitude and 104⁰50'237" Eastern longitude. It is 145m above the sea level.

The local inhabitants say that there was a ritual house made of light materials in this area. Today it is an unoccupied land ground used to do annual offerings for peace and rain for village people. The offerings ritual composes of cattle or pig, chicken depending on the prosperity of village people, sticky rice and liquor are also used. The ritual is annually scheduled in the beginning of lunar May.

In two recent years, because of the influence of new cultural lifestyle, people in Ta Bán village have not made khiêng sắn to do offerings ritual any more. The current offerings ritual is organized in the open air on the ground which khiêng sắn was built before. This area is marked by the consultative group as a tangible cultural site of a resident group in the region.

3.4.2. Khiêng sắn of Nàng 1 village

It lies at one end of Nàng 1 village on Mung Lý commune, Mường Lát district. The coordinate of the site is 20⁰32'528" Northern latitude and 104⁰46'104" Eastern longitude. The site's altitude is 126m. Its location is about 300m far from the Paleolithic site of Bản Nàng 1 toward the upper course of Nàng stream.

Khiêng sắn is a house made of light materials such as bamboo and wood, with the inside-house area of about 8m²; the house is square with low wooden floor; outside the house leaves vacant and surrounded by a low roof fence.

The offerings ritual here is held annually on the 20th of lunar June. The offerings must include one pig, one dog, three chicken and three liquor jars. They are shared by the whole village people. The person who leads the ritual is the head of village. Besides, the head of village also has a responsibility for doing monthly ritual.

3.4.3. Khiêng sắn of Tài Chánh village

It is located at one end of Tài Chánh village, Mung Lý commune, Mường Lát district. The coordinate of the site is at 20⁰32'849" Northern latitude and 104⁰47'434" Eastern longitude. The site is 146m above the sea level.

Khiêng sắn has collapsed, but from the remaining materials, its initial shape could be reconstructed. It is a square house made of bamboo, wood and leaves, the inside-house area is about 6m².

The offerings ritual is organized at the end of lunar May each year. The offering include bull or pig, chicken and liquor jars shared by all village people. The ritual leader is the head of village. This area is considered by the consultative group as a tangible cultural site of a resident group in the region.

4. The site group lying outside the submerged area

4.1. Archaeological sites in the pre- protohistoric period of time

The Neolithic site of Cú cave

The site lies within the area of limestone mountain at Lát village, Tam Chung commune, Mường Lát district. The cave is on the halfway of the mountain on the right hand side and about 300m from the Lát stream. Its coordinate is at 20⁰33'531'' Northern latitude and 104⁰36'849'' Eastern longitude. The site is 210m above from the sea level.

The road to the site starts from the centre of Mường Lát town, through the suspension bridge across Mã river (often called the bridge of Lát village or the bridge of Poom Buôi) connecting the Lát village (Tam Chung commune) và the Poom Buôi village (Mường Lát town), down to People's Committee of Tam Chung commune, and keeping going about additional 3km. In front of the site, on the other side of the pathway is the area of Mr Hà Văn's house (a Thái person at Lát village).

The site is a rather large limestone cave at the bottom of Pha Ph mountain range. The cave is fairly dry, airy, and cool, but a bit dark inside due to a large volume of land and rock at the entrance. Outside the cave is a bamboo forest newly planted over the past ten years.

The cave faces east slightly askew southwardly, looking over and about 20m above the Lát stream. At this area, the Lát stream has built up a moderately large valley and comparatively plane, creating a favorable condition for agricultural cultivation.

Legend has it that when this region started being reclaimed, there were a plenty of Cú tree (in Thái language: Cú tree = phonetic symbol: Khú tree = meaning: Sáu tree), a number of sites are also named after that of this tree: Cú field, Cú cave...

The pathway to the cave is steep but relatively easy to climb. The cave entrance is 4m wide; 1,8m high. Looking inside from the entrance, the cave has a key large area and two branches deeply running into the mountain. The right hand branch is labeled cave A; the left hand one labeled cave B.

The key large area of the cave is 22m wide; 8m long; 8m high from the ceiling. The floor is fully covered by soil and stone from outside so that it is unlikely for the archaeological artifacts to be found here.

The entrails of the cave A is deep, big, dry, but dark. Archaeological artifacts are mainly recovered in this area. The cave is 20m deep; 7,5m wide. Its floor contains a large number of collapsed stone blocks lying about in disorder and in the way, and small branches. The consultative group has discovered the vestiges of several burials among these branches. The result from survey shows that the cave contains little vestiges of human inhabitation but a remarkable number of burials.

On the right hand side of the cave A is a small ramification running deeply down below the surface. Its floor is about 6 -8m deep, relatively even and flat, composed of soft yellow brown soil, with an area of 7 x 4m. A quantity of crushed potteries are scattered on the surface and along the way down.

The entrance of the cave B is comparatively narrow but large, dry and airy

inside. The entrails of the cave is greatly dark due to receiving no sunlight. The entrails is 4m in width and runs deeply into the mountain, and is impossible to measure the length. Its floor slopes to the mountain bowels. Here some crushed sherds are also found, but in less quantity than those in the cave A.

The artifacts collected in the cave encompass 64 sherds and 13 mollusc shells. They are classified into 8 rims and 56 bodies. Almost all rim sherds are fine-artistically patterned (6/8 cases). There are only 6 body sherds without patterns, 23 cases decorated with technique patterns and 27 cases with fine-artistical ones. Among those decorated with technique pattern, almost all are cord-marked while only 2 cases are brush-marked. The sherd group shows a high fine art, elaborateness in decoration as well as a sophisticated level of thought. The decorative patterns include: incise decoration in combination with printing technique, pattern of fish bones made by print mould, round motif in association with surrounding dots and yellow earth, Đồng Đậu -type square printing motif, incised impression pattern on cord background, incised impression in combination with wave or parallel lines...

Potteries are of fairly coarse grains, black components, black brown or brown outer surface. Pottery surface is smooth. This sherd group bears the characteristics of Hoa Lộc culture, first discovered at the inshore area of Hậu Lộc (Thanh Hoá) [Quang Văn Cậy, Phạm Văn Kinh 1977; Phùng Huy Cận 1982; Phạm Văn Đâu 1995].

Relative date is about 5000 years BP.

The site is important in that a site belonging to Hoa Lộc culture in the mountain of Western Thanh Hoá is for the first time found. More specially, this site is only 2km from the border between Vietnam and Laos northwardly.

The result of the survey indicates that this is a cave burial site. The cultural stratum has not been found, which is likely to occur at the cave entrance currently being covered by stone and land, or outside the cave. To make it clearer, it is necessary to undertake further research.

The site is located rather far from project zone and on the height of above 50m in comparison of reservoir level. Project construction almost does not exert any impact on the site as well as space, natural environment where the site exists.

4.2. Archaeological relics in the historical period of time

4.2.1. The burial area of Mái đá Nàng Chanh

Mái đá Nàng Chanh is a name of a rockshelter in the area of limestone mountain top and the upper course of Tà Bán stream, Tà Bán village, Trung Sơn commune, Quan Hoá district. The coordinate of the site is at 20°38'468'' Northern latitude and 104°51'588'' Eastern longitude. The altitude is 300m. The rockshelter is moderately large and high but relatively hard to climb because of very steep mountain side.

The survey result indicates that there is a burial site with hollow-chiseled-tree-trunk coffins. The coffins are in broken condition; their fragments are scattered even in the small hollow or dropped down to the bottom of the cliff. We have observed 3 coffin fragments:

The first coffin fragment lies in the small hollow, and its shape is still almost intact due to being absorbed by limestone water, only the ear part of the coffin is

rotten. Dimensions: 2,25m in length, 0,55m in coffin perimeter; 1,95m in length of the inside coffin, 0,4m in the inside length, 0,25m in length of the ear part.

The second coffin fragment lies in the small hollow and has been covered by a thick stalactite. Its location is 0,5m from the first coffin leftwards, almost intact, and only rotten in the ear part of the upper end, 1,41m in length, 0,45m in coffin perimeter, 0,2m in length of the ear part.

The third coffin fragment was dropped down to the bottom of the rockshelter in the erecting position, almost intact, 2,42m in length, 0,48m in coffin perimeter; 1,97m in inside length; 0,4m in inside perimeter. There is a long column next to the coffin, 2m in length; 0,55m in perimeter.

The site belongs to the type of hollow-chiseled-tree-trunk coffins in the cave, often called "huyền quan táng" (suspension burial), hay "nhai động táng" (high and dangerous cave burial) hay "nhai táng ếch" (cliff burial). This site type has also been seen in the caves and rockshelter in Quan Hoá region such as: Hòm cave, Lũng Mu cave, Ko Phây cave, Pha Ké cave... This way of burying has been widely witnessed in some cave in Thailand, Philippines... and particularly in the south of Dương Tử river [Nguyễn Gia Đồi 1998; Bùi Văn Liêm 1998 - 1999].

In the vicinity of the site are currently the villages of Thai and Muong people living alternately. Until now the type of hollow-chiseled-tree-trunk coffins has still been popularly used by the local people. Almost all the households have such coffins placing under the house in case of being died. The coffin has two parts made from a fairly big-dimension tree trunk, about 2m – 2,5m in length and around 0,5m – 0,6m in perimeter. At two ends of the coffins, there are two ears designed to unite two fragments together by rope. It is recognizable that the owner of the above-stated burials has a close relationship with the Thái và Mường ethnic groups in this region.

From a comparison between site types, the date of the burial area can be expected to fall between 10th and 15th century.

The site is located close to high mountainous peak, extremely far from project zone. Survey of the site is carried out when consulting team has just come to Ta Ban village for collecting information and heard about this site so they “take advantage of” survey. Construction of hydro-electric project does not influence on this place.

4.2.2. The burial site of Tiên Tăng

The burial site is located in the area of Chi Nưa village, Mường Lý commune, Mường Lát district. It is on the halfway of the mountain. The coordinate of the site is at 20^o31'512'' Northern latitude and 104^o42'112'' Eastern longitude. It is 183m above the sea level. This site lies outside the submerged region and would not be under the effect of the construction and operation of the hydro-electric power plant.

The burial site is similar to that of Hư Pa, locating on a slightly steep mountain side and looking over the Mã river. In this burial ground, there is a special grave whose structure includes a rectangular erecting long stone column with its back propped up by a smaller stone pillar. There is also a smaller pointed stone pillar, about 0,5m from the front of the column. The stone column is 2m high (from the land surface); 0,4m wide; 0,2m thick. The behind stone pillar is 1m high; 0,3m

wide; 0,2m thick, with a large base and its top propping the back of the high stone column. The stone pillar in front of the grave is 0,6m high; 0,2m wide; 0,1m thick. The lithic material used is sandstone, which can easily be mined in the local area, but to produce such stone pillars, it needs the human hands and labour.

Legend has it that this is a grave of Tiên Tăng (a powerful person, equally the head of village), and the column was built for the deceased by a head of Quan Hoá district

From a comparison between site types, the burial ground could be dated from 16th – 17th century [Vy An 1987; Nguyễn Ngọc Thanh 1989; Phạm Quốc Quân 1988; Phạm Quốc Quân 1994].

4.2.3. A stone piece with letter:

A stone piece with letter lies in the administrative region of Tam Chung commune, Mường Lát district, at 20°31'940'' Northern latitude and 140°40'263'' Eastern longitude. Its altitude is 182m.

The road to the relic starts from People's Committee of Tam Chung commune, along the pathway on the right bank of Mã river to People's Committee of Mường Lý commune, and keeping going to the end of the locality of Tam Chung commune where there is a landmark "border area". The distance of the road is around 10km. It is probable to reach the relic by an upriver trail from the Co Me village (Trung Sơn commune), but it is very hard to go. It is impossible to travel to the relic by river way as the river bed is narrow and there are plenty of waterfalls and rapids.

The relic is made from a mountain rock block with big dimensions of 6m high; over 5m wide and 5m thick, precariously lying on a mountain side on the right bank of Mã river. On the western plane top of the rock, there is a line of Chinese characters deeply carved into the body. As a consequence of the effect of time and weather, the upper characters have been blurred, only the lowermost one is readable (the character VUÔNG)

As no other relating artifact is found, it is greatly difficult to date this relic. However, from the comparison between this one and the ones with similar types such as the ancient rock ground of Sa Pa (Lao Cai), the one ở **Đã** (Hà Giang), the ground with letter-carved rocks of Pá Mang (Sơn La)... [Hà Văn **Đ** (chief editor) 2002], it is inferred that the earliest date of the relic falls in the 17th century.

As compare with the sites outside of reservoir foundation, this site is located closest reservoir zone. The site is located on mountainous side adjacent to bank of Ma River, the height is above 20m in comparison with level of reservoir foundation and it is about 100m high in comparison with existing level of Ma River. Water storage in reservoir make water level in Ma River higher, space of this site distribution is changes in little but it does not make much influence on the site. Especially the site zone is distributed on rather solid foundation of original rock so although it is located on reservoir edge but it excludes possibility of influence on the site due to project construction and operation.

5. Proposing the research orientation toward tangible cultural sites

5.1. Assessments on the working area

The field survey indicates that the working area is full of obstacles and difficult of access, and the traffic is not in favorable condition. The terrain comprises predominantly of very high and steep cliffs down directly to the river bed, which alternate with several moderately plane areas deposited by some big streams flowing to the Mã river such as Quanh stream, Tà Lào stream, Ta Bán stream, Nàng stream, Nún stream (Tài Chánh stream)...(see the headline 2.1). In such planes, the terrains are advantageous to the inhabitation. A majority of residents living here are Thái people, including a small number of Mường and Mông ones who follow Thái customs. The tangible cultural sites and/or the archaeological relics and artifacts are primarily discovered in these localities that are within the submerged area of the project.

The localities which associate directly with the construction of the project, for example, the one surrounding the dam base, the camp sites (belonging to the Co Me village), the mining site (pertaining to the Mau and Kít villages), the site for gathering constructive materials, the road to the construction site, the resettlement area... have not unveiled any tangible cultural or archaeological vestiges. As such, the construction at the dam base area as well as leveling the ground for the resettlement, opening road to the construction site, exploiting and gathering constructive materials will face no difficulties stemmed from the tangible cultural materials. It would be likely that the construction would unearth some archaeological artifacts, but it is possible to handle them without influencing the on-going construction.

The investigation process has resulted in 11 places with tangible cultural vestiges, of which there are 6 archaeological sites, 2 archaeological collections of artifacts, and 3 sacred cultural vestiges of the ethnic groups. In fact, two artifact collections are not viewed as sites with tangible culture vestiges because no original place where they come from has been found. It is better to say that those are feasible signs identified during the survey process and become a foundation for the subsequent research orientation toward the time period of pre- and protohistory in this land.

It needs to further say that on the fieldwork, the consultative group has been informed by local people of a significant amount of information about such tangible cultural sites as the caves with wooden-coffin graves, cemeteries, sacred lands... which are situated on the high mountain top, or in the villages which do not belong to the working area, creating the potential that additional sites could be discovered in the Western Thanh Hoá.

The groups of archaeological vestiges and artifacts collected from the survey indicate that the working area and the Western Thanh Hoá region in a larger scale have witnessed the signs of human inhabitation at the dawn of history that keeps moving on until today.

5.2. Proposing the research directions on tangible cultural sites in the working area

5.2.1. Archaeological sites

5.2.1.1. The Paleolithic site of Nàng 1 village

This site plays a special important role in the study of the pre- and protohistoric period in the Western Thanh Hoá. This is a unique Paleolithic site found in the region of Quan Hoá, Mường Lát so far. The site belongs to the type of hill and mound sites of mountainous Sơn Vi culture, bearing the common features of Paleolithic site group discovered in Sơn La, Lai Châu, Điện Biên... [Nguyễn Khắc Sửu, Võ Quý, Nguyễn Thị Lan 2003; Nguyễn Khắc Sửu (editor) 2007]. The finding of this site significantly clarifies the spatial distribution of the prehistoric resident groups in the Northwest. However, to come to more exactly scientific conclusions, it needs to make projects and plans for further researches. Such scientific questions posed as the similarity and difference of the sites with those in the Northwest; the ways of development; the manufacturing and economic activities; environment and living space of local residents... can only be addressed through the excavation and research on all sites. The excavation results would potentially provide helpful information for the archaeologists, historians, paleoenvironmentalists... to outline the overall picture and cultural space of the first inhabitants on this land. The artifact groups in great quantity, types, and materials... would assist to study economic activities at the dawn and the cognitive level of prehistoric people through the technology of tool production... The pollen and spore samples collected would help us sketch out the paleoenvironmental space. Occasionally, the rare paleoanthropological findings would play a particular important role in the study of the ethnic race in the area.

The research and excavation on these sites are imperative for some reasons:

- From the professional view, as the site is located in the centre of Nặng 1 village, it has seriously been influenced by the daily living activities of local people. The process of leveling the ground to build houses, digging ponds, making roads... have destroyed a part of the site, unveiling artifacts lying about in disorder and in the way and in the vicinity of the site. If the research and excavation are not undertaken and the site file as a foundation for the local authority and related institutions to make a protection plan is not made, the site would be soon completely destroyed.

- From the purpose of the fieldwork, if no research plan is made or the research is slowly implemented for those sites lying within the submerged area of Trung Sơn hydro-electric power plant, the closing time for water storage for the dam would be badly violated, certainly affecting the deadline and operation of the plant.

In this situation, the best solution at the moment is to do excavation and move all the remaining of the site out of the affected area. The site excavation and movement are in line with the clauses of Law of Cultural Heritage for the purpose of freeing the submerged area, collecting the relics, artifacts to serve the long-term research. The jobs also contribute to the implementation of the guideline “industrializing, modernizing” the country while still preserving and promoting the national cultural traditions and values.

The distributive area of the site is 1000m². Of which the feasible area for excavation is about 500m².

5.2.1.2. The burial area of Huổi Pa

The burial area plays a significant role in the study of history and ethnic race in the Western Thanh Hoá. The site is dated to the 16th – 17th century, lying within the cultural space and activities of Thái people but bearing a few elements of Mường burial area. The primary working area is in the cultural space of Thái people alternating with small groups of Mường ones. At present, the process of living together has strongly been occurring between two residents of Thái and Mường. The process of “Thaize” (Thái hoá) towards the other resident groups is a main tendency in term of culture (the process of Kinhize (Kinh hoá) is not mentioned here because of the state policy towards social economic development for ethnic minorities in the remote area)

The problems to be addressed after the survey are: the process of occupying and mastering living space of ethnic groups; the process of living together between different ethnic communities; the problem of the owner of the burial ground; belief, spirit and funeral customs expressed through the burying way... From the gathered materials compared to those burial grounds previously studied and excavated, it would be better to understand the spiritual life and cultural features of the past resident groups in the Northwest. Once the above problems are addressed, it would further create a more sound foundation for making policies to encourage economic, cultural, and social development for the working area specifically and for the Western Thanh Hóa generally.

As such, the excavation on the burial area is feasible and would result in plenty of helpful information. Furthermore, the site would potentially provide us with more exactly information about the problems posed.

Like the Paleolithic site of Nàng 1 village, the burial area of Huổi Pa also lies in the submerged region of the Trung Sơn hydro-electric power plant, it is imperative to excavate and move all the sites out of the submerged region, and collect relics and artifacts to serve the long-term research. In the next few years, after water is stored for the operation of the hydro-electric power plant, these sites would be permanently buried and impossible to do research any more.

The total site area for excavation and research is 1000m².

5.2.2. Artifact group collected from the fieldwork

The consultative group has collected and undertaken research on artifact collections belonging to differential localities: the artifact collection in the pre- protohistoric and historic periods of time kept at households in the working area; the one from the Paleolithic site of Nàng 1 village; the one from the site of Cú cave.

The ownership of artifact collection in the pre- protohistoric and historic periods kept by local people has been recognized by the state. With this artifact group, the announcement of information and addresses where the artifacts are preserved is necessary. It facilitates the institutions doing research and collection, researchers and those who are interested in the artifacts to have an easy access to them.

The artifact group gathered from the survey, together with consensus from the Board of Project Management of Trung Sơn hydro-electricity, will be handed over to the organ of local culture management according to the Law of Culture Heritage in order to protect, display, and bring into play the national cultural

heritage. As the above artifacts are found on the land of Thanh Hóa province, they will be kept and preserved at the museum of Thanh Hóa province.

5.2.3. The sacred areas of ethnic groups

Khiêng sắn are holy to villagers, closely associating with spiritual values of an ethnic community. After moving out of the village, Khiêng itself has no value of function and loses its holiness. Having arrived at a new village, a new Khiêng sắn is built up to serve the offerings ritual for the community.

In the working area, the consultative group proposes that the Board of Project Management of Trung Sơn hydro-electricity should prepare an offerings ritual prior to moving the villages out of the submerged area to the new resettlement one. This behavior will have an advantage of stabilizing the resident community spiritually, helping them to settle down in new inhabitation.

The specific tasks and the expenditure for residential displacement will be under the responsibility of the Management Board of Trung Sơn hydro-electric project and be included in the expenditure of residential displacement and resettlement. This is because the process of residential displacement and resettlement in each village will associate with doing the rituals before the village moves to another place.

5.3. Proposing research directions on tangible cultural sites lying out of the working area

Although the Nàng Chanh site, the burial area of Tiên Tảng and the stone piece carved with letters in Tam Chung are not in the same type, belonging to various historical periods of time, they share a common characteristic of representing differential historical periods in the Western Thanh Hóa. The survey has initially provided feasible information about the good condition of the relics. The research implementation in the next steps will promisingly provide a lot of additional helpful information about history and culture of the ancient residents living on this land.

At present, keeping the relics in good shape is on the top priority and is fundamental to deploy the research work in the subsequent stages. This task necessitates close coordination between the research institutions and the culture management ones and local authority. Of which, publishing the survey results is a basis for the consultative group – as a professional institution, and the local culture management organ, to make an official document to require the local authority to have solutions to the relics protection. Of course, the publication must need the agreement from the Board of Project Management of Trung Sơn hydro-electricity

In reality, after the meeting in October 2, 2008 between the consultative group and the Management Board of Trung Sơn hydro-electric project and World Bank representative, and under the agreement of the Management Board of Trung Sơn hydro-electric project, the Institute of Archaeology as a research institution has reported some of the initial research results from such sites as Hang Cú, Nàng Chanh rockshelter, the burial area of Tiên Tảng and the letter-carved rock in Tam Chung to such cultural management organs as Department of Culture, Sports and Tourism of Thanh Hóa, the museum of Thanh Hóa, Relic Management Board of

Thanh Hóa, People's Committee of Quan Hóa district, People's Committee of Mường Lát district and People's Committees of Trung Sơn, Mường Lý and Tam Chung communes – where own the relics. The survey results are foundation for the research institutions and Department of Culture, Sports and Tourism of Thanh Hóa in coordination with People's Committee of Mường Lát district implement the solutions to relic protection.

At the same time, those sites, which are located out of the reservoir territory and unaffected by the construction implementation and the operation of Trung Sơn hydro-electric power plant, also need to be protected and proposed for recognition under the Law of Culture Heritage. The fully-authorized organs to fulfill such subsequent tasks are Department of Culture, Sports and Tourism of Thanh Hóa and Relic Management Board of Thanh Hóa.

6. Problems emerged when deploying research on the relics in the working area

6.1. Determining sites to be excavated and moved

The survey result has indicated that the Paleolithic sites of Nàng 1 village and the burial area of Hối Pa are two valuable archaeological representatives of two historic periods of time in the working area and in the Western Thanh Hóa. Working out a plan and undertaking research and excavation designed to collect the relics, artifacts and to contribute to the protection and promotion of the traditional cultural values are pressing and urgent tasks that need to be tackled as soon as possible.

Bản Nàng 1 site is situated in the centre of Nàng 1 village, Mường Lý commune, Mường Lát district, Thanh Hoá province. The coordinate is at 20⁰32'433'' Northern latitude and 104⁰46'078'' Eastern longitude. Its altitude is 119.4m.

Hối Pa burial area lies next to the stream of Pa, Tà Bán village, Trung Sơn commune, Quan Hoá district. It is at 20⁰37'514'' Northern latitude and 104⁰49'780'' Eastern longitude. The site's altitude is 131m.

6.2. The matter of investor for excavation and research

It is greatly important to ascertain which institution or organization is the investor, and from where finance source for carrying out the tasks comes. As for the archaeological excavation and research, determining the investor means specifying the study purpose of the mission.

The archaeological excavation encompasses two major types:

- The excavation for studying and addressing some specific scientific problems or clarifying the role, position and scale of a historic – cultural site. The result gained from the mission implementation is a foundation for the cultural management organs to do such tasks as the site promotion for recognition, the relic restoration, and site protection... The financial source for the missions will come from that of the cultural management organs or the research institutions in the field of culture.

- The excavation and movement of sites and artifacts are designed to free the involved area for the project serving economic – cultural – social development of

the country, and to contribute to sites and relics preservation for the cultural study in the subsequent stages. The expenditure for the tasks is taken from that of freeing the involved area of the project where the relics are found. The cost for excavation and movement of the Paleolithic site of Nàng 1 village and the burial area of Hủi Pa out of the area of Trung Sơn hydro-electricity project belong to this type.

As such, the expenditure for conducting excavations and research on two sites of Nàng 1 village and the burial area of Hủi Pa will be paid by the Management Board of Trung Sơn hydro-electric project.

6.3. Legal procedures

According to the Law of Cultural Heritage, all activities of archaeological survey, test dig, and excavation undertaken must be agreed and permitted (through documents) by Ministry of Culture, Sport and Tourism. Apart from that, the contact and coordination with the local organs (such as Department of Culture, Sport and Tourism, the provincial museum, the district Chamber of Culture, the district People's Committee, the commune People's Committee...) are a must for the job implementation.

According to regulations, the institutions proposing the study or the treatment of the site must be those owning research functions and specializing in the field of culture. In this circumstance, the research institution will be nominated by the Board of project management of Trung Sơn hydro-electricity

6.4. Protection and preservation of sites and artifacts

This job necessitates the combination of a number of organs: the organ of investor, the organ of cultural management, local authorities at various levels... The foundation for the task implementation is the Law of Construction, the Law of Cultural Heritage and the investigation result of tangible culture in the working area.

- Protection of sites and artifacts prior to excavation:

As for sites, right after finishing the report and getting feedback from the Board of project management of Trung Sơn hydro-electricity, the consultative group will release document reporting on the site survey result and deliver it to the local organs of cultural management that own the sites (Thanh Hóa Department of Culture, Sport and Tourism, Board of relic management). This is a basis for the local organs of cultural management to carry out the plan of relic protection according to the law. In fact, by sending specialized staff to join the consultative group, the local organs of cultural management have had some initial information and taken several specific actions. The matter of keeping the sites intact have already discussed in several meetings between the local leaders and the representatives of organs of cultural management and the consultative group.

The consultative group proposes that archaeological sites examined only lie in the submerged area of the lake bed of the project, not belonging to the area directly involving the execution of project. Nevertheless, in the case that the Board of project management of Trung Sơn hydro-electricity expands the construction to the area where contains the sites, it should make a plan to excavate and move them out of the area prior to carrying out the job.

After the course of work is completed, the artifact group gathered from the survey will be handed over to the museum of Thanh Hóa for storage and preservation as having mentioned at headline 5.2.2.

- The protection of sites and artifacts during and after excavation:

During the process of excavation, the institution or organization assigned by the Board of project management of Trung Sơn hydro-electricity must be responsible for preserving and storing all the relics and artifacts gathered.

Having completed excavation and research and received the feedback from the Board of project management of Trung Sơn hydro-electricity, the relics and artifacts must be handed over to the provincial museum (Thanh Hóa) as the law regulates.

6.5. Excavation and movement of the sites

The sequence of excavation and movement of the sites is expected as follows:

- Making a detailed plan about excavation and treatment of the sites (including excavation plan and detailed financial estimate) to be submitted and approved by the organ of investor.

- Applying for an authorization for excavation from Ministry of Culture – Sport and Tourism.

- Preparing for excavation: seeking labour for the job; purchasing a variety of tools, and instruments for the fieldwork; preparing the camp for staff and labour; preparing a temporary store for on-site relics and artifacts preservation; preparing means of transport and carrying...

- Doing excavation at each site.

- The work to be done after excavation: studying sites and artifacts gathered and handing them over to the provincial museum for storage and preservation.

- Organizing the conference reporting the work result.

- Completing excavation report

Because the site of Nặng 1 village is situated in the current residential area, some problems will emerge from the implementation of excavation and movement:

- If the excavation is launched before the residents move out of the project area, a large amount of money for freeing and compensating the land for excavation would have to be taken into account.

- If the excavation is launched after the residents have already moved by which could minimize the money used to free and compensate the land, a number of other problems emerged must be taken into account such as: recruiting outside labour, expense for going to the site, building on-site camp, and food, electricity and water supply...

The coordination between the excavation and movement of sites and the implementation of the hydro-electric project has to be taken into consideration as well. While the site excavation does not substantially affect the construction area, but if it is delayed, it would influence the accumulation of water, thereby probably prolonging the scheduled time for the plant operation.

The task implementation is expected to take about 5 months. Of which, the duration for excavation on the field is expectedly about 4 months and the time spent

on artifact classification after excavation is 1 month. The work should be carried out from August to the end of the year. During these months, although the weather is rather harsh in the working area, the work is not affected by the big showers, ensuring the excavation to take place as scheduled. Based on the rate of progress of the hydro-electric project implementation, it is indicated that the most appropriate time for excavation is on the dry season in 2009.

6.6. Consultant Team staff

No	Name and surname	Time of working (year)	Task
1	Dr. Tong Trung Tin	30	Chairman
2	Dr. Ha Van Phung	36	Specialist
3	Dr. Tran Quy Thinh	25	General secretary
4	Dr. Nguyen Lan Cuong	35	Specialist
5	M.A. Nguyen Thi Mai Huong	10	Specialist
6	Mr. Ha Manh Thang	8	Technician
7	Mr. Nguyen Ngoc Quy	5	Researcher
8	Ms. Hoang Thuy Quynh	5	Researcher

6.7. Time estimate for implementation: from August to December 2009

Table of Progress Rate for Specialized Personnel

Name	Position	Deadline for Report/Activities Submission	Months (Graph Demonstration)												Number of Months
			1	2	3	4	5	6	7	8	9	10	11	12	
Tong Trung Tin	Chairman														5
Ha Van Phung	Specialist														5
Tran Quy Thinh	General secretary														5
Nguyen Lan Cuong	Specialist														5
Ha Manh Thang	Technician														5
Nguyen Thi Mai Huong	Researcher														5
Nguyen Ngoc Quy	Researcher														5
Hoang Thuy Quynh	Researcher														5

Full-time: 5 months Part-time: _____
 Deadline for report submission: 12/2009
 Duration: 5 months  Time for implementation
 Signature: (authorized representative)
 Full name: _____
 Title: _____
 Address: _____

Rate of Progress for Tasks

A. Research and Excavation Items

	<i>[The first, second months...since jobs are started to do]</i>											
Activity (tasks)	The first	The second	The third	The fourth	The fifth	The sixth	The seventh	The eighth	The ninth	The tenth	The eleventh	The twelfth
Excavation at the site of Nàng 1 village												
Excavation at the burial area of Huôi Pa												
Classification												
Report writing												

B. Report accomplishment and submission

Report	Date
1. Initial report	Mid December 2009
2. Temporary report of progress rate (a) The first report of status (b) The second report of status	- Report on excavation process, the end of August 2009 - Report on excavation process, the end of September 2009 - Report on excavation process, the end of October 2009 - Report on excavation process, the end of November 2009
3. Draft report	After completing excavation and artifact classification (Mid-December 2009)
4. The final report	After consulting the Management Board of Trung Son Project (The end of December 2009)

6.8. The matter of expenditure

The expenses for this project include: excavating and shifting fees (fees to pay experts, fee for workers, equipment, delivery and travelling fees, accommodation...); Researching fees (fees paid expert to research the artifacts, producing reports, fees paid workers to treat the artifacts...); publishing fees and contingent expenses for opportunities which occur during the excavation process. Details for these expenses will be display in detail in the table of budget below:

Base on the jobs requirement and job scale, consultant group estimate the total expense will fall in between 4.5 billion VND, which include all expenses that may occur as well as taxes (see table 9)

Table 9. Estimative expense during the excavation

Order No.	Items	Units	Money
1	Propagation and education fees teaching workers about basic tangible culture resources before the excavation		150,000,000
2	Tasks prepared prior to excavation		55,240,000
3	Expenditure for on-site excavation (120 days)		1,140,320,000
4	Expenditure for setting up scientific files of archaeological sites and artifacts		335,000,000
5	Expenditure for travel and transport		323,000,000
6	Expenditure for storehouses, camps		120,000,000
7	Tools, materials, stationery for excavation		90,150,000
8	Expenditure for classification in Thanh Hoá (30 days)		288,480,000
9	Excavation report		142,660,000
10	Publishing excavation results serving educational propaganda	estimate	250,000,000
11	Standby expenditure for the treatment of random findings during task performance	estimate	1,200,000,000
12	Sum		4,094,850,000
13	VAT(10%)		409,485,000
	Total		4,504,335,000
<i>(Four billion five hundred four thousands and three hundred thirty five thousand VND)</i>			

Table 10. Excavation plan for the sites in the working area

Order No.	Items	Units	Quantity	Unit Price	Money	Notes
1	Propagation and education fees teaching workers about basic tangible culture resources before the excavation				150,000,000	
2	Tasks prepared prior to excavation				55,240,000	
2.1	Purchasing topographical map of project area	sheet	5	100,000	500,000	Reality
2.2	Purchasing satellite photographs of excavation area (2 sites x 5 photos/1 site)	sheet	10	500,000	5,000,000	Reality
2.3	Making detailed outline and work progress rate	outline	2	1,500,000	3,000,000	44/2007/TTLT/BTC-BKHCN
2.4	Making fieldwork plan				39,360,000	QĐ 61/2006/QĐ-BTC
	Professor, Associate.Dr; Project leader (4 people/10 days)	per diem	40	738,000	29,520,000	as above
	Other specialists: Masters, Bachelors (4 people/310 days)	per diem	40	246,000	9,840,000	as above
2.5	Applying for an excavation authorization	per diem	10	738,000	7,380,000	as above
3	Expenditure for on-site excavation (120 days)				1,140,320,000	
3.1	Archaeological experts working on-site				654,720,000	QĐ 61/2006/QĐ-BTC
	Professor, Associate.Dr; Project leader (4 people x 120 days)	per diem	480	738,000	354,240,000	as above
	Other specialists: Masters, Bachelors (4 people x 120 days)	per diem	480	246,000	118,080,000	as above
	Expense	night	960	120,000	115,200,000	23/2007/TT-BTC
	Stay	day	960	70,000	67,200,000	as above
3.2	Payment for local cultural staffs				211,200,000	23/2007/TT-BTC
	Payment for 4 officials of Department for Culture, Sport and Tourism of Thanh Hoá (2 people per site)	per diem	480	200,000	96,000,000	QĐ 61/2006/QĐ-BTC
	Expense	night	480	120,000	57,600,000	23/2007/TT-BTC
	Stay	day	480	70,000	33,600,000	as above
	Payment for 2 cultural staffs at communes where contain sites (1 person per site)	per diem	240	100,000	24,000,000	as above

Order No.	Items	Units	Quantity	Unit Price	Money	Notes
3.3	Payment for excavation workers : 200 per diem x 120 days (100 per diem/day per site)	per diem	2,400	70,000	168,000,000	as above
3.4	Payment for 4 on-site watchmen (2 people per site)	night	240	70,000	16,800,000	as above
3.5	Expenditure for hiring diesel engine	month	4	6,000,000	24,000,000	as above
3.6	Expenditure for site clean x 4 people	per diem	480	70,000	33,600,000	as above
3.7	Expenditure for information and communication	month	4	8,000,000	32,000,000	Reality
4	Expenditure for setting up scientific files of archaeological sites and artifacts				335,000,000	
4.1	Photo albums	photo	3,000	15,000	45,000,000	104/2007/TTLT/BTC-BVHTTDL
4.2	Notes of artifact registration	sheet	3,000	15,000	45,000,000	as above
4.3	Measuring and drawing sites and artifacts	sheet	2,000	30,000	60,000,000	as above
4.4	A4 papers for recording decorative patterns	sheet	500	50,000	25,000,000	as above
4.5	Analyzing samples by natural scientific methods				110,000,000	
	Analyzing pollen samples	sample	20	2,000,000	40,000,000	Reality
	Lithological analyses	sample	10	2,000,000	20,000,000	as above
	C14 date determination	sample	20	2,500,000	50,000,000	as above
4.6	Treating human remains	TT			50,000,000	
5	Expenditure for travel and transport				323,000,000	
5.1	Hiring means of transports for specialists from Hà Nội to Mai Châu and vice versa	vehicle	2	3,000,000	6,000,000	
5.2	Hiring means of transports to travel between 2 sites x 2 transports x 120 days	vehicle	240	1,000,000	240,000,000	as above
5.3	Hiring means of transport for conveying sites and artifacts to the museum of Thanh Hoá	vehicle	10	2,000,000	20,000,000	as above
5.4	Expenditure for loading and unloading sites and artifacts from transports	per diem	100	70,000	7,000,000	as above
5.5	Other means of transports	TT			50,000,000	as above
6	Expenditure for storehouses, camps				120,000,000	Reality
6.1	Building storehouses, camps at the site of Nàng 1 village				60,000,000	as above

Order No.	Items	Units	Quantity	Unit Price	Money	Notes
	Building storehouses for relics and artifacts	temporary	1	30,000,000	30,000,000	as above
	Building camps for specialists	temporary	1	30,000,000	30,000,000	as above
6.2	Building storehouses, camps at the site of Huổi Pa				60,000,000	as above
	Building storehouses for relics and artifacts	temporary	1	30,000,000	30,000,000	as above
	Building camps for specialists	temporary	1	30,000,000	30,000,000	
7	Tools, materials, stationery for excavation				90,150,000	
7.1	Excavation tools				25,500,000	as above
	Specialized hoes	specimen	100	30,000	3,000,000	as above
	Specialized shovels	specimen	100	30,000	3,000,000	as above
	Specialized trowels	specimen	100	30,000	3,000,000	as above
	Bamboo baskets for excavated land removal x 2 sites	specimen	1,000	15,000	15,000,000	
	Bamboo baskets for containing excavated artifacts	specimen	100	15,000	1,500,000	
7.2	Stationery				23,450,000	
	50m - tape measures	specimen	2	100,000	200,000	as above
	Specialized compasses	specimen	2	200,000	400,000	as above
	Plastic bags for containing artifacts and samples	kg	15	80,000	1,200,000	
	Squared papers for relics, artifacts drawing	roll	30	50,000	1,500,000	as above
	Glazed papers for relics, artifacts drawing	volume	10	150,000	1,500,000	as above
	A4-sized papers for printing artifacts and making notes of artifact registration...	volume	15	90,000	1,350,000	as above
	Technical pens for drawing	volume	1	1,500,000	1,500,000	as above
	Oil-covered pens for numbering artifacts	specimen	50	12,000	600,000	as above
	Glues 502 for refitting artifacts	glue	100	8,000	800,000	as above
	Covers for photo and drawing albums	sheet	10	20,000	200,000	as above
	Papers for sticking photos and drawings	sheet	2,000	2,000	4,000,000	
	Blank CDs for storing data	specimen	20	10,000	200,000	
	Stationery	TT			10,000,000	

Order No.	Items	Units	Quantity	Unit Price	Money	Notes
7.3	Machines for works				41,200,000	as above
	Computer	set	1	15,000,000	15,000,000	as above
	Scanner	specimen	1	7,900,000	7,900,000	as above
	Printer	specimen	1	8,300,000	8,300,000	as above
	Intrument for measuring coordinate JPG	specimen	2	5,000,000	10,000,000	
8	Expenditure for classification in Thanh Hoá (30 days)				288,480,000	
8.1	Archaeological specialists classify artifacts				163,680,000	QĐ 61/2006/QĐ-BTC
	Professor, Associate.Dr; Project leader (4 people x 30 days)	per diem	120	738,000	88,560,000	as above
	Other specialists: Masters, Bachelors (4 people x 30 days)	per diem	120	246,000	29,520,000	as above
	Expense	night	240	120,000	28,800,000	23/2007/TT-BTC
	Stay	day	240	70,000	16,800,000	as above
8.2	Expenditure for local cultural staffs				11,400,000	23/2007/TT-BTC
	Payment for 2 staffs of Thanh Hoa museum for participating classification	per diem	60	120,000	7,200,000	as above
	Stay	day	60	70,000	4,200,000	as above
8.3	Payment for workers' classification : 50 per diem x 30 days	per diem	1,500	70,000	105,000,000	as above
8.4	Payment for 2 watchmen at night	night	60	70,000	4,200,000	as above
8.5	Expenditure for cleaning classification area x 2 people	per diem	60	70,000	4,200,000	as above
9	Excavation report				142,660,000	
9.1	Writing detailed and overview reports on sites				96,000,000	
	Writing reports on excavation pits of Nàng 1 village site x 5 pits	report	5	4,000,000	20,000,000	44/2007/TTLT/BTC-BKHCHN
	Writing reports on excavation pits of Huồi Pa sites x 10 pits	report	10	4,000,000	40,000,000	as above
	Writing an overview report on the site of Nàng 1 village	report	1	12,000,000	12,000,000	as above
	Writing an overview report on the site of Huồi Pa	report	1	12,000,000	12,000,000	as above
	Writing an overview report	report	1	12,000,000	12,000,000	as above
9.2	Tasks on revising and completing reports				37,410,000	
	Translating reports into English	page	300	50,000	15,000,000	QĐ 61/2006/QĐ-BTC

Order No.	Items	Units	Quantity	Unit Price	Money	Notes
	Printing and binding materials (The first time)	volume	15	80,000	1,200,000	as above
	Colour printing the maps and outlines A3 (10 sheets x 15 sets)	sheet	150	10,000	1,500,000	as above
	Colour printing the maps and outlines A0 (5 sheets x 15 sets)	sheet	75	50,000	3,750,000	as above
	Revising, printing, and binding materials after examination (The second time)	volume	15	80,000	1,200,000	as above
	Revising and supplementing reports following opinions and suggestions of examiners	per diem	20	738,000	14,760,000	QĐ 61/2006/QĐ-BTC
9.3	Scientific conference, excavation result report, project check before acceptance				9,250,000	QĐ 61/2006/QĐ-BTC
	Scientific seminar: 1 day x 10 papers	paper	10	500,000	5,000,000	45/2001/TTLT/BTC-BKHCNMT
	Supportive expenditure for eating at conference x 50 people	person	50	57,000	2,850,000	23/2007/TT-BTC
	Council for project check before acceptance	council	1	1,400,000	1,400,000	45/2001/TTLT/BTC-BKHCNMT
10	Publishing excavation results serving educational propaganda	estimate			250,000,000	
11	Standby expenditure for the treatment of random findings during task performance	estimate			1,200,000,000	
11	Sum				4,094,850,000	
12	VAT(10%)				409,485,000	
13	Total				4,504,335,000	
<i>(Four billion five hundred four thousands and three hundred thirty five thousand VND)</i>						

6.9. Settlement process for the discovered objects

In case of a site or an artifact emerged during project implementation, the contractor must immediately stop their job and report it to the cultural organ for a solution. This has been regulated in the Law of Culture Heritage and guided in detail in the table of random discovery process that is made by the consultative group.

The tasks will be carried out as follow.

The management Board of Hydro – Electric Project form a group of “tangible culture resources” consultants in order to act immediately when news and information about artifact emerged appeared. Members may include: Representatives from the management Board of Hydro – Electric Project, Institute of archeology, the Ministry of Culture, Sports and Tourism of Thanh Hoa. Fees for the Consultant group will be taken from the “remove tangible culture resources’ fund. It is most convenient to form the group of consultant based on the existed excavation group from the Institute of Archeology.

The group of consultant will arrange meetings with workers and other staffs who are involved directly to the project in order to help them how to realized if it’s an artifact and at the same time provide them the full contact point, address when needed.

Settlement of the emerged artifacts

When the artifacts are discovered, workers must notify: project owner (contractor), then the contractor will be responsible for reporting to the Management board.

When receiving the report from worker, the contractor must localize that artifact and report to the Management board.

The management board is then responsible for notifying the consultant group on material culture or The Ministry of Culture, Sports and Tourism of Thanh Hoa.

Handling emerged artifacts

Within 48 hours, professional officials will come to the scene to settle the discovered artifact. His jobs include:

- Describe the artifact, object
- Anticipate the scale of artifact/object
- Put forth a plan to temporarily settle, protect and settle the discovered artifact.

In case the emerged artifact is not significant

If the discovered artifact is only single artifact, it will be studied and taken away immediately, the contractor can continue their job, no need to stop the work site.

In case the emerged artifact is significant

If the discovered object is an artifact, base on the scale and nature of that artifact, experts will settle a period of time to sort out.

- _ Small scale (<50m²) will need 15 days for settlement
- _ Large scale (>50m²) will need more than 15 days for settlement
- _ Settlement steps include: excavate, research and remove

Expenses for this settlement are included in the provision expenditure for the research of material culture provided by the Management Board. These expenses do

not cover damages caused by suspending the project which may occur to the contractor.

In order to ensure that the project's rate of progress will be as scheduled, during the settlement of artifact period, the construction can still be executed in other areas.

These anticipated situations will be informed to the contractor by the Management board before implementing the project. It will be best if it were a clause in the contract.

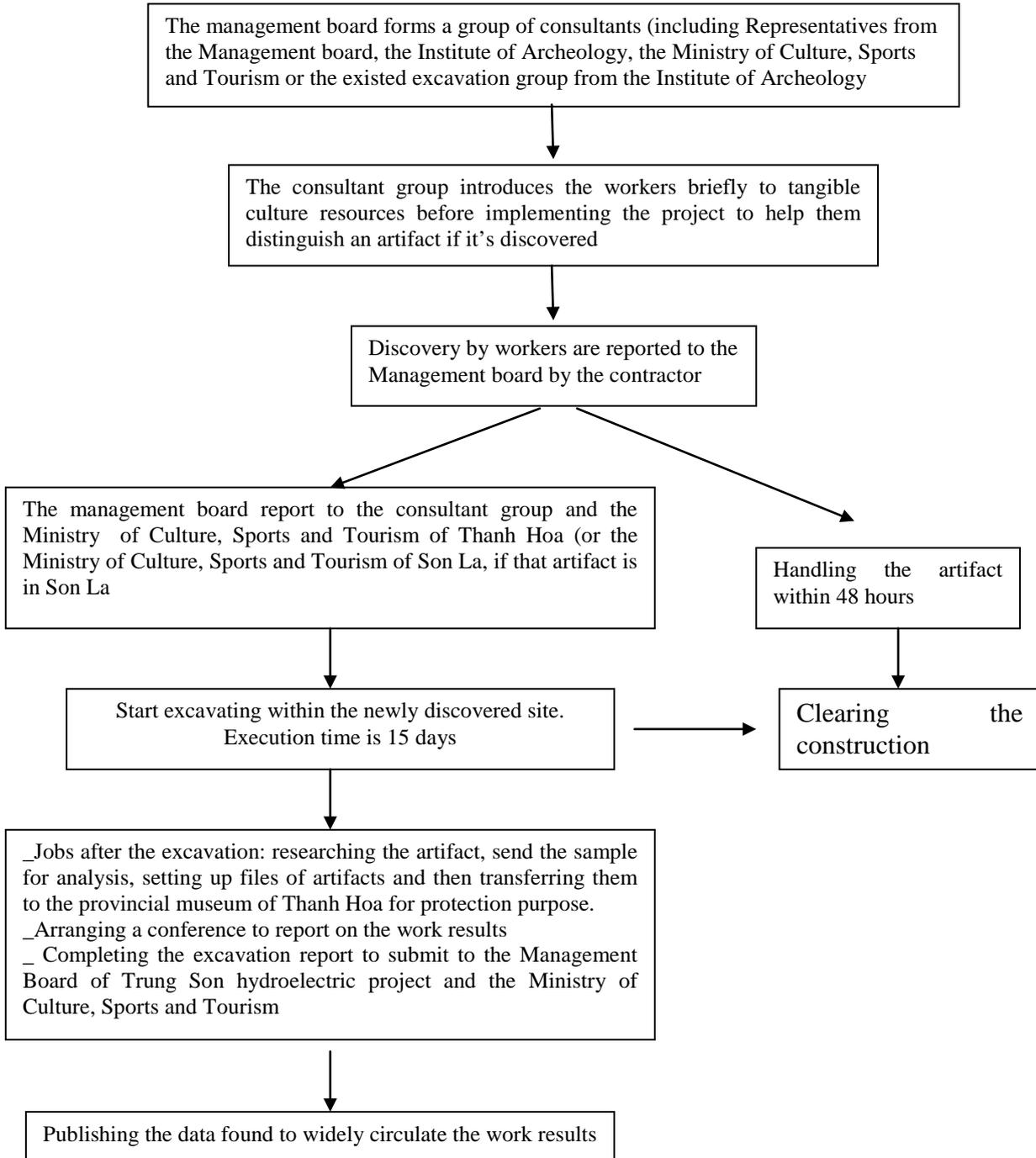
Regarding compensation for damage cause by suspending the project, the Management board will work together with the contractor.

Report on handling discovered artifacts

The report must note:

- _ Date and time the artifact is discovered
- _ Location of the artifact, describing the emerged artifact and the meaning of the emerged artifact
- _ Scale of the emerged artifact and methods to handle it
- _ Report must be sent to all related parties

Settlement steps map



7. Conclusions

With the purpose of 'Investigating tangible cultural resources in the area of Trung S-n Hydro-electric Project, Thanh Ho, province'', the consultative team has carried out the work as the contract signed between the ViÖt Nam Institute of Archaeology and the Management Board of Trung S-n Hydroelectric Project.

The tangible cultural sites that were found are archaeological. Therefore, the treatment of them is to focus on excavation only.

The investigation of the tangible cultural sites in the area of Trung S-n hydroelectric project is scientifically important. This is the first time that a comprehensive survey of the tangible cultural sites in the western Thanh Hãa province. The finds have proved the existence of the local inhabitants in western Thanh Hãa from the late Paleolithic up to now.

The investors of the project and the cultural management authorities should cope with the archaeological site in the riverbed in accordance with the Law on Cultural Heritage before the construction and the operation of Trung S-n hydro-electronic plant in order to preserve and valorize the national cultural values.

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Trung S-n Hydro-electric Project in the project for technical supports (PHRD grant) preparing for the plan
''Vietnamese Hydro-electrical Development''

Appendix of Report

*''Investigating tangible cultural resources in the area of
Trung S -n Hydro-electric Project , Thanh Ho ,
province''*

Consultative group: ViÕt Nam Institute of Archaeology

Hµ Néi , November 2008

Appendix 1: ADDITIONAL REPORT
"Investigating tangible cultural resources in the area of Trung Son Hydro-electric Project, Thanh Hoa province"

During the work on the field on 14th November 2008 with representatives of the WB, Trung Son hydroelectric project management board. Mr. Joan Quintero had some ideas about the type of cemetery of local modern residents.

1. The cemetery

1.1. Co Me Cemetery

Co Me cemetery located in the Co Me hamlet, Trung Son commune, Quan Hoa district, along of Ma river bank, about 200m far from foot of hydroelectric dam on the lower section at 20^o33'269"N; 105^o01'113"E and 98m above sea level. Relics distributed in the area of bamboo forest along the river banks, the area under the PMB planning to build regional support and housing for workers. In this area there are graves are put natural stone in large size marked by surrounding a rectangle or near ellipses shape.

From the survey results and compare the typology, a team consultant realizes that this is a cemetery area used in a quite long time. However, when conducted intensive, a number of households in the Co Me to realize the grave of their ancestry and therefore they do not allow consultant to take a test pit to study in this site.

A methodology of this research is applying ethnology study methods to reveal that this cemetery is a grave of Co Me ancestor (that is, a majority of the residents of Co Me now). The local people also said it is a part of their ancestry from about 5 - 7 generations until recently, when the hamlet move too far, no convenient to buried there anymore. Temporarily satisfied with the answers, it can be guess a time to start buried in this area at the end of the 18th century to the beginning of 19th century and stop using this area is about more than 20 years ago.

1.2. Bang Non's cemetery

Bang Non cemetery located at the bamboo forest of the Ta Lao Dong hamlet, Tan Xuan commune, Moc Chau district, at the foot of a mountain in quite high level of slope, in the right Quanh stream. Coordinate 20^o39'284"N; 104^o48'955"E, 139m above sea level. In this area there are many graves putting stone is fairly large size to mark in on top of grave.

Deployment work at the cemetery, we also encounter the same phenomenon as in the Co Me. The local people of Ta Lao Dong hamlet also confirmed that grave of their forefather and they still care for the holiday's festival occasions. However, when we ask to specific relationships between people who live and owner of the graves, then almost no one is sure precisely, a common answer is ancestor of about 5 generations. If every generation is about 20 years, so the date of started of this cemetery is around the end of the 19th century (?).

1.3. Ta Ban's cemetery

Ta Ban cemetery located in the western Ta Ban hamlet, Trung Son commune, Quan Hoa district. Coordinate 20^o37'235"N; 104^o50'390"E, 133m above sea level.

At this location we have observed is the customary practice is to connect a fairly interesting. Old graves are still put a small natural stones around. However the new graves

buried recently placed around the stone tombs have been replaced by rectangular columns of concrete with a spike reaching up. In addition, the new graves buried also has a "crypt" made from bamboo trains and cover by leaves (recently almost replaced by nylon), it reflects the sort of buried custom of residents in the past.

1.4. The cemetery of Mr.Duc's family

This cemetery located in the regional housing and garden of the family Mr. Ha Van Duc, Ta Lao Tay hamlet, Tan Xuan commune, Moc Chau district. At the foot of a mountain, on the left of the Nghieu spring flows into Ta Lao streams approximately 300m. Relics coordinate 20⁰39'099"N; 104⁰47'823"E, 158m above sea level.

Similarly to the cemetery of Ngheo hamlet, this area before the burial tomb of the residents of Nghieu hamlet but because Nghieu hamlet has moved to another place for several dozen years ago to address this area that is no longer use. Currently, a household of Mr. Ha Van Duc who belonged to the Lao Ta Tay hamlet came here to explore the land, building house and get land to cultivation.

2. Evaluation of the cemeteries area

The cemeteries located in the working area in common are an area of the Thai people. The cemeteries have similar structure and keep reservations quite long traditional buried custom. It is a type of put a stones in one top, both two top or surrounding tombs. Although up to now, some areas instead of a rocky mountain by concrete casting (as in the case of the cemetery of Ta Ban hamlet), its still keep a marks of the traditional graves.

Differences can be re noticed that among an ancient graves and other modern graves burial proceed according to tradition is the modern graves those who use smaller natural stones than old one.

Investigating and assessment of the Co Me's cemetery leads to a situation which is rather complicated. The work in phase 1 of the consulting group found that the necessity of conducting a test pit to be able to make accurate assessment. Yet by the graves, those persons "have a home", is the tomb of ancestor of local residents should not allow us to organize an excavation here. Practical problem here is very sensitive in the spiritual peoples of Viet Nam in general. When touching to this issue, generally at all levels of government is to the community residents, in particular the families related to an area that stands out actively processing (the plan treats them specifically we presented in Section 3.1 below).

It can be noticed that the area of modern cemetery reality with the spiritual household specific rather than a regional nature spiritual version of the village. Therefore we can not rank them in the form of relics and cultural objects related to community groups local residents. At first look, it's very easily confused with the region's spiritual both by almost any family tomb may also be burial here and every occasion when festival ceremony almost any home also held visiting tombs. But more carefully observe that is activities of each individual household, the individual, not the organization of the whole community. In an area large cemetery, each family is only taking care of a part of their forefather and their families regardless of the graves around.

Thus under the criteria of Article 28 of Law on Cultural Heritage, the cemeteries was not at all kinds of relics has been provided.

3. Handling options

3.1. The overall project

The cemetery area of the modern local residents is located in the working area together compensation under the price has been provided. This is a part of the Migration resettlement. Yet within the working of PCR consultation, we propose the following:

- Beside the compensation under the regulations the current legal, the Migration resettlement should have some contact sessions, listen to the opinions and aspirations of the local people - who represent households family related to the move their ancestor grave, because this is a problem that is spiritual, very sensitive.

- When moving, trying to campaign for local people's self-moving the graves of their ancient, limited job that is the imposition very easily cause a bad reactions because affecting the construction works.

- Pre, during and after moving the cemetery, the Migration resettlement should consult customs of the community of Thai people and do some ceremony in accordance with their customs. This work will contribute a wide range helpful in the stabilization of the spirit, contributing to make them more comfortable when moved to a new location.

In general, soon after conducting the work compensate, mobility means moving the cemetery, the open fields and construction will be able to deploy.

3.2. Option handling the Co Me and Bang Non cemetery.

As the items above were on display, the Co Me cemetery is a part of the households under the Co Me hamlet and Bang Non is a part of their forefather of the households Ta Lao Dong hamlet. Option general processing for the cemetery is compensation for household's actively moving their line. However, at a cultural object, due to the unclear of the "definition of cultural objects" should have led to a lack of communication in the evaluation of this report.

A consultant recommends handled 2 sites as follows:

- The Migration resettlement conducted compensation to move a cemetery as current law. In which the right to actively belong to households have a buried there. The compensation to moving must be conducted before and which is about time to hand over space for the building hydroelectric station. Especially Co Me's cemetery, because this site location at place that construction camp for workers. Without the good calculations it will be easy to a bad affecting the progress of works.

- In the process of moving should have a specialized field of archeology work supervising construction sites, so if there are problems of cultural objects will be able to actively resolve immediately without temporarily stop work. Thus in terms of the liberation of the relics and cultural objects in the project should have a binding terms of specialist consultants must be present to monitor and perform task of moving the graves ancient (if any) in this 2 sites.

In fact a specialist archeology facile determine where the graves are "new", where the graves are "old" and advise how to handle the most effective. In case no one recipient, if graves are valuable cultural - history, the archeology experts who will be processed together.

Nor the ability to remove some of the graves "have a home" valuable cultural - history (for example, a tomb of Phia Tao or Quan Lang (hereditary mandarin of the village) so the research it will contribute to ancient life society). This case we must still respect the role of the household employer graves and they have full right to handle such graves. Consultant's role is consulting them how to handle and try to record maximum information obtained. If

the owner of graves gives a franchise rights to moving, then the archeologists will be started to work.

3.3. Handling option of Ta Ban's cemetery and Mr. Duc cemetery.

Processing to move the cemetery in this case rather simple, because they are all new buried and has been stipulated in the category of moving by the legal framework existing.

For the Ta Ban's cemetery, the compensation will be conducted for households have a grave and they will move the graves themselves. Combined with compensation, PMB should organize some of the meeting and speak to them better understand the work that is contributing to the development of the country.

For the Mr. Duc cemetery, because local residents of Nghieu hamlet is not clearly have migrated to the village to where so the Migration resettlement should be informed widely on the means of mass media. In case no one to receive those graves the Migration resettlement to stand up to the move.

4. Expense of handling and responsibilities of the parties involved

4.1. Expense of handling

Compensation expense and processing to move those cemeteries by the Migration resettlement is responsible for implementation.

However, in some specific cases, as some of the graves were valuable cultural - history need to continue to implement the task of research and by the archeologist carried out the expenditure will allotted as follows:

- Funding compensation to households have graves that will by the Migration resettlement is responsible for implementation.

- Funding excavated research will be obtained from sources expense of moving the cultural relic's objects in the project area. More specific, a source of this expenditure will be drawn from an expense account contingency for a chance opportunities process.

4.2. Responsibilities of the parties involved

Trung Son Hydro – electric PMB, particularly the Migration resettlement needs in collaboration with consulting to carries out the processing to move the relics and cultural objects in order to implement work together on the location. This combination is very important to ensure the work is done in a lilt, convenient, guaranteed according to the clearance of the construction Trung Son hydroelectric projects.

Appendix 2: Archaeological sites on the working

Appendix 3: Team member of proposal

Full name	Function
Hà Văn Phùng	Team Leader, President of the Institute of Archaeology
Trần Quý Thịnh	Doctor, Research Fellow of the Institute of Archaeology
Nguyễn Khắc Sử	Asst. Professor of the Institute of Archaeology
Bùi Văn Liêm	Doctor, Research Fellow of the Institute of Archaeology
Nguyễn Thị Mai Hương	MA, Research of the Institute of Archaeology
Lê Hải Đăng	Research of the Institute of Archaeology
Phan Thanh Toàn	Research of the Institute of Archaeology
Nguyễn Ngọc Quý	Research of the Institute of Archaeology
Nguyễn Đăng Đạt	Research of The Management of Thanh Hoa Vestiges
Bùi Văn Mạnh	Research of General Museum of Son La Province

Appendix 4: List of Informer

TT	Full name	Address
1.	Phạm Minh Thiệm	The People's Committee of Trung Sơn Commune
2.	Lương Thành Đô	The People's Committee of Trung Sơn Commune
3.	Phạm Minh Thắng	The People's Committee of Trung Sơn Commune
4.	Vi Văn Tái	Ta Bán village of Trung Sơn Commune
5.	Lò Thị Vân	Ta Bán village of Trung Sơn Commune
6.	Phạm Bá Ảnh	Ta Bán village of Trung Sơn Commune
7.	Lò Khảm Tư	Ta Bán village of Trung Sơn Commune
8.	Vi Văn Đội	Ta Bán village of Trung Sơn Commune
9.	Phạm Bá Lâm	Ta Bán village of Trung Sơn Commune
10.	Lương Văn Giáp	Ta Bán village of Trung Sơn Commune
11.	Vi Văn Lạc	Quán Nhục village of Trung Sơn Commune
12.	Vi Văn Thu	Xước village of Trung Sơn Commune
13.	Lò Văn Thoát	Xước village of Trung Sơn Commune
14.	Hoàng Văn Chỉ	The People's Committee of Tân Xuân Commune
15.	Hà Ngọc Điệp	The People's Committee of Tân Xuân Commune
16.	Hà Duy Thoán	The People's Committee of Tân Xuân Commune
17.	Hà Văn Hưng	Tà Lào Đông village of Tân Xuân Commune
18.	Hà Văn Thoàn	Tà Lào Tây village of Tân Xuân Commune
19.	Hà Văn Đức	Tà Lào Tây village of Tân Xuân Commune
20.	Vi Văn Ngà	Pù Lâu village of Xuân Nha Commune
21.	Đình Công Đại	The People's Committee of Mường Lý Commune
22.	Ngân Văn Khánh	Tài Chánh village of Mường Lý Commune
23.	Vi Văn Phương	Tài Chánh village of Mường Lý Commune
24.	Lương Văn Toán	Tài Chánh village of Mường Lý Commune
25.	Vi Văn Thẩm	Nàng 1 village of Mường Lý Commune
26.	Ngân Văn Thu	Nàng 1 village of Mường Lý Commune
27.	Đình Công Điệp	Nàng 1 village of Mường Lý Commune
28.	Ngân Thị Thiết	Nàng 1 village of Mường Lý Commune
29.	Lò Văn Thân	Kít village of Mường Lý Commune
30.	Lương Văn Đoàn	Mau village of Mường Lý Commune
31.	Hà Văn Phon	Chiềng Nưa village of Mường Lý Commune
32.	Lương Chí Phui	The People's Committee of Tam Chung Commune
33.	Hà Văn Phương	Phom Khuông village of Tam Chung Commune
34.	Vi Văn Phương	Cân village of Tam Chung Commune
35.	Vi Văn Khít	Lát village of Tam Chung Commune
36.	Hà Văn Sỗ	Lát village of Tam Chung Commune
37.	Ngân Văn Mừng	Mường Lát District
38.	Phạm Văn Duyệt	Mường Lát District
39.	Hà Văn Nghị	Mường Lát District
40.	Lương Văn Quang	The People's Committee of Trung Lý Commune
41.	Sùng A Páo	Pa Búa village of Trung Lý Commune

42.	Đình Công Điện	Lìn village of Trung Lý Commune
43.	Thào A Thái	Tà Cóm village of Trung Lý Commune
44.	Hà Văn Oan	Chiềng Lý village of Trung Lý Commune
45.	Ngân Văn Hiệu	Chiềng Lý village of Trung Lý Commune
46.	Hà Văn Quỳnh	Chiềng Lý village of Trung Lý Commune
47.	Giàng A Di	U village of Trung Lý Commune
48.	Vàng Giáng Cửa	Cà Giáng village of Trung Lý Commune

Appendix 5: List of tables

Table 1: The present administrative locations

Table 2: Morphological and affected riverbed area classification

Table 3: Site classification in terms of administrative locations

Table 4: Morphological classification

Table 5. Stone tool assemblage of Ban Nang 1 site

Table 6. Stone tool assemblage of Ban Nang 1 site

Table 7. The assemblages of archaeological artifacts in the region

Table 8: Statistics, classification for historical-time artifacts

Table 9: Estimated expenditure for excavation implementation

Table 10. Excavation plan for the sites in the working area

Appendix 6: List of plates



Plate 1: Mã river on the working area



Plate 2: The Paleolithic site of Nàng 1 village



Plate 3: Stone tools of Nàng 1 site



Plate 4: Stone tool of Nàng 1 site



Plate 5: Stone tool of Nàng 1 site



Plate 6: Stone tool of Nàng 1 site



Plate 7: Stone tool of Nàng 1 site

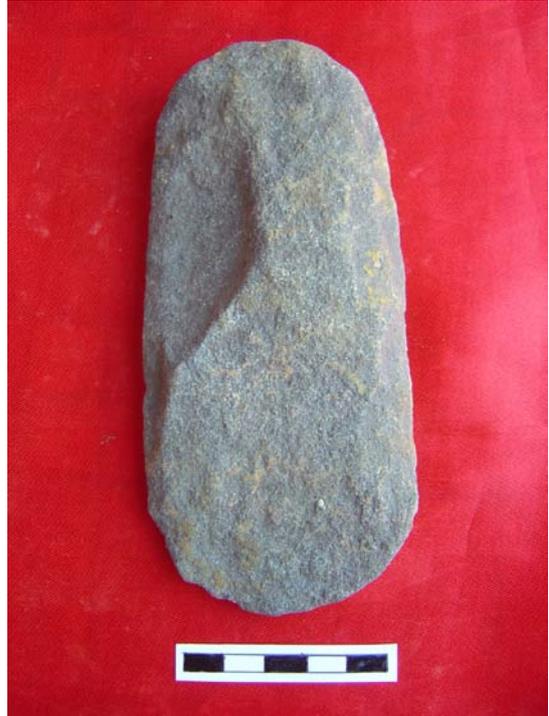


Plate 8: Stone tool of Nàng 1 site



Plate 9: Cú Cave site



Plate 10: From Cú cave to Lát stream



Plate 11: Investigating Cú cave site



Plate 12: Investigating Cú cave site



Plate 13: Pottery-covered of Cú cave



Plate 14: Pottery-covered of Cú cave



Plate 15: Pottery-covered of Cú cave



Plate 16: Pottery-covered of Cú cave



Plate 17: Pottery-covered of Cú cave



Plate 18: Pottery-covered of Cú cave



Plate 19: Huôi Pa burial



Plate 20: Huôi Pa burial



Plate 21: Huôi Pa burial



Plate 22: : Investigating Huôi Pa burial



Plate 23: Tiên Tăng burial

Plate 24: Tiên Tăng burial



Plate 25: Nằng Chanh rockshelter burial

Plate 26: Nằng Chanh rockshelter burial



Plate 27: Stone with inscription of Tam Chung Commune

Plate 28: Stone with inscription of Tam Chung Commune



Plate 29: Bronze axe of Nàng 1 village



Plate 30: Bronze axe of Ta Bán village



Plate 31: Bronze axe of Ta Bán village



Plate 32: Bronze axe of Ta Bán village



Plate 33: Bronze tool of Ta Bán village



Plate 34: Stone axe of Nàng 1 village



Plate 35: Stone tool of Nàng 1 village



Plate 36: Stone axes of Nàng 1 village



Plate 37: Stone tool of Nàng 1 village



Plate 38: Bone artifact of Nàng 1 village



Plate 39: Stone axe of Ta Bán village



Plate 40: : Stone axe of Ta Bán village



Plate 41: The collection of zinc coins at Ta Bán village



Plate 42: The collection of zinc coins at Ta Bán village



Plate 43: The Gia Long-dated coins



Plate 44: The Minh Mệnh- dated coins



Plate 45: The Tụ Đức-dated coins

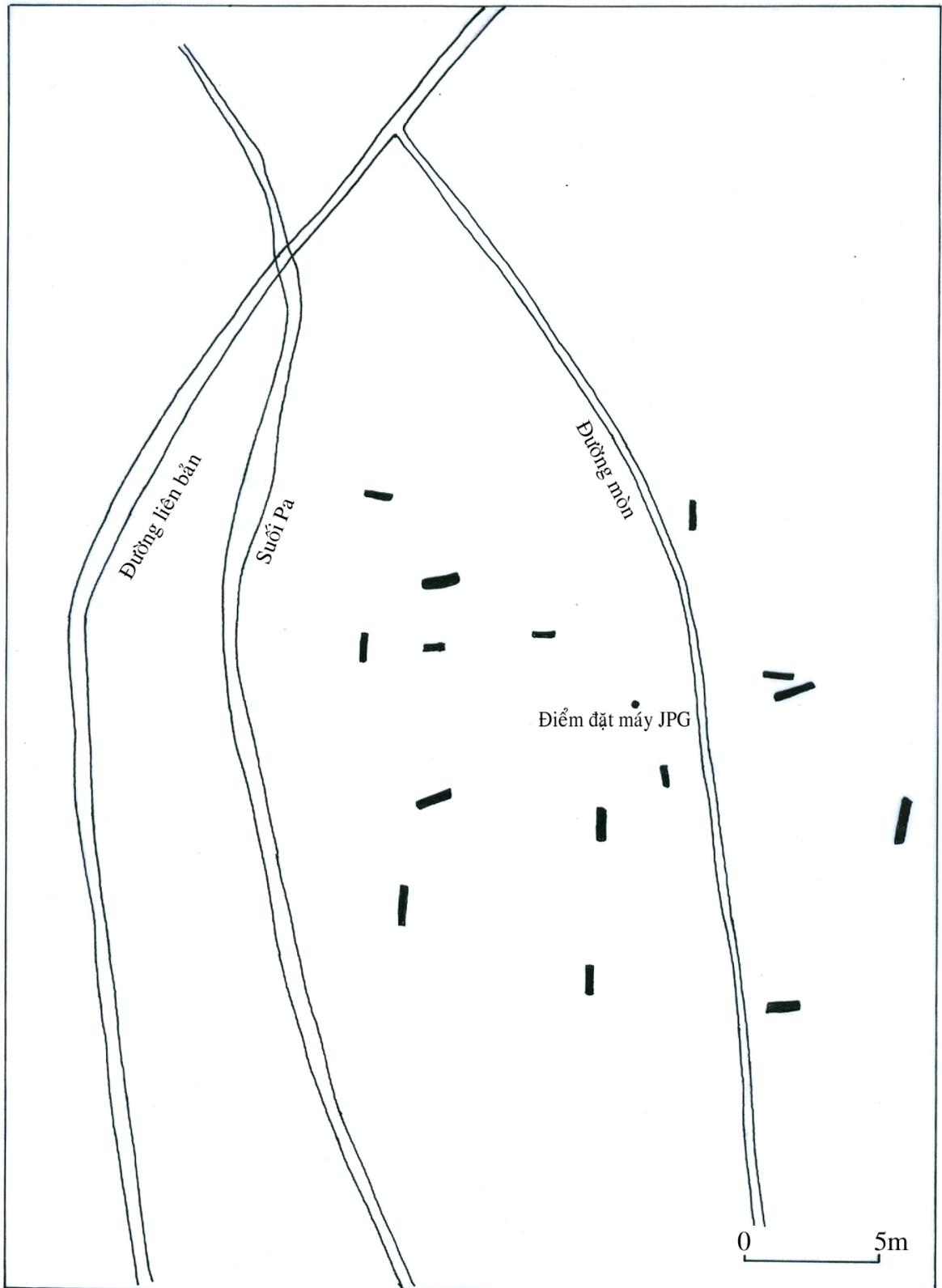


Plate 46: "Khiêng sắn" of Nàng 1 village

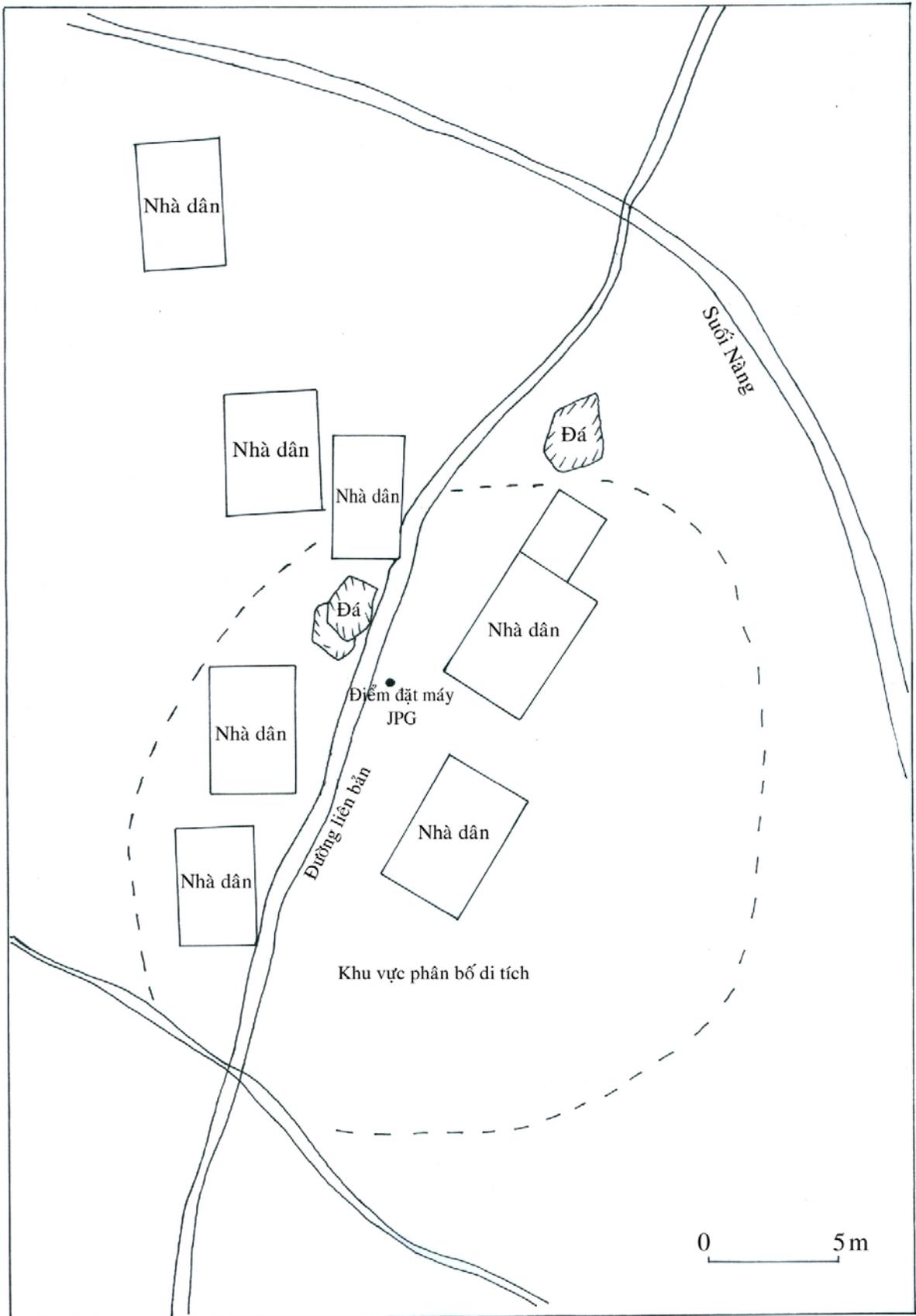


Plate 47: "Khiêng sắn" of Nàng 1 village

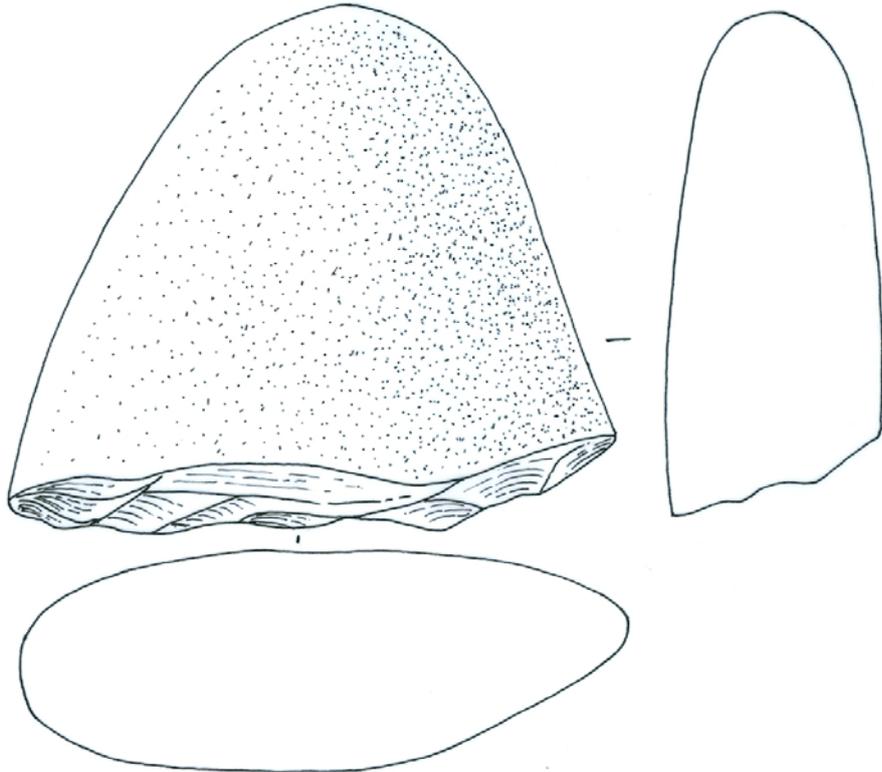
Appendix 7: List of drawing



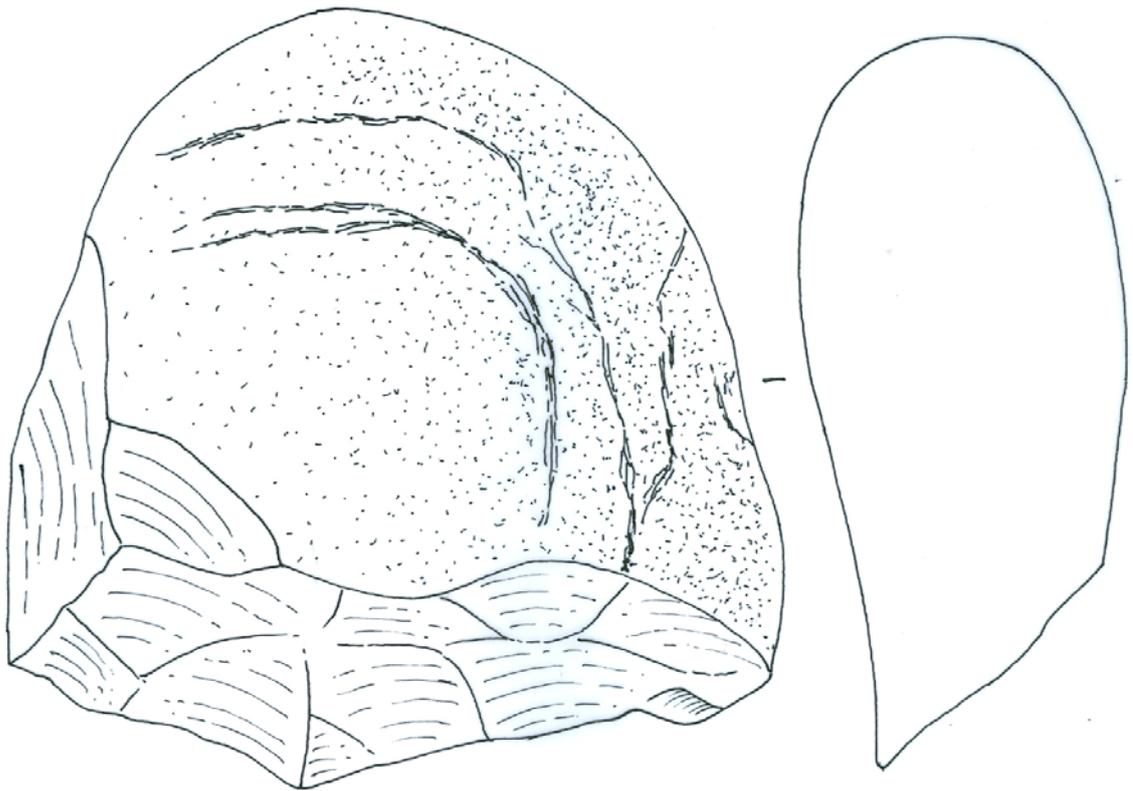
Drawing 1: Huai Pa burial area



Drawing 2: Paleolithic site of Nung 1 village



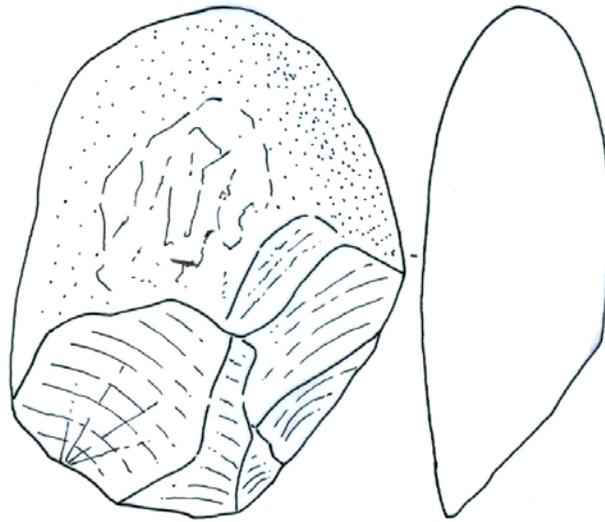
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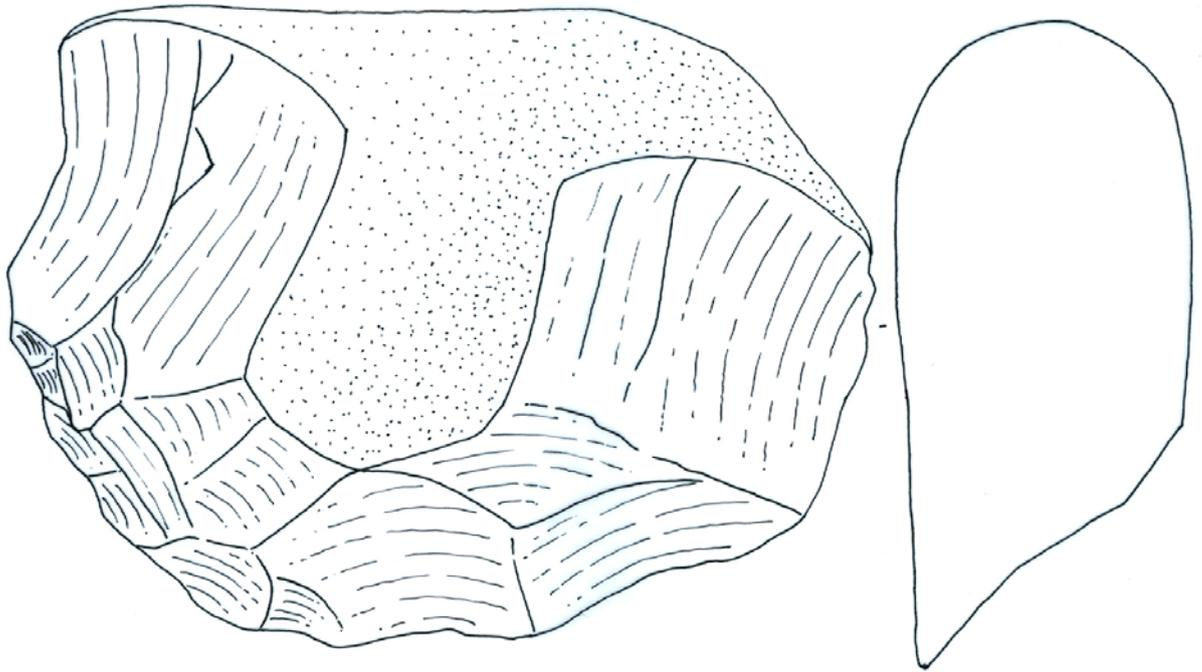
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Drawing 3: The artifacts collected of N à ng 1 village

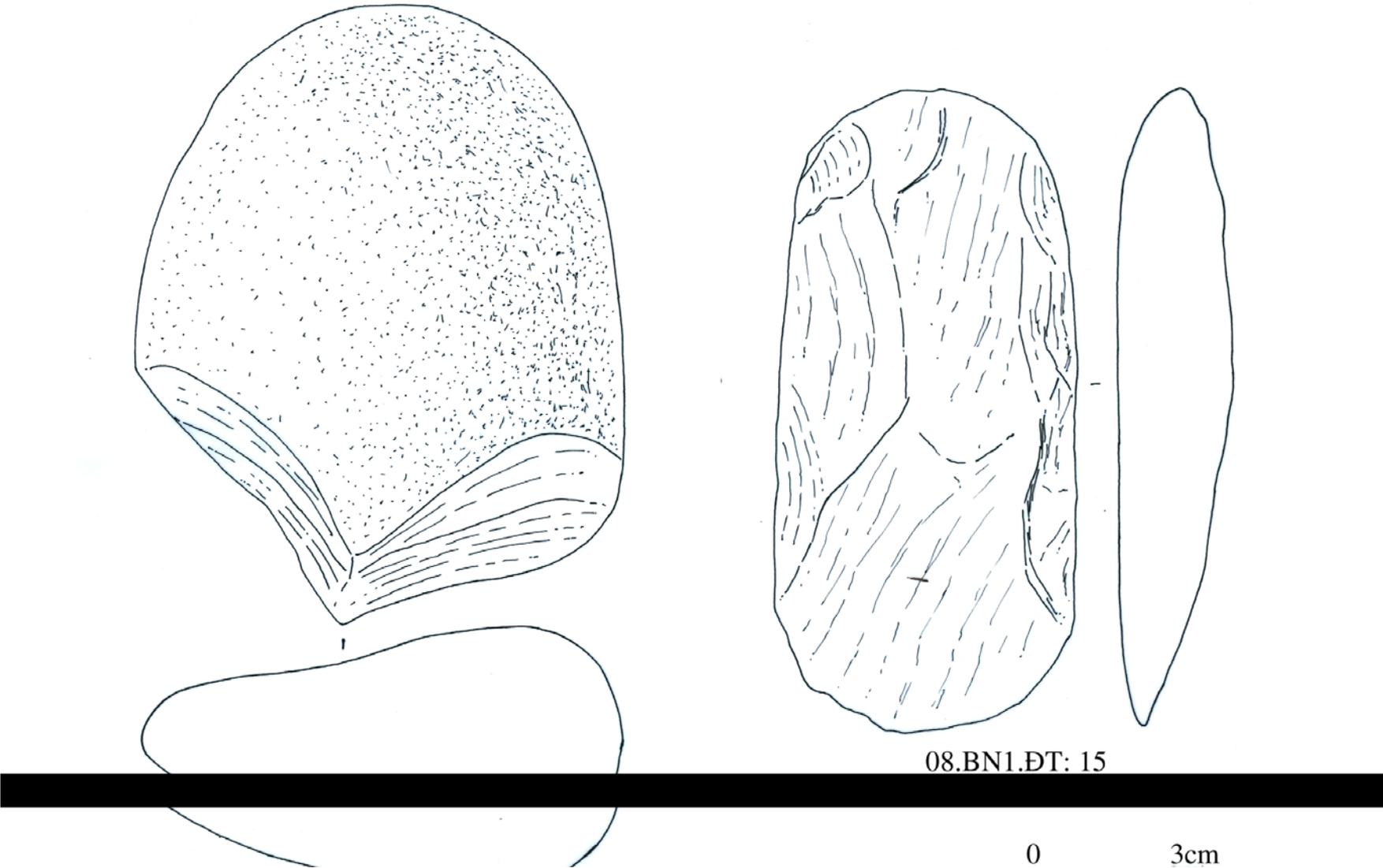


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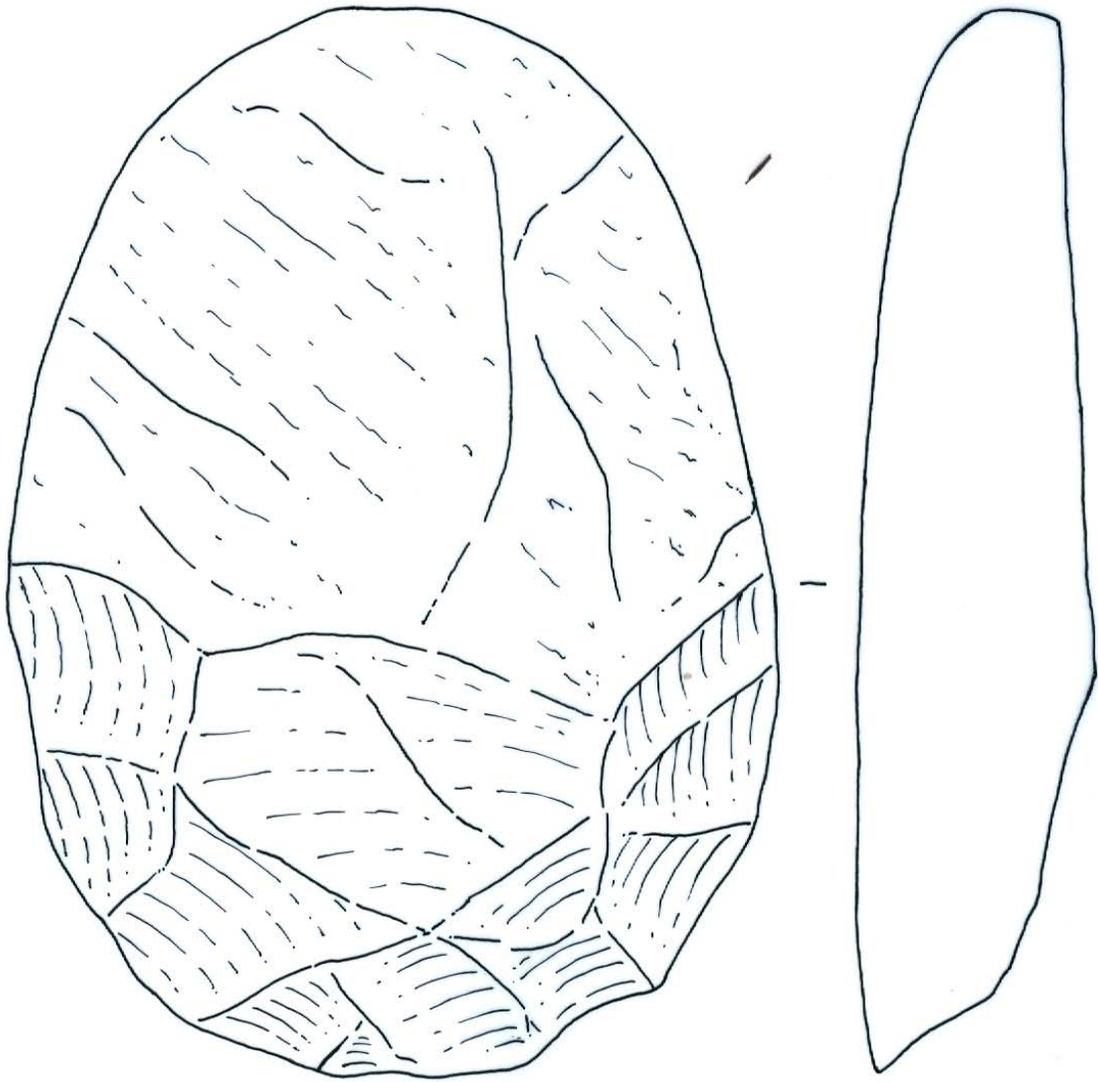


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Drawing 4: The artifacts collected of N à ng 1 village



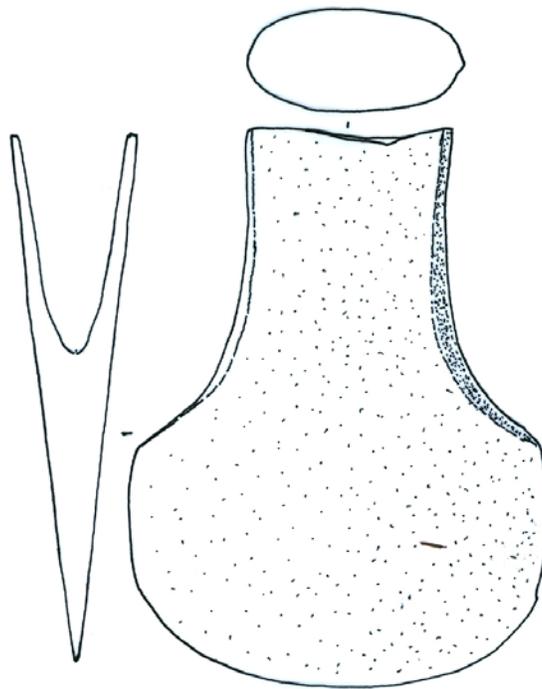
Drawing 5: The artifacts collected of N àng 1 village



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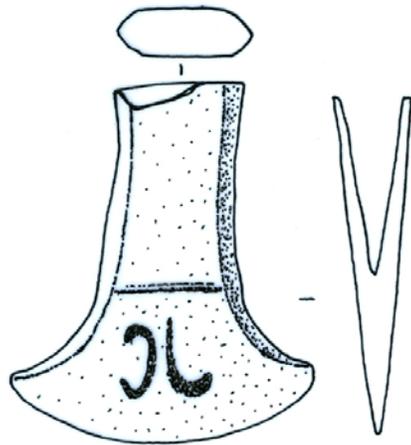
Drawing 6: The artifacts collected of N àng 1 village



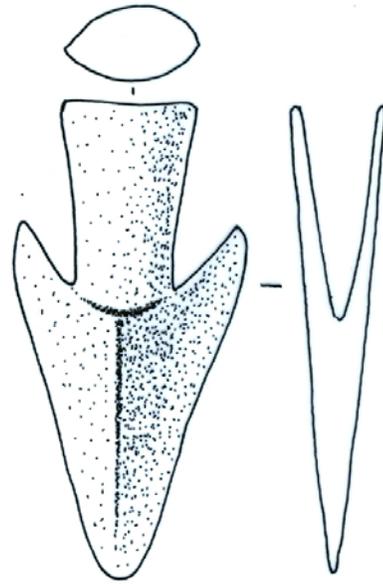
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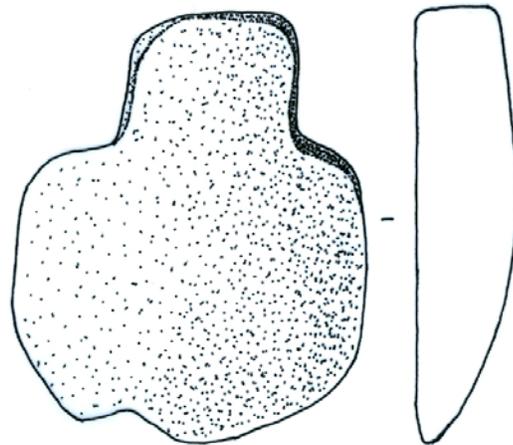
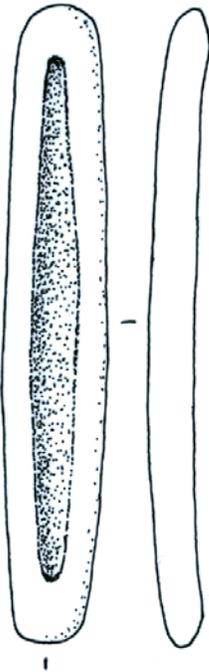
Drawing 7: The artifacts collected of Ta Bán village



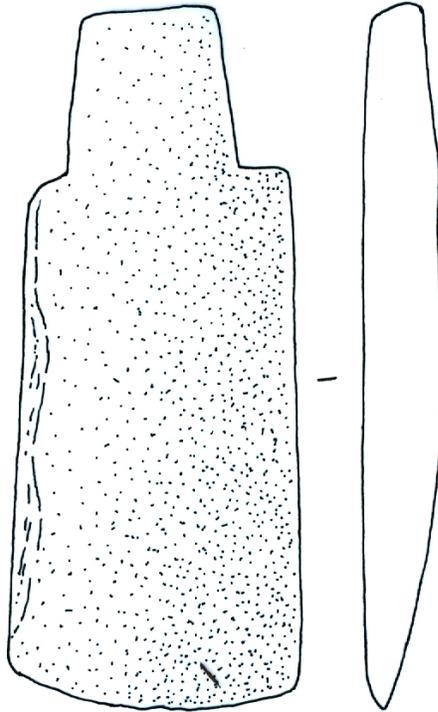
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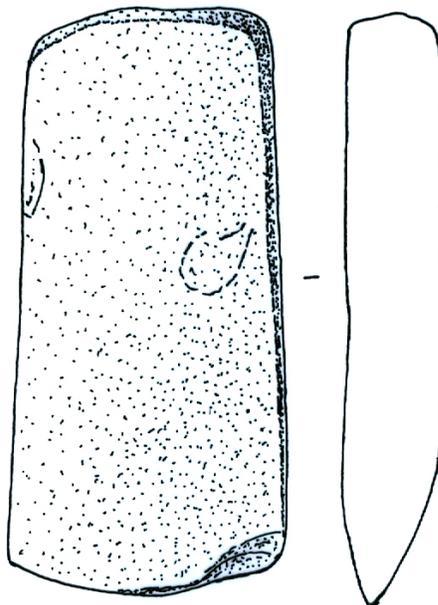
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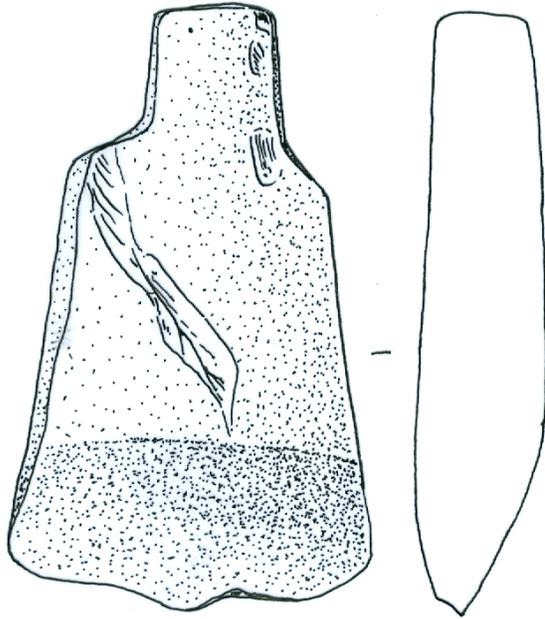
Drawing 8: The artifacts collected of Ta Bán village



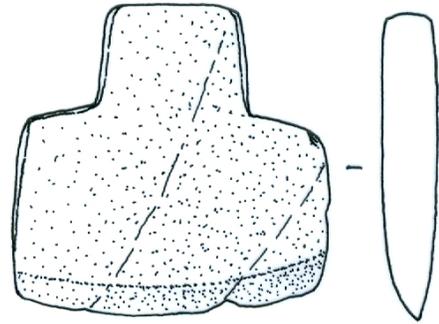
08.TB.ST: 5



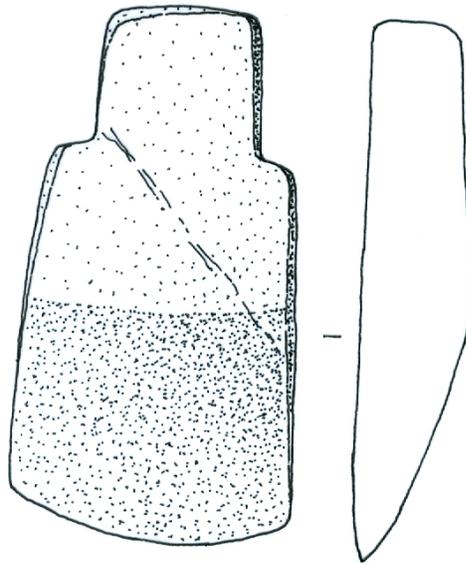
Drawing 9: The artifacts collected of Ta Bán village



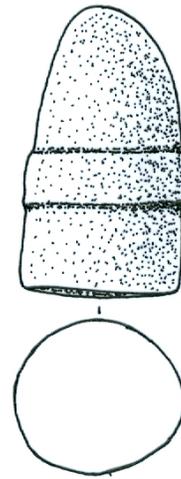
08.TC.ST: 1



08.TC.ST: 3

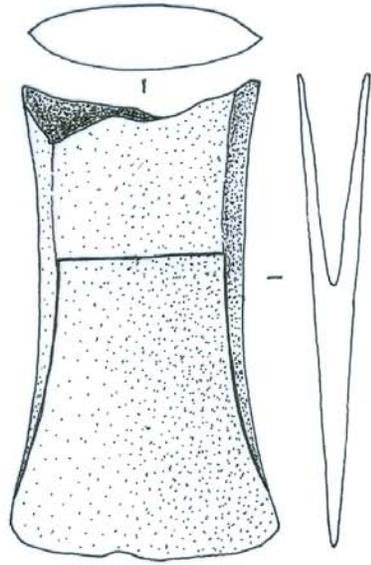


08.TC.ST: 2

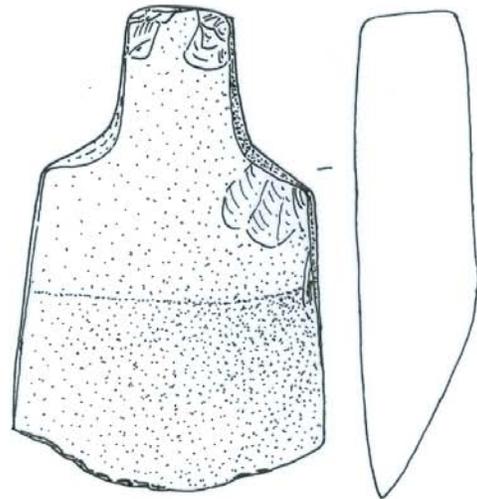


08.TC.ST: 4

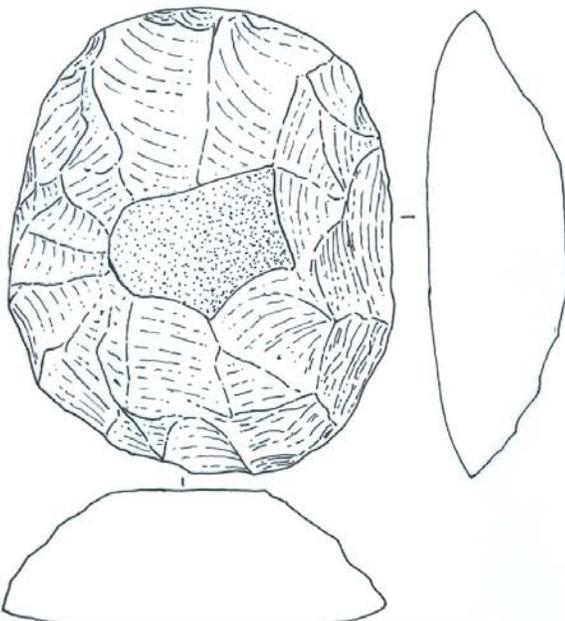
Drawing 10: The artifacts collected of Tàì Chánh village



08.BN1.ST: 1



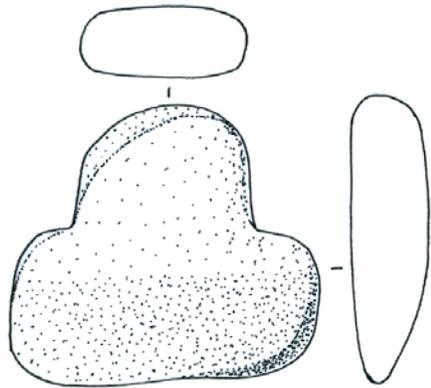
08.BN1.ST: 3



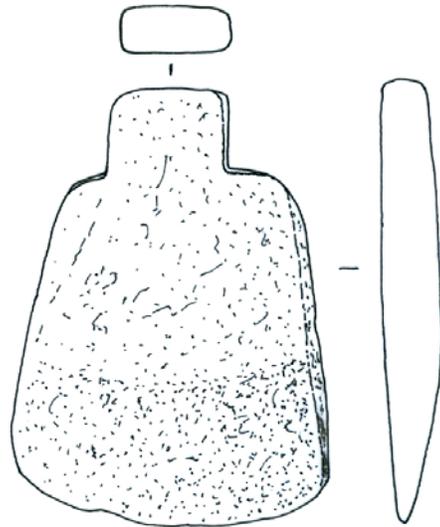
08.BN1.ST: 4



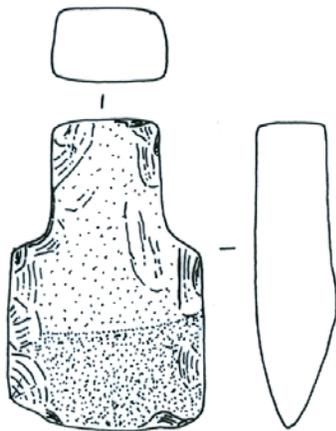
Drawing 11: The artifacts collected of Nàng 1 village



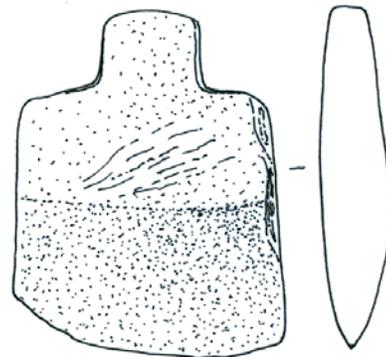
08.BN1:ST: 6



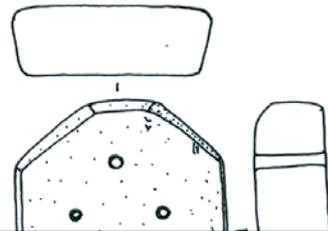
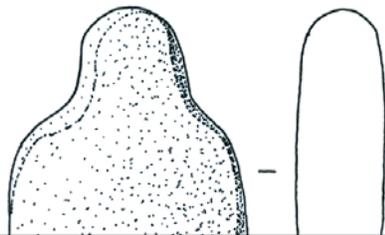
08.BN1:ST: 7



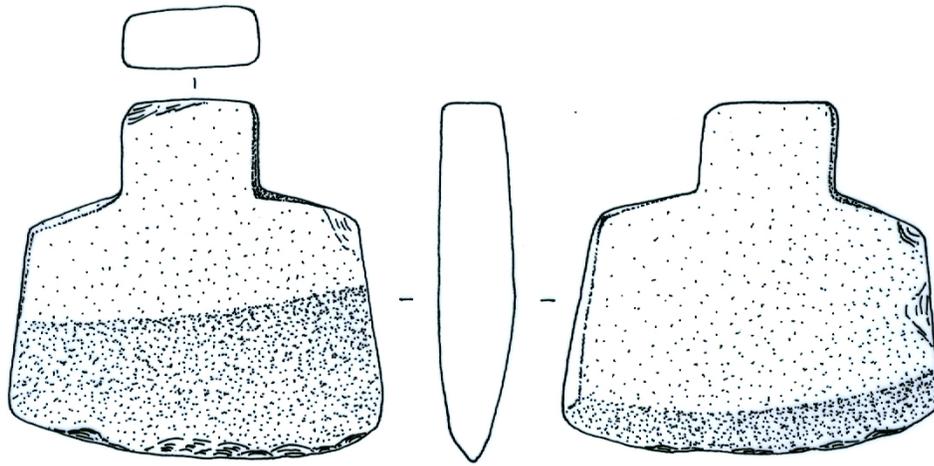
08.BN1:ST: 8



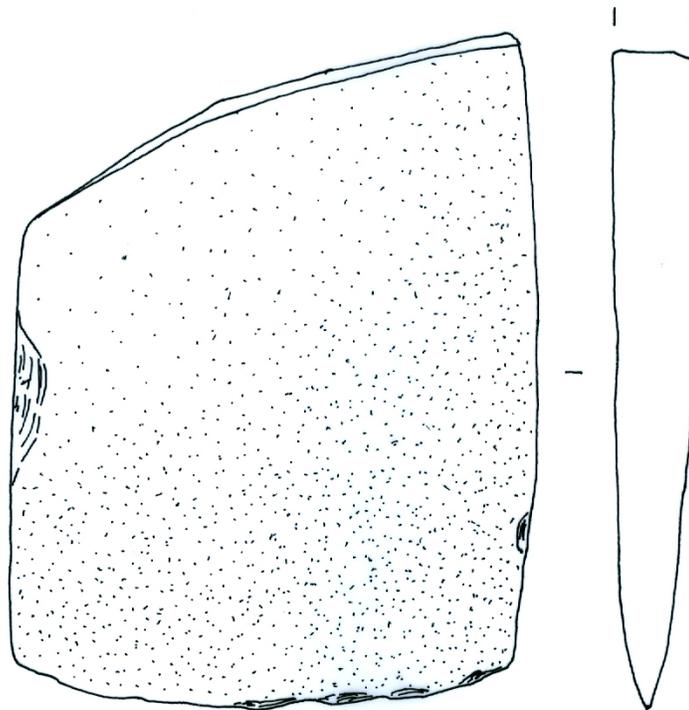
08.BN1:ST: 11



Drawing 12: The artifacts collected of Nàng 1 village



08.BN1.ST: 10



Drawing 13: The artifacts collected of Nàng 1 village