Addis Ababa University
College of Graduate Studies

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By Solomon KebedeTessema

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Significance of Melka Kunture Prehistoric Site for Sustainable Tourism Development of Ethiopia

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College of Social Sciences

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ABSTRACT

This study documents the importance of archeological sites of Melka Kunture and its environs. To deal with this issue, the qualitative method and descriptive approaches are employed using interviews, questioners, personal observations and related literature reviews. Due to the nature of the data purposive sampling was preferred to gather data from purposely selected key informant groups to meet the objective of the study. As the result of this thesis, indicates, the possible establishment of integrated archeological and cultural sites within the proposed corridor would bring significant positive impact in the development of sustainable tourism. Among all findings, the proximity of the archeological site to the capital city, as well as the presence of closely located archeological and paleontological localities, the Open Air Museum, the natural resource sites in the wide area, as well as the flourishing living cultural qualities of the Oromo people and the natural habitat are taken as the major findings of this thesis. At present compared to many other archeological sites, Melka Kunture archeological site is considered to be in a better position. Based on its proximity to the capital city and the frequent visit by researchers from abroad this research paper thoroughly discussed issues related to the need to formulate strategies for sustainable tourism development that benefits the local community. Possibly this would help propel the development of rural tourism, cultural industry as well as preserve the indigenous heritage of the local community. The paper deals with such an institutional development in the locality would provide opportunities for ***local and international researcher to respond and to over***come *problems associated with the absence of sustainable tourism development. Therefore, the various sections of the community, Non-Governmental Organizations and the government should properly focus on conducting critical researches, capacity building and appropriate interventions by using integrative approaches developing heritage sites to meet international standards.*

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Glory be to the Almighty God for he alone is my rock, and my fortress, and my deliverer, my strength, in whom I will trust

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C H A P T E R O N E
Introduction

1.1. General Background

Melka Kunture area in general and the Kella locality in particular were mentioned for the first time in the 1930s by Father F.B. Azais while reporting his survey between Addis Ababa and Butajera(Azais and Chabard,1931)

Following his report in 1963, Gerard Dekker, a hydrologist from the Netherlands discovered the first Acheulian site at ‘ Kella’. This was the site that developed as one of the significant prehistoric sites in East Africa (Chavaillon and Piperno 2004).

Melka Kunture Prehistoric Site have got the potential to provide scientific information to humanity for over fifty years. The exceptional values of Melka-Kunture can be understood from the archaeological point of view as it is the only site in the world for yielding archaeological evidence for the four successive phases of stone tool technological traditions known as the Oldowan, Acheulean and the Middle Stone Age and Late Stone Age from at least 1.7.million years ago up to historic times. The site has also a big potential for future archaeological research as excavations in most of the localities have not been completed yet.

Its strategic location adjacent to the capital, the closely located archeological and paleontological sites together with the unique Open air museum have enabled the site to be the vital prehistoric site in the country.

Fig.1. a Ford around Kella (after Chavillion & Piperno 2004 **)**

1.2. Background of the study area:

1.2.1. Geography:

Melka Kunture is a prehistoric site located, in the South Western part of Oromia Regional State within 10 km radius at Kersana Malima Wereda. It is located on the periphery of Awash Melka town; on the upper course of the Awash River at an elevation ranging from 2000-2050 m above sea level, 50km South of Addis Ababa on the way to Butajera town. It is surrounded by Mountains like Wachacha and Furi in the North, Boti and Agoiabi in the South and the main Ethiopian Rift Valley system to the East (Chavaillon and Piperno, 2004).

The riverside plains are covered by acacia trees and grass. Reforestation activities in Melka Kunture have covered most parts of the area and made it very rich and lush. Awash Melka and its environs is endowed with diverse natural resources.

It has abundant surface and ground water, forests and wildlife resources. On the other hand, the faunal remains recovered from Melka Kunture have significantly contributed to the reconstruction and understanding of the paleo-environment of the area. It is endowed with a spectacular landscape, which resulted from volcanism, weathering and erosion operating together for over millions of years (Taieb 1974).

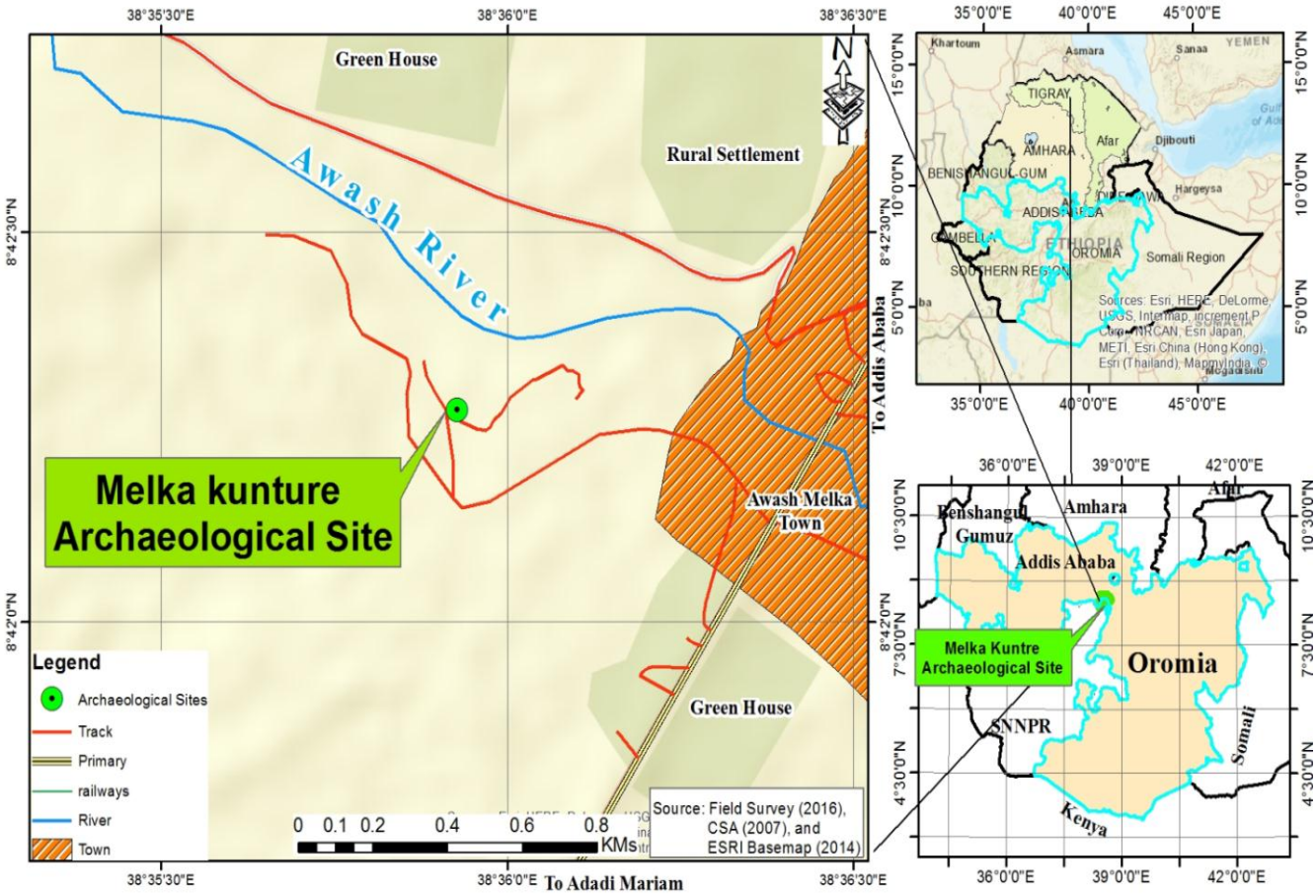

Fig.2. Location map of Melka Kunture Archaeological Site

1.2.2. Geological development of the study area:

The first geological study in the same site was started by geologist Seymour from Addis Ababa University in collaboration with Kenyan Scientist Mary Leaky and Glyn Isaacs.

(Haile Selassie *et al.*1990).

There are at list three major deposition events at the site of Melka Kunture. This depositions are characterized by **fluvial deposits** which include, pebble (which are usually used to manufacture stone tools), sand and clay, the **sedimentary deposits** are composed of Gravels and Conglomerates, Pebbels, Sand and Clay; the **volcanic deposits** are characterized by obsidian, ignimbrites and tuffs (Taib 1975; Chavaillon 1979).

The geological site formation process is associated with the Pleistocene epoch which is characterized by discontinues sedimentary or volcanic phases. The Awash River is the main factor for the depositional process which contributed a lot for the formation of Melka Kunture. the River Awash is the major source of denudation process. Up on the evidence from macroscopic examination reveals that, River Awash was fully encrusted with welded ignimbrites of type I and other volcanic rocks such as basalt (Kieffer *et al.* (2004).

On the left and eastern margin of the Awash River the site is fully embedded with serious of welded and non welded ignimbrites and tuffs specially at the left margin these depositions created the site of Kella which is very close to the Awash River (Piperno , 2001).

Climatic factors were also other significant factors which might have contributed a lot for the emergence of la custrine deposits and site formation process. But the most significant factors for the site formation process were climatic oscillation and the most notable one is the tectonic movements that would have been seen at the end of the Acheulean cultural complex

(Taieb 1971 and 1974)

The site of Melka Kunture survived from the various volcanic eruptions which are interconnected with Mio-Plio-Pleistocene evolution of the Ethiopian Rift. The stratigraphic column comprises 30m of successive formations spanning the latest Pliocene and mach of Pleistocene time (Delson *et al.* 2000).

There are six major cycles in which the erosion and sedimentation process. The top most deposits are associated with Old own sites that the remains of homo erectus which were evidenced in the different localities of Melka Kunture. As going deep in the stratigraphic time scale fuvio-lacustrine deposits were limited up to 1.3-1.1 million years old volcanic tuff layer. The last phase of deposition is characterized by highly erosive phase of Acheulean deposits with the remains of Homo sapiens (Chavaillon 1979; Berthelet *et al.* 2001).

A geological study at Balchit was carried out, where they collected many obsidian samples for geo-chemical analysis, which could be a direct implication of extensive distribution of obsidian utilization in the area. The result of this study indicate that obsidian was one of the major raw material at the Balchit outcrop and the technological advancement which was seen at the sites of Melka Kunture is due to the abundance of obsidian as a raw material as compared to other volcanic rocks which were evidenced from Garba and Gombore localities

(G.D. Malo *et al.* 2003/04).

Based on geographical, geological, cartographic and topographic data they reconstructed the regional drainage pattern of the area (Girard 1989). They studied the regional morphology by taking in to account the main river source for the area i.e. the Awash River which is the main source of deposition and sedimentation in the Melka Kunture basin.

The outcome of this study paved the way to reconstruct the structural sketch of the Melka Kunture area and also able to know the natural drainage pattern of the area provides a detail analysis about the drainage pattern and the regional morphology of Melka Kunture

(Bardin *et al.* (2004).

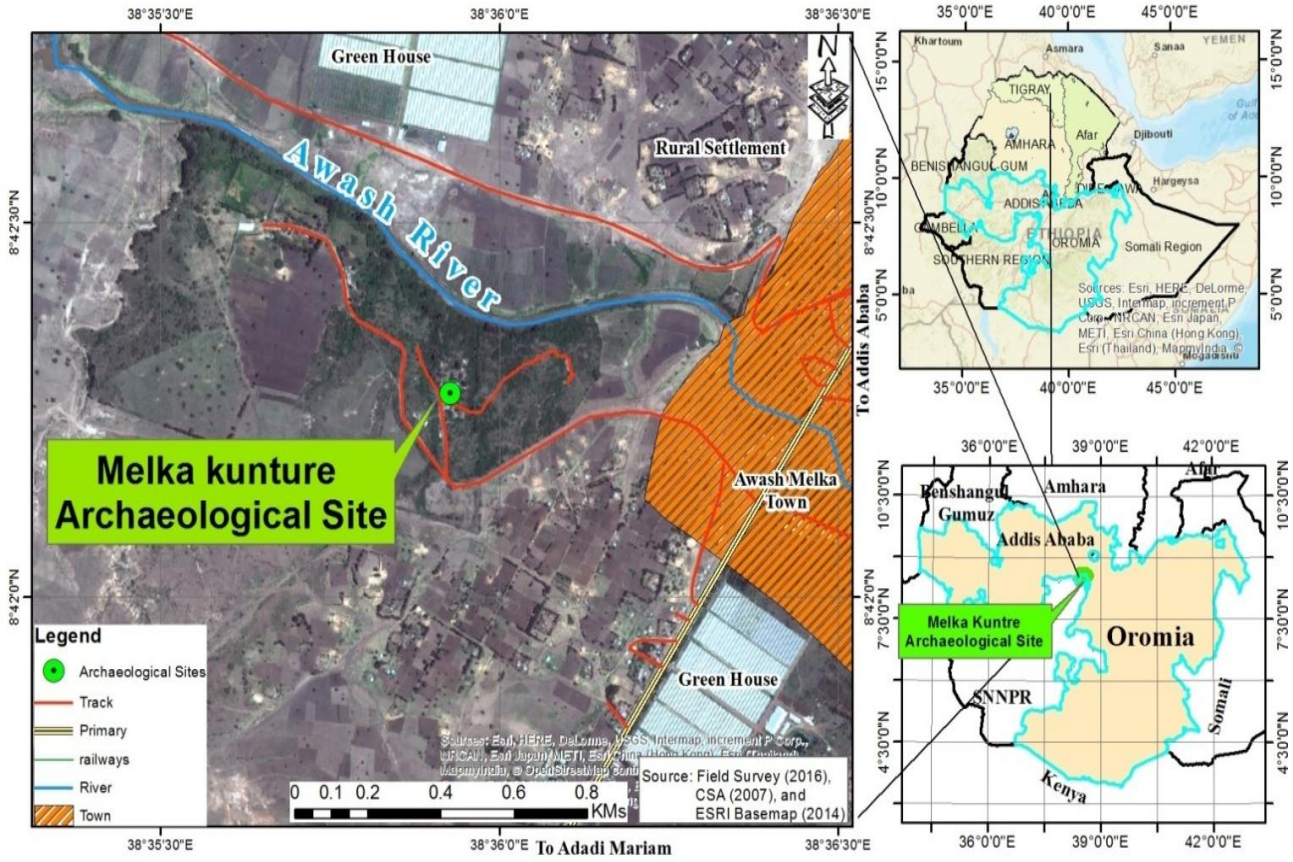

Fig.3: Melka Kunture Archaeological Site

1.2.3. Paleo-environment reconstruction of the study area:

The paleo environmental reconstruction of Melka Kunture was made possible because of the data which was generated from micro paleontological, paleo-botanical and stratigraphic data. The evidence from paleo-botanical analysis reveals that the paleo-environment of Melka Kunture was open savannah.

This statement is also supported by paleontological and pollen remains which were uncovered in 1970 ‘s .The analysis from pollen remains (Sample A.1966) proved that there were high number of large forests for instance Podo-carpus pollens plant specious like Junipers, were as the percentage composition of Graminiae were very less (Bonneville 1976).

The major plant specious were Junipers and podo-carpus pollens other plant specious were uncommon like Gramineae. This showed that there was a high rain fall during that time. In the early and middle Pleistocene epoch that the environment of Melka Kunture showed transition, the modification was caused by variation due to high arid or humid climate which is a characteristic feature of the Pleistocene epoch (Bonneville 1976).

From the paleontological evidence it was made possible to conclude that the Pleistocene environment showed modification which would result in the spreading of arboreal species (Geraads *et al.*2004).

The geological environment in the Melka Kunture basin is placed in the paleo Pleistocene epoch. The fluvial deposits along the site of Melka Kunture (obsidian gravels and various tools on flake) are found in the middle Pleistocene record. According to Taieb (1974) the Middle Pleistocene is a terminal record in the formations of the site. The lower Pleistocene which is characterized by

sandy clay, obsidian, basalt and some pebble stone tools were also uncovered which has an insight in the volcano sedimentary environment of the formation. In the upper Pleistocene mach of the deposits are alluvial deposits which often contain some volcanic elements and lithic materials for instance in locality of Kella mach of the deposits are alluviums. In general the entire volcanic sedimentary environment of the site is covered with black soil starching up to the town Adadi.

1.2.4. Current environment status of the study area:

Fig.4: Current environment state of Melka Kunture site (after (Piperno ,2004)

The current environmental pattern of the site and its environs is coming closer to the ancient environment. The environmental conditions are reappearing in river side environment which is covered by acacia tree.

There are also Junipers and Podocarpus trees, in addition of Gramineae which is an important grass specious which is found in the Awash basin. The re introduction of tree planting and the re-plantation of plant seeds makes the area very nice and attractive which insight tourists for a variable destination together with the only open air museum in Ethiopia.

1.2. Background of the Study:

Today, tourism is widely recognized as the largest industry on earth based on its contribution to global gross domestic product, the number of jobs it generates, and the number of clients it serves. According to United Nations World Tourism Organizations (UNWTO), 2006 tourism is one of the top five exports for 83 percent of all countries and the primary source of foreign exchange for 40 percent of countries.

Ethiopia is endowed with rich historical, cultural and material relics and abundance of natural resources. The country's rich natural, cultural and historical heritages has made it one of the significant tourist spots. Even though, the country has not yet became beneficiary of the benefits as such in comparison to its great heritage assets. The increasing number of tourists since recent times is an indicator of the growing tourism industry.

The archaeological resources of the country are vast and diverse, with great perspective to add value to the outstanding heritage of the country. Cultural wealth and resource by itself is becoming a tourism product and can make significant contributions to the nation's economic development.

Ethiopia has to open up major tourism development opportunities, so that, cultural heritage can become a pillar of the nation's overall growth enhancing strategy, as well as it enriches the foundation to the reduction of poverty and unemployment.

In relation to this, William Lip (1984) further stated that, archaeological sites and cultural resources in general have four values embedded in their social and cultural context. These values are economic value, information value, symbolic value and Aesthetic values.

Based on William Lip's classification, heritage resources hold the above mentioned values in line with their scientific contribution either in evolutionary process of humanity or cultural attributes. Thus, integrating the above noticed values in connection with their scientific significance would contribute more to the proper management of cultural heritage on the site.

Furthermore, the contribution of tourism for the local people is indicated by its integration into the local economy through benefiting the people economically by creating jobs such as tourism product production, hotels and related entertainment ventures. Accordingly, understanding the linkage between tourism developments and local tourist destination development should be given top priority in complementing national economy, since job creation is the principal strategy for most developing regions (Torres and Mommsen, 2004).

Having this in mind, most of the archaeological sites in Ethiopia were not properly utilized: in economic generating, job creation endeavor in sustainable tourism development aspect. Among the cultural heritages of the country Melka Kunture prehistoric site is considered to be more favorable site for tourism development due to its proximity to the capital and relatively better transportation infrastructure. The archaeological museums and numerous natural heritages have made the site a preferable destination for the tourists.

Nevertheless, due to lack of integrated effort of concerned stakeholders and lack of vigorous promotion process, it is plausible to argue that the site has not benefited the surrounding community of what it deserves to get. Therefore, it is indispensable that culture tourism offices at various levels have to undertake joint venture and promotional activities. This would enable to the benefits which the local community and the country at large deserves. If it is complimented by provision of inputs required for tourism industry namely, accommodation facilities, availability of various services which help, skilled tour guides, and services which help to increase accessibility of the locality, and by exploiting the favorable conditions which is made possible by the stable political condition in the country. This is how tourism sustainably develops for communal benefit particularly at destination sites like Melka Kunture.

This influential information was obtained from groups of key respondents of this study. Almost all the informants indicated that the cultural and natural phenomena in the site is still plenty and not properly utilized for tourism development.

Thus, the study has proposed the better use of Melka Kunture prehistoric site. In its totality, Melka Kunture site contains several features and sites of high values. The site comprises of natural and semi-natural habitats. The site also includes some geological formations which hold artifact and fossil deposits of major importance from the scientific point of view, and represents one of the most important sites in the world in terms of providing proof of shared human and cultural developments which bind all people within a common humanity.

The cultural heritage of Melka Kunture is remarkable and has the potential to considerably facilitate major sustainable tourism development possibilities in the region. Above all, the potentiality mentioned here, reveals that, the above mentioned corridor, which is believed to be a one day tour give a chance for variety types of touristic interests.

In light of this study, the potential of the archaeological resource as a mechanism for development were explored and better practical and developed approaches for the archaeological site of Melka Kunture was proposed. This is an attempt to provide an essential scientific view for further steps, in the creation of focused plan in the area of development and lead to collaborations on sustainable tourism development.

1.4. Statement of the Problem:

Despite the potential of archaeological sites in Ethiopia and that of Melka Kunture in particular little research has been conducted to determine the sites potential, for sustainable tourism development.

As far as the researcher's knowledge is concerned; literature in the study area is scarce calling for an effort to identify the economic, social, cultural heritage related benefits of the archaeological site. As it is outlined in the above paragraph, most of the Ethiopian archaeological sites in general and Melka Kunture in particular were studied for scientific purposes. Nevertheless, our current state of knowledge led us that the archaeological and cultural sites did not serve beyond scientific. Thus, archaeological sites are expected to be tourist attraction sites and could help to elevate the economic benefits of the nation.

Archaeology can become a useful tool for sustainable development, but it requires new approach and methods of archaeological heritage management. Ethiopia has an enormous potential, to benefit from this nascent sector. So far, it is hard to say there was an integrated baseline survey conducted with regard to the share of archaeological resources into tourism development. The only exception on this conclusion is the pre historic site of Melka Kunture, for at least commencing the local museum and Open air site exhibits (ESTDP, 2004).

Prior studies on the Pre-historic archeological site of Melka Kunture have revealed that Melka has an enormous potential of cultural resources. In the past five decades of research works, various researchers in the field of paleontology and archaeology have testified that the site's cultural heritage significance would be of a world heritage status. Nevertheless, compared to the cultural resources and unique features of the site for tourism, the study so far is insufficient and magnifies only one aspect of the site and this has created a gap to deal with. Knowledge based promotion has never been previously carried out on this peculiar site. Melka has a potential to be one of the major tourist destination sites in the country, thus, in line with the above mentioned perspective conducting a study to assess the tourism potential of Melka Kunture is appealing and timely.

1.5. Objective of the study:

1.5.1. General Objective:

The general objective of the study was to understand and document the possible sustainable tourism potential development of Melka Kunture archaeological site.

1.5.2. Specific Objectives:

- Document potential sites of the study area for sustainable tourism development
- Examine possible opportunities for tourism development
- Demonstrate the importance of Melka Kunture Archaeological Site
- Support / Recommend the possible sites integration for further harmonies development (economic and social).

1.6. Research Questions

1. What are the possible tourism potentials of Melka Kunture archaeological site ?
2. What are the expected opportunities of Melka Kunture archaeological site in line with Other possible adjacent sites?

1.7. Methodology

In order to assess the tourism potential of the study area, qualitative data gathering and analysis method was employed for the validity and reliability of the collected data. This is due to the nature of the data collected to meet the objective of this study.

According to Kelly (2007) employing the qualitative data method is very suitable for researchers to approach both at the levels of individual and groups. Thus, my instruments for data gathering

were: interview, Questioners, Observation and Review of related literatures. Respondent views were gathered, analyzed, discussed and presented in tables and charts.

Accordingly, purposive sampling method (Sarantakos, 1988) is employed to select on most suitable stakeholders that are vital to meet the objective. The selection was mainly based on the knowledge, willingness, attachment to the site, awareness, availability, responsibility, rights and role of the respondent to the site. The group includes, Scientists, Tourism experts, Heritage Officials, Tourism Bureau Officials, Local and International Tourists, University students and community members. The role of each group is sole and irreplaceable to address the goals set.

When it comes to determining sample size of respondents; according to G.D. Isreal (1992), large size of respondents are mostly preferable, to gather reliable and sufficient data. However, depending on the group type and size and considering the limitation of time, finance and related resources, the aggregate number is purposefully fixed to be seventy.

Again in order to avoid gathering homogeneous data from groups such as community members ten from each group is considered to be fair.

When it comes to site selection it is determined as following. Though, about 65 archaeological and paleontological sites are identified for legislation purposes by the Oromiya Regional State, some of the sites are not currently active sites. On the other hand, depending on the wealth of heritages they provide only eleven sites are identified as core sites and described in the world heritage list.

Accordingly, in order to meet the objective of this study to incorporate all the discovered sites would be beyond the scope of the study.

Thus, once again based on purposive sampling method Sarantakos (1988) sampling technique was utilized to gain an appropriate sample size in this study.

From a frame of 65 sites recognized by Oromiaya tourism bureau for legislation at Melka Kunture ; in order to have representative picture of the study site, selection criteria were set upon **scientific importance**, **current position of the sites** and also, the selection had been contingent upon **sites heritage treasure** and **suitability for sustainable tourism development**.

Based on these facts, eleven sites were determined to be the focus of this study. Most of them consist, about four localities in average.

By applying simple calculations we can understand the study sample have covered the largest part of the study area which is able to represent the whole part.

Sampling representation

Sample population = 65 sites

Selected Sample sites = 11

Average localities each site consists = 4

Total number of localities = 4 x 11= 44, 65 – 44= 21

44x100/ 65= 67.69 % (size covered by the Sample)

21x100/65= 32.31 % (unrepresented part)

Therefore, the sample size has covered the large part of the study area which is possible to be considered as representative sampling.

On the other hand the non included part is only 32.31 % which is lesser and this part is the part indicated as buffer zone by other studies and this study as well did not believe it is suitable to the intended objective.

Therefore, the study while assessing the significance of Melka Kunture archaeological site for sustainable tourism development has focused on the eleven potential sites. The scientific contribution of the eleven sites is described below to show the potential of the site for sustainable tourism development.

1.7.1. Demographic Characteristics of the respondents selected from concerned stakeholders of various Organizations

S/No	Sex	Value	
		Frequency	Respondents value in percent (%)
1	Male	54	77.14
2	Female	16	22.86
	Age Groups distribution		
1	18 – 30	20	28.6
2	31 - 45	18	25.70
3	46- 50	15	21.42
4	50 - 60	10	14.28
5	> 60	7	10

Table 2: Age and Sex Distribution of the Respondents
(Source: Compiled From questionnaire)

The above table shows that all the respondents are capable of understanding the questionnaire.

No	Working experience	Respondent	
		Number	Respondents value in percent (%)
1	1-10	14	41.2
	11-20	14	41.2
	20 and above	6	17.6
	Total	*34*	*100*
2	Educational background		
	PHD	5	7.1
	MA degree	12	17.14
	BA degree	17	24.30
	Undergraduate level	20	28.60
	12^{th} complete	--	22.86
	Below 12	16	
	Total	*70*	*100*

Table 3: Experience and educational background of Respondents

(Source; Compiled from questioners)

This shows that majority of the respondents have well versed experience with heritage related professions.

1.7.2. Delimitation of the study

* Sufficient time, financial constraint to reach all the possible targets and dealing with different groups were the delimitations of this study.

1.7.3. Data Collection:

- **Pre- Field Data collection:**

  Documentary sources such as books, articles, Journals and unpublished materials were thoroughly consulted.

- **Field Data Collection Instruments :**

Survey: was conducted in all the localities of Melka Kunture to assess the Current status of the site and to observe the socio-economic potential of the same site**.**

Questioners: were prepared to gather data from the selected informants. Respondents were grouped in different categories depending on their attachment to the study site. Due to this, the contents of the questioners were variable. Some were open ended and others were closed ended. The questioners were in English and were dispatched to the experts and officials who have the capacity to understand and respond.

Interview: The target population of this study were grouped separately according to their awareness, and semi structured and structured interviews conducted.

1.7.4. Data Analysis techniques:

1.7.4.1.. Qualitative Data

Qualitative research explores attitudes, behavior and experiences through different methods. It attempts to get an in-depth opinion from participants (Dawson (2007). Hence, the analysis

Includes books articles journal, published and unpublished sources. The qualitative data is also properly analyzed and interpreted in order to get the interest of diversified groups about the significance of Melka Kunture for sustainable tourism development .

1.8. Significance of the Study:

This research is significant as an eye opening that proposes integrated plan of archaeological sites research with the sustainable tourism development endeavor in the country. The final result of this study would trigger concerned individuals and institutions to better understand the potential of the site for development.

1.9. Scope of the Study: The scope of this study is limited to Melka Kunture prehistoric sites and its buffer zones.

1.10. Organization of the Thesis:

This thesis is organized in Four chapters: Chapter one: deals with, Background of the study, Statement of the problem, Objectives, Methodology, Significance and Scope of the study. Chapter Two: is about Review of Related Literatures. Chapter Three: disclose Data Presentation Chapter Four comprises, Discussion and recommendations of the study.

CHAPTER TWO

REVIEW OF RELATED LITERATURES

2.1. History of Archaeological Research and Major Discoveries from Melka Kunture Prehistoric site

Melka Kunture is one of the sites which is located in the main Rift valley along with other sites including (Konso-Gardula, Gademotta, Gadeb, and Kesem-Kebena), which form the main Ethiopian Rift and the Afar Rift i.e. (Middle Awash, Gona, and Hadar). From the most known, in the upper Awash basin Gadeb and Melka Kunture are sited on the central sector of the Main Ethiopian Rift. The main volcanic centers are Wachacha and Furi in the North, Boti and Agoiabi in the south (WoldeGabriel *et al*.1991; Delson et al. *2000*).

The first written record Melka Kunture was mentioned is in 1931, when Father Azais reported his survey between Addis Ababa and Butajera (Azais and Chabard,1931).

Following his report, in 1963 Gerard Dekker, a hydrologist from the Netherlands, discovered one of the localities of the prehistoric site of Melka Kunture, the 'Kella locality', which means ''Custom'' in Afan Oromo language. Dekker visited the site of Melka Kunture, and confirmed the importance of the site (Chvaillon and Piperno, 2004).

In 1964 Gérard Bailloud, a specialist of the French and European Neolithic, understood that Dekker's discovery was unprecedented. Therefore, he left his plan to undertake investigation around Harar and organized the first archaeological survey at Melak Kunture and collected

several thousands of surface finds. Furthermore, he was able to discover the Gombore locality now called Gombore II and the the localty of Garba I (Gallotti,2013).

From 1965 to 1995, an excavation at Melka Kunture was led by Jean Chavaillon. He recorded, stone tools of Oldowan to the Late Stone Age. During this period, excavations were carried out at Karre I, Gombore I, Garba IV, Garba XII, Simbiro III, Gombore II , Garba I, Garba III , Wofi, Kella, and documenting the evidence of lithic tools dating from the Oldwan to historic times (*Chavaillon et al.2002*).

In 1973, Soulier, made the first study on the obsidian outcrops at Balchit (Soulier, 1976). He collected many obsidian samples from the same locality that indicated extensive distribution of obsidian in the area and the utilization by early humans. Obsidian is a large component of some lithic assemblages discovered in the localities of Melka Kunture. He made preliminary analysis on obsidian artifacts of Late Stone Age assemblages from the locality Wolfi III (Hivernel, 1976). Balchit is located more or less 10km far from Melka Kunture with an elevation of 2140 meter above sea level. The archaeological importance of these localities was already established by the excavation undertaken at Gombore I (B-E) that resulted with the discovery of Faunal remains, well preserved, Oldowan and Acheulian tools (Berthelet et al.2001).

It was in 1995 that the first Italian archaeological mission at Melka Kunture performed a major research activity. by Grazia Maria Bulgarelli, Rosalia Gallotti, Carmine Collina and Carmen Santagata, where they documented faunal remains and lithic assemblages.
Furthermore they also conducted detail study of typology and technology of lithic artifacts (Chavaillon and Piperno 2004).

The second Italian archaeological mission was carried out in January 2000, where the last analysis of Oldowan sites and the production of a Melka monograph was a major result of it. Furthermore, it was in 2000 that Bulgarelli and Piperno published a small Book which includes several professional photographs which illustrate about lithic assemblages and faunal remains which was taken by Lorenzo De Masi (Bulgarelli and Piperno 2000).

A Guide book in four different languages was published which illustrate about the past and the present archeological and paleontological presence of Melka Kunture which could be considered as the 1st dedicated Italian archaeological mission at Melka Kunture. Further more in this publication they emphasized about the arrangement of archeological levels and faunal assemblages (Berthelet et al. 2001).

D' Andrea *et al. (2002*) have studied about taphonomic process using modern special techniques which is primarily focused on intra site GIs application for the Developed Oldowan site of Garba IV. They provide a detail analysis using typological overlay by developing tables in order to know how many objects are found in a certain grid. They also used different maps from previous studies which were employed for locating the exact size of the grid square.

The outcome of this study was quite interesting the faunal and lithic assemblages are highly converged in the eastern part of the excavation. In addition the lithic assemblages of the site are characterized by large blocks of basaltic and ignimbrite features where the faunal elements and the lithic assemblages fit together.

There are two major activities which are undertaken by the Italian archaeological mission at Melka Kunture, these are , Open Air Museum Project and the GIS application to the study of the Oldowan sites. The Open Air Museum Project was realized in 2001 and restored in 2003 by the

financial support of Italian Ministry of Foreign Affairs, the University of Naples and the ISIAO, (Istituto Italiano per l'Africa e l'Oriente) It was the first Open Air Museum in the history of Ethiopia (Galloti et al. (2003)

Furthermore, in 2004 Chavaillon and Piperno published a monograph entitled *"Studies on the Early Paleolithic site of Melka Kunture, Ethiopia''.* Since 2006 new successive researches have been carried out every year by the Italian and the French Team. Moreover, in the same year, the construction of the new museum at Melka Kunture was completed *(* Berthelet et al.2001).

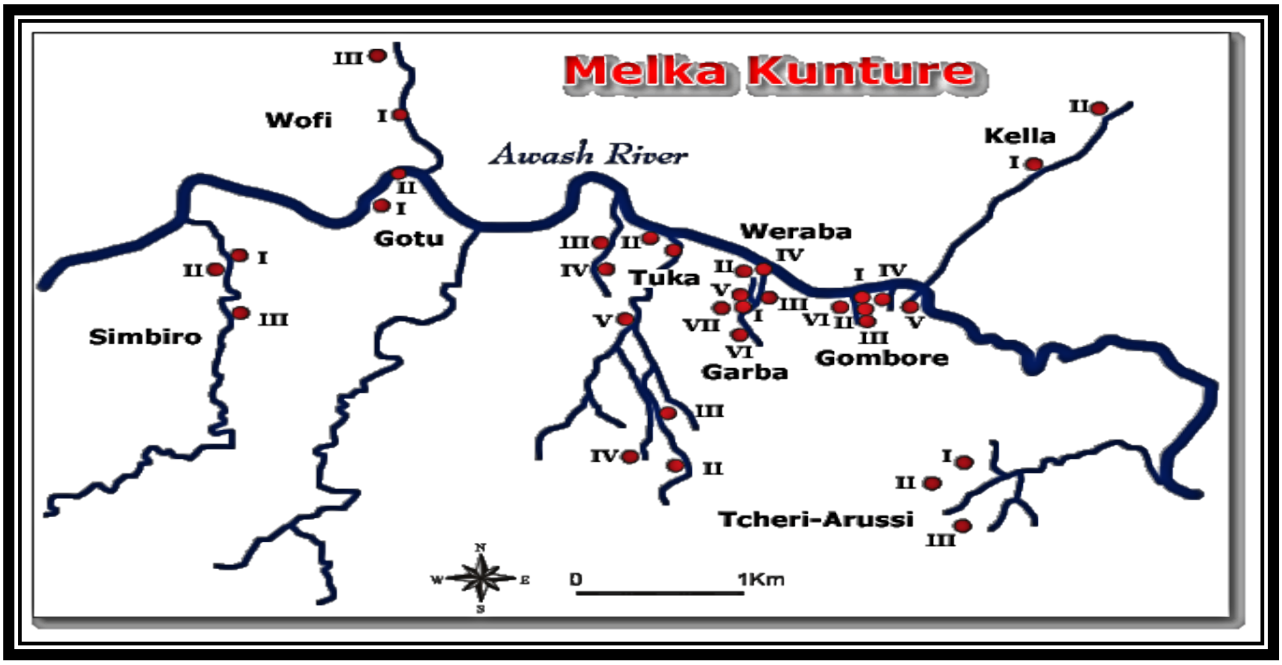

Fig 5 : Map of the northeastern Melka Kunture localities (after Piperno 2004)

2.2. The paleontological Resources of Melka Kunture site:

As mentioned in chapter one, this study has determined to focus on the eleven core sites (that consist four/three localities). The sites are described below in short :

2.2.1. BALCHIT:

Balchit is a local term for the shiny and glassy volcanic rock otherwise known as obsidian. This locality is formed by a dome-flow of obsidian and the site covers the outcrops over an area of 4 km^2. Balchit is located 7 km north of the modern course of the Awash River. The primary obsidian source included within volcanic sediments is visible in several outcrops along minor river gullies. The high-quality Balchit obsidian has been extensively used for knapping since Oldowan stone tool industries were produced, 1.7 million years ago.

As far as obsidian raw material procurement is concerned, although the primary source was the Balchit dome-flow, other secondary accumulations of obsidian pebbles occur throughout the archaeological area, and were utilized during the Lower and Middle Pleistocene. Obsidian pebbles resulted from erosion and other processes which led to the widespread dispersal of the raw material far beyond the original outcrops. One of the most important characteristics of the Balchit site is its enduring significance to local prehistoric populations and to later populations. Evidence demonstrates that the site was exploited and quarried as a primary source from prehistoric to historic periods.

An outstanding characteristic of the site is that the landscape is covered by extensive flaking areas exhibiting cores, flakes, blades and debris, scattered over thousands of square meters. There are three types of concentrations of obsidian debris and artifacts in the Balchit locality.

The first concentration is up to 60 m long and 50 cm deep, the second up to 10m long and 1m deep; and the third more limited to modern pit-like depressions of anthropic origin, excavated to reach the ground water table and successively filled with obsidian waste. The accumulations of obsidian artifacts, debris and debitage at various levels of operational sequences belonging to

different periods (at least from the Late Stone Age to modern times) include large blades, flakes and pyramidal or prismatic cores.

The result of this study showed that there were four structural types of obsidians at Melka Kunture in the prehistoric era which was a direct input for hominids to produce lithic artifacts (soulier 1976; Poupeau *et al.* 2004).

To sum up, non of the studies conducted at Balchit so far, include attempts to conserve or sustainably develop the site for tourism. Had it been possible to study the site from tourism development perspective, this world class site would have been conserved and exploited tremendously benefiting the surrounding community by creating better jobs , renewing the path to the site , reinforcing the security, training guides and promoters.

There were possibilities to effectively promote this unique site as the world's huge accumulation of obsidian and divert tourist attentions for mutual benefit. Such backlog is what this study identified and proposed for integrated efforts.

2.2.2. SIMBIRO GULLY

Simbiro is a gully on the right bank of the Awash River, which extends across a distance of 1.5 km. There are 15 natural sections that exhibit acheulean lithic industry tools and fossil bones.

From the extended natural sections aforementioned, the site known as Simbiro III is the most impressive. It is capped by a volcanic tuff which was deposited more than 900,000 years ago. This is the only site that has been excavated in the gully, and was first tested in 1973. The test excavation was excavated because of the presence of an eroded and fragmented Pelorovis skull. This was an exceptional paleontological find representing an ungulate with a horn span estimated to 2m. The same layer, Level B, also yielded tools of the Acheulean industry.

More excavations were undertaken during three seasons between 1974 and 1976, and again in 2005. However, to preserve the stability of the natural section which approaches 8m in height, the excavation unit was not extended. The two main archaeological levels are Level B and Level C. Level C partially merges with Level D close to the base of the sequence. Of these two levels Level B contains the richest archaeological record so far retrieved from Simbiro III. The recovered materials include 769 lithic artifacts and 54 faunal remains. In contrast, the remains at Level C were impressive due to the fact that the constituents were hand axes, cores and flakes almost exclusively made in obsidian and fully exposed in the natural section of the gully.

Overall, the assemblages at the site, including the various levels, consist of Acheulean stone implements such as bifaces, cleavers, unmodified as well as retouched tools, while the fauna includes *Hippopotamus,* Equidae, Bovidae and antelopes. The raw materials that were procured for tool making included obsidian and a variety of volcanic rocks. The study here as described above has exhibited 15 natural sections of acheulean lithic industry tools and fossil bones. No integrated effort was done to develop and promote the site in sustainable way for beneficiary activities.

2.2.3. GOMBORE GULLY:

The gully that is designated as Gombore can be sub-divided into Gombore I, Gombore Iγ, Gombore II (Gombore II-1, Gombore II-3, Gombore II-4, Gombore II-5 and Gombore OAM) and Gombore II-2 close to the top. These archaeological sites are spread over a distance of a few hundred meters and contain materials dating over a 1 million year period, from c. 1.7 to 0.7 million years ago. The Gombore I site was discovered on the right bank of the Awash, and soon a test excavation was completed and then excavations were carried out over c. 230m^2 area.

The result of the excavations has provided important paleo-climatic information. The lowermost part of the archaeological sequence is flooded, except in dry years when the river is at its lowest, and because of this layers C and D were only reached by test excavations.

Although the dating attempt using argon ($^{40}Ar/^{39}Ar$) provided results with a high statistical margin of uncertainty, the tuff is definitely much older than 1 million years, in accordance with the reversed polarity of this part of the stratigraphy, corresponding in turn to part of the Matuyama Chron between c. 1.78-1 million years.

The Oldowan assemblage of Layer B3 was published together with the assemblage of B2. Of the more than 20,000 archaeological items which were excavated, half are lithic artifacts. Obsidian represents a major component of the assemblages (31.5% in Layer B2). The faunal remains are very fragmented. Several faunal specimens, despite their fragmented nature, were identified to family or species level, including hippopotamus (*Hippopotamus amphibius*) and suids (*Metridiochoerus* and *Kolpochoerus*).

There are also some remains of giraffe. Elephants (*Elephas recki*) and crocodiles are very rare. Bovids are abundant (*Connochaetes* cf. *gentryi* and *Damaliscus*) and equids are represented by *Hipparion.* A left distal humerus of *Homo erectus s.l.* was discovered in 1976 in Layer B2.

Based on palynological analysis performed on several samples, including a sample from Layer C, the grasses (61%) are dominant in the herbaceous component, but there is also a high proportion of arboreal pollen (29%) shared between the two most common trees from highlands forests, *Podocarpus* and *Juniperus*.

As evidenced in the composite pollen spectrum from Layer B where the percentage of arboreal pollen reaches 27% including abundant *Juniperus* pollen associated with *Podocarpus, Olea,*

Polyscias, Hypericum and *Myrica*, the vegetation of the time was grassland, with a forested environment close by. Such an association between bushland and forest can be found in a dry conifer forest at higher elevation, an environment which is not far from the site. The proximity of one to another was confirmed by the recovery in Layer B2 of a liana fragment identified as Caesalpinioxylon.

The forest had a similar composition to that of the modern Managasha forest at 2500-3000 m asl on the northern slopes of Wechacha mountain. Thus, a *Juniper* forest of the "Dry evergreen Afro-montane forest and grassland complex" was at that time nearer to the site and more extensive than today. The site of Gombore Iγ was discovered in 1973. It is located higher up in the stratigraphy and is included within the same depositional sequence as Gombore IB. In all, there were three excavation seasons completed in 1974, 1976, and 1978 and 22 sq. m were investigated. These excavations exposed a single archaeological layer.Above Gombore Iγ, a tuff has been dated to 1.2 million years. An age in excess of 1 million years is confirmed by a magnetostratigraphic study which identifies the Jaramillo geomagnetic reversal, dating back to c. 1 million years, in the upper part of the section. Of the objects retrieved, the most important ones were 2000 lithic and bone finds.

The lithic assemblage includes a large number of hammer stones and broken pebbles. They were all made from volcanic rock, and obsidian tools dominate the stone tool assemblage.

There is a predominance of bifacial choppers, while in limited numbers polyhedrons and heavy end-scrapers are present. There is a significant quantity of cores and débitage material with a wide variety of core types and numerous flakes.

An abundance of well-preserved faunal remains including Artiodactyl fragments were recovered. Similar to most sites in Melka Kunture, there is a high percentage of hippopotamus bones e.g.,

.*Hippopotamus amphibious*. Other faunal remains include *Metridiochoerus*, *Sivatherium* (*Libytherium*) *maurusium*, and a type of large giraffe, *Redunca*, Hippotragini and *Gazella*. Alcelaphini are rare,compared to the relative abundance of Equidae. The site of Gombore II, which includes two archaeological stratigraphic units, is also exposed within the Gombore gully.

These excavations were conducted at Gombore II-1, Gombore II-3, Gombore II-4 and Gombore II-5. The sites were all within a few meters of each other. In 2001, further excavations were undertaken with the aim of exposing an archaeological surface for permanent display to the general public, a so-called "open air museum" or Gombore Open Air Museum, at compounded excavated surface of c. 140 sq. m. Except for the Gombore Open Air Museum, the recovered assemblages consist of 1,753 lithic artifacts dating to the Middle Acheulean. They are rich in bifaces and cleavers, made from various volcanic rocks.

The faunal remains include bovids, giraffes, hippos, suids and equids. In contrast, at the Gombore Open Air Museum, archaeological materials totaling 1,148 lithic artefacts and 896

faunal remains were left *in situ* for display. Most of the bifaces were produced on microdoleritic basalts, whose primary sources are found at a distance of c.15-20 km. At this site, a unique aspect is the production of small bifaces, which without exception are in obsidian, with a single, continuous sinusoidal edge over the entire margin. The conceptual scheme is totally different from the usual bifaces, which as a rule have two lateral edges converging to an extremity.
These so-called 'twisted' bifaces have never been discovered in stratigraphic context elsewhere in Africa, nor at other sites in Melka Kunture.

One of the factors that make the Gombore II fauna differ (biochronologically speaking) from those of earlier sites of Melka Kunture was in the replacement of a brachyodont hippo by a

hypsodont form more similar to the modern species. The other is in the replacement of a slender-horned wildebeest by the modern *Connochaetes taurinus*. The persistence of the primitive equid *Hipparion*, of which Gombore II is one of the latest known occurrences, is a noticeable archaic feature of this fauna. Ecologically, the fauna is similar to those of the earlier sites of Melka Kunture, with the predominance of grazing hippos and of Alcelaphini (*Connochaetes*, *Damaliscus*) among bovids, indicating open environments. However, there are also some remains of Reduncini (*Kobus*), which suggest the occurrence of wet grasslands.

The presence of *Diceros* (black rhino) also speaks against a pure dry environment. The site has also yielded two human fossils, both of them attributed to *Homo erectus s.l.:* a fragment of the left parietal and a fragment of frontal bone. The Gombore II-2 site, also known as the "Butchery site" is later in age and lies higher up in Gombore gully profile. It is also located 30m south of Gombore II Open Air Museum. The Gombore II-2 "butchery site'' was first tested in 1974, and later excavated in 1993 and 1995. The site was interpreted as a hippopotamus butchering site because of the fragmentary remains of two individuals, found associated with lithic artifacts.

The tools which were used for butchering are acheulian bifaces with two cutting edges. The bifaces are dominantly made of obsidian.

Research was recommenced in 2011 and so far, some 50 sq m have been investigated. Some of the archaeological and paleontological remains were discovered within a volcanic tuff dated to 700,000 year ago by $^{40}Ar/^{39}Ar$. During the latest field season researchers discovered a virgin surface sealed by the tuff, with scores of animal footprints, belonging to variously sized herbivores and to pachyderms.

This evidence suggests the presence of a much more varied fauna than evidenced by fossil bones alone which were comprised only of *Hippopotamus* and Equidae. As for the lithics, they belong to the Middle Acheulean period and include a few bifacial tools in volcanic rocks, together with hundreds of flakes, many of which are of obsidian.

As described above almost all the research results at this site were focused on uncovering fauna and flora evidences dated to million of years back. However, relatively Gombore is the only site that an attempt was realized to utilize the site for tourism purpose. Even though, it still requires further integrated effort and promotion for sustainable tourism development, the effort to establish the Open Air Museum and the Butchery site is great. It also proves the only value of archaeological sites is not providing scientific evidence but have economic and social values.

2.2.4. GARBA GULLY

The Garba Gully branches into two sections. Hominin activities contained in different contexts cover a period of more from than 1.7 million years ago, to c. 200.000 years ago. The following sites are described in terms of their discovery from earliest to most recent. On the right bank of the Awash River at the outlet of the Garba gully is situated Garba IV.

Important evidence obtained from palynological investigation at Garba has increased our understanding of the nature of vegetation cover during the occupation of unit D. In this regard, the abundance of grass pollen (86%) indicates high-elevation grassland with a high diversity of Asteraceae and *Plantago*. In addition, isolated trees of *Podocarpus* occurred far away from the site. Five archaeological layers were identified and excavated named as D, E, H, I and J, from top to bottomw. Flake production is rather standardized and flake artifacts are relatively numerous, with an abundance of side scrapers. In Layer H, the lithic production became increasingly refined and flakes are thinner and flatter.A large basalt cleaver fully corresponds

with the morphological and technical standards of the Middle Acheulean cleavers. Layer D has many basalt as well as obsidian flakes, often retouched.

Stratigraphically speaking Level B is situated below a tuff unit dated by $^{40}Ar/^{39}Ar$ to about 870,000 years ago, and immediately above a tuff unit similarly dated to about one million years ago. Thus, the date of Level B is pointing to an age of 900,000 years ago for this archaeological occurrence. With regard to assemblages, Level B has yielded 176 lithic artefacts of the Middle Acheulean and 25 faunal remains.

Systematic raw material procurements that points to two types of volcanic rocks with different knapping properties i.e., aphyric rocks for small flakes, obsidian and porphyritic rocks for bifaces and cleavers. In the alluvial deposits there is an abundance of small cobbles and pebbles. However, there was a dearth of large blocks suitable to produce large flakes to be shaped in turn into bifaces and cleavers. Consequently, it is assumed that most of the large blanks were obtained elsewhere, at a distance from the site.

The faunal remains are fragmented; many of them are probably of hippos (the animals most frequently attested to among the few identifiable specimens). Equid, bovid and alcelaphin remains were also identified. After several indicators, the hominids settled in the dry abandoned channel of a seasonal meandering braided fluvial system.

The sedimentary facies and the position of the artifacts indicate semi-arid conditions, which is consistent with a mammalian fauna dominated by grazers. The hippos provide evidence that permanent humid areas were also preserved.

The stratigraphy at Garba I can be summarized as follows: at the base, a sequence of volcanic layers is sealed by fluvial deposits; the overlapping laminated fluvial deposits of sand and

gravels are in turn capped by a crust of sandy concretions; the upper part of the sandy crust is mixed with clay with unsorted volcanic ash inclusions; within the sandy crust, the lower archaeological level, Level C, is separated by some 20cm of sands and gravels from Layer B, the main and uppermost archaeological layer.

The two layers are close in age to each other and the finds will be described simultaneously. The site has not been dated in radiometric. The typological analysis allows assessing that it is a typical Upper Acheulean of the highlands of East Africa and the Rift Valley, an assemblage closely comparable to those Isenya and Olorgesailie in Kenya, with numerous handaxes and cleavers, technically refined to the point of being morphologically monotonous. Circumstantial evidence suggests and age between 600.000 and 400.000 years ago.

Some 10,000 implements and faunal remains have been inventoried, including a high proportion of handaxes and cleavers. Most of the handaxes and cleavers, as well as the bolas, which also characterize the assemblage, are in volcanic rock (basalt, trachyte and rhyolite), but obsidian handaxes also occur. There is a high percentage of notches and denticulates, together with scrapers. Some possible evidence of the use of fire is a burnt pebble which, after analysis, was exposed to a temperature of about 400°.

The area was re-investigated in 2011, with geological trenches allowing re-assessing the stratigraphic sequence, and the provenience of the Early Middle Stone Age implements.

The remains of the original deposit were available for excavation at some distance from each previously excavated unit. Therefore, the stratigraphic succession happens to be slightly different from one section to another. The compounded sequence is some 5 m deep. The lowermost archaeological layer, Level ‘E’, yielded implements of the Middle/Upper Acheulean. It is capped

by clays and a volcanic tuff, followed by a rather poorly defined Acheulean layer, Level E and, in turn, by Level D, where palaeontological remains only were discovered. Level C, a Late Acheulean layer is overlain by Level B and A, with abundant Early Middle Stone Age lithics. After the most recent study of the area, the last two levels are now described as Unit III, with former Level C at the base. After the lowermost part of Unit III (Sub-Unit IIIa) had been deposited, a ferruginous horizon developed, approaching an iron crust, the result of pedogenetic processes which are indicative of a warm and humid climate.

After a phase of erosion, Sub-Unit IIIb in turn was deposited, and similarly underwent pedogenesis. This happened when the climate was seasonally warm, but the process was less intense than when the paleosol of Sub-Unit IIIa had developed. Chronological assessment has been from circumstantial evidence and typological analysis, and it points to an age not later than the Last Interglacial, i.e., not later than 130,000 years ago, for Sub-Unit IIIa and its lithic industry.

Over 2000 elements constitute the recovered stone tool inventory from Level B. Regarding to raw material choice; obsidian is by far the most frequently knapped raw material, with some evidence of the use of flint and of volcanic rocks. In terms of size, small obsidian pebbles were mostly flaked. The recurrent Levallois flaking method, centripetal and unipolar, was well established.

Most of the retouched tools are denticulate, but there are also some points, including Levallois points, which are a diagnostic marker of the Middle Stone Age. Miniature bifaces were also produced in small numbers, pointing specifically to an Early Middle Stone Age.

There are several faunal remains, mostly undeterminable fragments which were eroded from upstream and eventually re-deposited at Garba III, becoming incorporated into the former Level B. Amongst these, teeth, and many fragments of hippo enamel, also occur. A large giraffe, at least five bovid species (a bovine, two alcelaphines, a reduncine, and an antilopine), were identified, as well as a few *Equus* remains.

Three fragments of *Homo sapiens* skull were discovered in former Level B, namely at the base of the layer. Garba III is one of a very few sites, all of them in East Africa, where *Homo sapiens* remains pre-dating the Last Interglacial have been discovered, allowing to assess that the Early Middle Stone Age was produced by human groups of the same species as ourselves.

Within the Buffer zone, there are very important sites that can be considered as a real asset for archaeological site candidature. Sites like Wofi (Adjacent to Atebella) and the Kella gully are repositories of the stone ages cultures for the future generations and for future research.

Lastly, as clearly indicated above due to the study conducted at Garba Gully for consecutive years it was possible to collect important paleontological evidences that has increased our understanding of human evolution. Moreover, by excavations at this same site, five archaeological layers were identified and from top to bottom Acheulean, choppers and hand axes were frequent. So many significant evidences were uncovered that the records proved the critical transition from Oldowan to Early Acheulean.

Though, it is believed that the site has served its purpose abundantly, it is possible to further utilize it for all rounded benefit. Non of the related literatures showed , there had been an attempt to sustainably develop the sites for further use or tourism consumptions. This study believes there is possibility to integrate such sites with educational tourism activities and make use of it.

2.2.5. Kella

Kella is situated adjacent to a dry river channel. The name Kella is derived from one of the left-hand tributaries of the Awash River. The central area of the site has an elevation of 2005 meters asl and with a GPS coordinate of 0457192 Northing and 0963232 Easting. Volcanic ash sediment covers most part of this site. Currently, at Kella I, stone tools and pebbles are still observed scattered all over the site.

The site of Kella I was prospected and excavated on 1965 by Jean Chavaillon. A second excavation at the same site was carried out on 1970 by F. Hivernel. Kella is also the first site discovered by G. Dekker in 1963 and initially prospected by G. Bailloud. Kella I is located on the right bank of a tributary of the Awash whose seasonal waters join the Awash at the ford of Melka Kunture. A high number of hand-axes, cleavers and other Acheulian pebble and flake tools were recovered from this area. No Middle Stone Age tools were reported so far from Kella. Kella is an ancient Late Stone Age locality until now known at Melka Kunture (Chavaillon and Piperno, 2004).

The lithic industry, here, is characterized by numerous blades and bladelets, different kinds of burins and backed knives of Upper Paleolithic type, notched and denticulates, borers, side-scrapers and small choppers. The Later Stone Age technology of Kella is dated between 20,000 and 4,000 years B.P. (Mekonnen, 1984).

Same is true to this site all the studies since its discovery are focused to gathering scientific information. No attempt is seen at all to sustainably develop the site for further and beneficiary use .

2.2.6.Wofi :

This Melka Kunture deposit lays some three kilometers upslope from the Gombore and Garba sites. It is located at the mouth of a small tributary that runs into the left bank of the Awash River. The Wofi sites were discovered during a survey supervised by J. Chavaillon. Research at the Wofi III site was handled by F. Hivernel. Wofi II was studied by Makonnen Abye (1983-1984). Wofi II and III are both geologically and typologically very similar. Archaeologically, they can be dated to the Late Stone Age.

The predominant type of raw material found on site is alkaline obsidian. This obsidian is rich in barium, but has a poor zirconium. The Wofi obsidian is similar to that of Balchit, and may well be the same as that from Kella and Gombore IA.

At the terminal spot of the Wofi gully, there is also the so-called “Lake of Lava”, a major geologic feature which can be an attraction for professional tourists and utilized in sustainable manner to generate revenue.

2.2.7. SIMBIRO GULLY

Simbiro is a gully on the right bank of the Awash River, which extends across a distance of 1.5 km. There are 15 natural sections that exhibit Acheulean lithic industry tools and fossil bones.

The site known as Simbiro III is the most impressive. It is capped by a volcanic tuff which was deposited more than 900,000 years ago.

This is the only site that has been excavated in the gully, and was first tested in 1973. The test excavation was excavated because of the presence of an eroded and fragmented Pelorovis skull. This was an exceptional paleontological find representing an ungulate with a horn span estimated to 2m. The same layer, Level B, also yielded tools of the Acheulean industry.

However, to preserve the stability of the natural section which approaches 8m in height, the excavation unit was not extended. The two main archaeological levels are Level B and Level C. Level C partially merges with Level D close to the base of the sequence. Of these two levels Level B contains the richest archaeological record so far retrieved from Simbiro III. The recovered materials include 769 lithic artifacts and 54 faunal remains.

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Overall, the assemblages at the site, including the various levels, consist of Acheulean stone implements such as bifaces, cleavers, unmodified as well as retouched tools, while the fauna includes *Hippopotamus*, Equidae, Bovidae and antelopes. The raw materials that were procured for tool making included obsidian and a variety of volcanic rocks.

2.3.Sustainable Development

Although many definitions abound, the most often used definition of sustainable development is that proposed by the, Brundt land Commission**;** ‘’ Sustainability is Environmental, economic and social well being for today and tomorrow’’ **(**Dernbach J. C., 1998) **.**

This broad definition, which is used in this study, does not limit the scope of sustainability. The explanation does, however, touch on the importance of intergenerational equity. This concept of conserving resources for future generations is one of the major features that distinguish sustainable development policy from traditional environmental policy.

The overall goal of sustainable development is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision making process (Hicks 1946).

2.3.1. Sustainable Tourism Development:

Tourism is a domain of diverse and dynamic sets of stakeholders involved at different levels. The stakeholders are mostly within private and public groups though there are civil society groups and networks of academics at all levels of engagements. The most powerful groups in tourism business are the multinationals operating at the global level and working in channel marketing. Likewise, tourism is a wider area of conflict and contention at all levels of international, national, and local responsibilities in terms of benefit, concerns and priorities. The conflict of interests and responsibilities are commonly manifested in, an absence of community engagement in tourism business operation considering tourism business as a domain of special elite and interest groups. An absence of shared responsibility in terms of tourism resources base conservation and lack of concern for local cultural landscape integrity and priorities in relation to sustainability ,utilization and utilization and protection balances.(Chernet T.2010)

resource mobilization in tourism is non consumptive and does not involve extraction of natural and cultural resources; while other sectors may be more exploitative and more distractive ,the balance in the conservation of the resource bases must be maintained. The resource of tourism is also the resource of other sectors. The difference lies in the nature of resource mobilization and the question of being consumptive versus non consumptive.

Tourism is emerging as a leading global economic driver for the 21stc. It is among the economic and social sectors that are registering rapid growth in the world, and nowadays, it has been found to be making its contribution in supporting and accelerating national development. Tourism

makes a tremendous contribution serving as a source of foreign exchange, promoting micro and small-scale enterprises, creating employment opportunities, and ensuring sustainable development. Above and beyond its economic advantages, tourism promotes better and reciprocal understanding and closer relations among peoples, thereby fostering a culture of peaceful coexistence and mutual respect[i].

Ethiopia has a long way to go to benefit from tourism. For instance, according to World Tourism and Travel Council (WTTC) and Word Tourism Organization (WTO) (2002), the share of Ethiopia from tourism sector was just less than a miniscule.

Despite the current realty, Ethiopia hosts multiple tourist attractions and a visitor friendly people. In this regard as stated on monthly published magazines of Authority for Research and Conservation of Cultural Heritages (2013), the United Nations Educational Scientific Cultural Organization (UNESCO) has so far recognized ten national attractions as world heritages.

These includes: Aksum Oblisks, the Rock-Hewn Churches of Lalibela, the Castles of Gondar, the Lower Awash Valley, Tiya Stelae, Semien Mountains National Park, the walled City of Harar, the Lower Omo Valley, Konso Cultural Landscape and the celebration of True-Cross (Meskel). Such immense potentials encouraged Ethiopia to launch tourism as an important development sector.

Among the main principles of sustainable tourism

1. Protecting
2. Maintaining and Enhancing Tourism resources while utilizing the resources for development without compromising the interest of all stakeholders both the present and

future generation. Tourism sustainable Development is an interaction between the visitors and the industry that serves them and the community that hosts them and the site that the interaction take place . Among the principles of responsible Tourism Development ;

Environmental Guide lines , Social Guide lines, Economic Guide lines and Integrated planning that encompasses the three basic factors and tools for managing resources are the major ones.

Through the improvement of public curiosity in the human history of earlier experiences, archaeology has come to play an increasingly more important role in cultural resource inventory and management. Features once considered human intrusions on archaeological sites are gradually being recognized as resources which may provide considerable information concerning the history and evolution of certain cultural experiences. These features also contribute to the chronicle of our attitudes toward conservation, preservation, and the exploitation of natural resources (Leah E.,Morgan.P.,Renne 2012)

Despite a growing body of literature on cultural heritage management since the early 1980s (Cleere, 1989; Feilden & Jokilehto, 1998; Hall & McArthur, 1998; Pearson & Sullivan, 1995), there are very limited references to the contribution of cultural heritage to social and economic development.

Overall, the economics of historic preservation remain understudied area (Mason, 2005), while the socio-economic and regional development benefits of archaeology are even less well researched. At the same time there has been a recognizable shift in the way cultural heritage is funded, with a growing emphasis on social and economic development.

The recognition that cultural heritage can contribute to regional development was a major shift for World Bank policy in the 1990s. This link is often made with tourism, as frequently demonstrated in World Bank, (UNWTO, 2009), or other donor agency reports and tenders.

Archaeology can become a useful tool for sustainable development, but to make it possible it is necessary to reformulate strategies and modalities of archaeological heritage management. This study presents the case of the pre historic site of Melka Kunture .

The overall goal of sustainable development (SD) is the long-term stability of the economy and environment; this is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision making process. The ‘measurement’ of the direct economic benefits of cultural

Sustainable Archaeology operates under the following mission statement: "Sustainable Archaeology is dedicated to advancing a transformative practice of archaeology that integrates the many forms of the discipline – commercial, academic, vocational by consolidating the extensively recovered archaeological record and converting that material and contextual data into broadly accessible digital information, to allow for ongoing and innovative research that engages with this compiled and rich archaeological heritage left by the countless previous generations of those who loved, lived, and died in this place, and by all those today who draw connections, meaning, value, and identity from the human heritage of this place." ‘’Sustainable Archaeology is an inter-institutional collaborative research initiative.

2.3.2 Demonstration of Review of Related Literatures :

As the above literature shows, for the past five decades many researchers were involved in the archeological mission at Melka Kunture and have conducted a number of scientific studies.

For simplicity we have to see the results of the previous studies , in order to observe the unaddressed gap.

For instance, the 1964 study by geologist R.W. Seymour from Addis Ababa University in collaboration with Kenyan scientists Mary Leakey and Glyn Isaac was the first geological study as stated by (Chavaillon *et al.2004).*

Again , in 1966 a French geologist M. Taieb appeared at the site to study and compose a thesis on the Quaternary geology of the Awash valley. During his study Taieb identified several archaeological and geologic localities. (Taieb1974)

Gérard Bailloud for the first time in 1966 performed the first survey, where he discovered the Acheulean site and published his research results in a journal called *Cahiers* (Abay 1988; Haile selassie *et al.*1990). Almost all the 1960 studies focus were to uncover the geological formation of Melka Kunture.

Following this, the paleontological studies at Melka Kunture goes back to the early 1960s where many fossilized remains were uncovered by the direction of J. Chavaillon (1979). Since the early 1960s many paleontologists were getting involved in the archaeological mission at Melka Kunture mainly with special focus on the hominid remains (Chavaillon and Piperno 2004).

The site is said to be very rich in faunal remains where the remains of hippo, elephant, antelope, horse, and pig were evidenced which is a direct proof about the nutrition of Homo habits and Homo erectus (Berthelet *et al.* 2001).

the paleontological study revealed, high frequency of Hippo potamus amphibious, Sodus Bovid, Equids have been uncovered. Biological evolution evidence ,together with cultural ,has been discovered within different localities of Melka Kunture, all belonging to the genus Homo according to Coppens (2004).

Due to studies based on Paleolithic archaeology, significant data was recovered, most of the study on the lithic industry of different Level were studied. Débitage and tools on flake, tools on pebble and percussion material, were also studied by Marcello Piperno and his colleagues (Marcello Piperno *et al.* 2004).

The rest of the studies: GIS and intra-site spatial analysis on the site of Garba IV were studied by Andrea D'Andrea *et al*., Spatial analysis of the lithic material from Level D were investigated by Rosalia Gallotti from Italy.

In its totality, it is possible to conclude that the study conducted at Melka Kunture archaeological site for over fifty years, was capable to uncover the geological formation, archaeological and paleontological importance of the site dominantly for scientific information. Non of the studies showed above , there were direct attempts to sustainably develop the sites for mutual benefit. Actually, to study the site from this aspect was not the objective of the archaeological study. How ever, today we are in a better position to conduct research on our cultural sites from different perspectives. We are in era of the sustainability concept.

Among the main principles of sustainable tourism are maintaining and Enhancing Tourism resources while utilizing the resources for development without compromising the interest of all stakeholders both the present and future generation.

Sustainable Development in tourism context is an interaction between the visitors and the industry that serves them and the community that hosts them and the site that the interaction take place . Among the principles of responsible Tourism Development Social and Economic Guide lines and Integrated planning that encompasses the basic factors and tools for managing resources are the major ones.

Hence, non of the major archaeological and paleontological sites at Melka Kunture were studied from this perspectives . Non of the related literatures reviewed have showed the study have been conducted from social, economic and sustainable tourism development perspective. Thus, the problem this study has identified as a gap is timely and appealing to uncover the unseen features of the study site for communal benefit and the betterment of the region.

CHAPTER THREE

D A T A - P R E S E N T A T I O N

3.1. Introduction

This chapter presents the data gathered while exploring the potential of Melka Kunture site to meet the objective of the study. The data was collected through questionnaires, interview, survey and personal observation.

3.2. Respondent reflection on the basic questions

No	Responses	Number of Respondents	Respondents value in percent (%)
1	Addadi Mariam rock hewn church and Tiya world heritage site together with the Melka archaeological sites gives a paramount tourism development opportunity .	23	32.86
2	Divers natural resource availability itself is an opportunity for tourism development.	14	20
3	The newly established investment firms around the sites are an opportunity in developing tourism business.	12	17.14
4	Melka Kunture site and its Open Air Museum has great field/trip Educational importance.	21	30

No	Respondents answer	Value	%
1	Yes	4	5.72
2	NO	40	57.10
3	I don't think so	20	28.60
4	I have no idea	6	8.60

Table 5: Respondents view on the promotion of the site (Annex 1: 17)

no	**Response of the respondents**	**Number of Respondents**	**Respondents value in Percent (%)**
1	Has contributed a lot in changing the image of the surrounding	20	28.60
2	The contribution is insignificant	50	71.40

Table 6: Respondents' opinion on the contribution of the site to the development of the Area (Annex 1 No 9)

No	Respondents reply	Value	%
1	Relatively no	20	28.6
2	Have no Idea	10	14.3
3	Temporary jobs	40	57.1

Table 7: Respondents' assessment on Melka Kunture site Job creation Opportunity (Annex 1 No 12)

No	Respondents reply	Value	%
1	Yes	10	14.30
2	No	48	68.60
3	I have no idea	12	17.10

Table 8: Respondents reply on Melka Kunture site tourist attraction Resource use (Annex 1 No 8)

No	Respondents opinion	value	%
1	Yes	10	14.30
2	No	40	57.13
3	Very little	20	28.57

Table 9: Respondents opinion on economic benefit of the site (Annex 1: 13)

No	Respondents response	value	%
1	Yes	54	77.14
2	No	4	5.72
3	I have no idea	12	17.14

Table 10: Respondents reaction towards the management and effective use of the sites resources (Annex 1: question 18).

No	Respondents clarification	value	%
1	Yes it can be	51	72.86
2	Yes but not now	15	21.43
3	I have no idea about field school	4	7.1

Table 11: Respondents clarification about the potential of Melka Kunture to be an Educational site (Annex 1: 11)

3.3. Facilities on the Site

Melka Kunture Museum is a museum of four structures built in local style. It is close to the archaeological camp, and linked by a small path to two excavated acheulean sites.

Fig.6: **The Melka Kunture Museum,** Tukul 1:TheAfricanPrehistory: Externalview (by Mengistu)

African Prehistory section, illustrates the main aspects and sites of African Prehistory, with special reference to East-African Prehistory, and the most important protagonists of the scientific researches carried out in this continent during the last century.

Fig. 7: Tukul Two : The geological aspects of Melka Kunture , External View

Tukul two presents the geological formation of the Ethiopian Rift and to the volcanic activity in this area. More detailed information on the stratigraphy and geology of Melka Kunture are also proposed to visitors. A presentation of the volcanic rocks utilized for the lithic tools production occupies a large area of the exhibition. In addition to the , as a privilege to visitors, fair signage is installed in the existing defined area, there is enough space for parking and packing, there is electric light. Moreover, there is tour management office and some information is provided on the site. Insignificant promotional materials are available and a web site is developed with limited information on the site. This study Consider the outlined establishments as tourist attraction potential together with Melka Kunture's unique features.

Fig.8: Tukul 3 : The history of the Human Evolution ,

Fig. 9: Melka Kunture , Tukul 4:

The realization of this Museum is one of the main objectives of the Culture 2000 project "From the Past to the Present in Ethiopian Prehistory. An Interactive Museum for the Archaeological Park of the Early Paleolithic site of Melka Kunture" Prehistory. The archaeological record is inserted in a large framework which contains geological, paleontological and paleo-anthropological information. The Melka Kunture Virtual Museum is designed for students, educators, keen on prehistory, and the general public to enhance their understanding of the site of Melka Kunture. There is organized security and protection system and the main tourist attraction boundary is relatively demarcated or properly defined. According to my observation , the Open Air Museum is an opportunity both for recreation and educational tourism. Besides, the currently Museum building (supported by Ethiopian Sustainable Tourism Development Project (ESTDP) which is intended for displaying ethnographic collections is another tourism potential.

3.4. Summary of Resources :

3.4.1. Natural Resources:

The natural resources, such as, the river Awash, (with its Swimming, Boating and Fishing spots), eye-catching dense forest, Indigenous animals and birds, all these natural resources are believed to be as tourism develop opportunities. However, to make the area preferable and attractive it is expected to be promoted and facilitated by integrated efforts of the local community and concerned heritage authorities at all levels.

3.4.2. Cultural Practices

I have learned from the community members and the regional officials that both Christians and local religious institutions venerate Ethiopian Epiphany and Erecha by the surrounding Oromo people. These cultural practices were celebrated in relation to the Oromo tradition or songs and

dances. This I think could be developed to tourist attraction and be a tourism potential for the area. But, it needs hard work and continuous promotion.

3.4.3. Tourism Potential:

It is unanimously accepted that, Melka Kunture is the best archaeological site with unique tourism potentials. Its uniqueness, come from the sites **'Open Air Museum'** setting. The under shelter in (Tukuls) and Open Air museum that are found within the sites enclosure made it attractive to the students of the surrounding schools and foreign visitors who passes to the Adadi Mariyam and Tiya.

Therefore, these archaeological and paleontological sites , if considered as a corridor or linked together with the other popular visit-able sites (like : Adadi Mariyam and Tiya world heritage site) could apparently be a best sustainable tourism development sector.

3.4.4. Educational Potential

It is acknowledged that Melka is one of an important heritage sites in the country with such favorable and multiple opportunities to be an archaeological sites destinations. As clearly stated elsewhere in the above pages, its significance emanated from its Open Air Museum nature. These multiple holding sites pulled a focus of researchers to be preferred for training scheme. This is mainly because;

1. It plays important role to find different in-situ artifacts in the open air museum for the ease of teaching learning process.
2. It is also easy to show the student of archaeology and paleontology to train the natural (Geological) settings of Stratigraphic formation or level of a site under this particular archaeological excavation site which serves as an "Open Air Museum".

3.4.5. Archaeological Attractions:

It is believed that, Melka Kunture archaeological sites are one of the significant archaeological sites that are located around the water head of the River Awash. This on the other hand favors the site to be attractive by most researchers. In addition to this, the concentrated nature of different types of (archaeology & paleontology) sites in such small plot of land makes it preferable by different researches to focus at these sites.

In its current situations, because of the open air museum, archaeological researchers are attracted for teaching purpose to this site for it embraces in-situ archaeological artifact materials and geological formations.

C H A P T E R F O U R
Data Analysis, Discussion and Conclusion

4.1. Data Analysis

This section includes three major structures of the research work. Firstly, attempt has been made to summarize the results of the scientific studies presented briefly on the related literatures part. Secondly, an analysis of the respondent views has been attempted and finally, synthesis of the literature and the data have been discussed.

As seen in the literature part of this paper almost all the studies conducted at Melka Kunture so far , have been dealing with the study of the geological formation of the site, uncover the paleontology and archeological findings from various localities and as well study the paleo-environment of the site. Nowadays, archaeology plays a significant role in enhancing development through heritage movement, which recognizes a number of resource types including recently discovered sites.

According to, Mather et al. (2005) , there is an increase in the number and variety of stakeholders with an interest in determining how archaeological sites are identified, evaluated, and treated to understand their potential for development. Although heritage has been a growing industry worldwide for quite some time, it has been getting increasing attention and recognition worldwide.

Yet, in the increasingly globalized world, heritage sites are recognized as having potential and significance. Again , as justified by Piperno (1999), Archaeology can become a useful tool for sustainable development. But to make it possible it is necessary to reformulate strategies and modalities of archaeological heritage management.

As stated by (Kedir 2009) , the archaeological resources of Ethiopia are rich and diverse with great perspective to add value to the outstanding heritage of the country. Ethiopia is assumed to enormously benefit from these potential resources. However, the nation is not adequately benefiting from the sector at present. On the other hand, Sustainability today is understood as relating to social and economic issues as well as environmental ones. If tourism development is planned and managed effectively, archaeological tourism can contribute positively in terms of socio-economic values. It is therefore, high time now for Ethiopia to use its archaeological resources as a catalyst for promoting tourism development in the country.

Considering the immense potential of archaeological resources in the country, sustainable management in planning and transformation of archaeological resources as new form of tourism is a necessity to diversify the attractions. A sustainable tourism development of archaeological resources can, on one hand, allow the host community to be proud of their and humanity's history, to strengthen conservation efforts, and to get economic benefit from the archaeological sites. The major goal of sustainable development is the long-term stability of the economy and environment which is only achievable through the integration and acknowledgement of economic, environmental, and social concerns throughout the decision making process.

The measurement of the direct economic benefits of cultural heritage is most often and conveniently linked to tourism in the context of the heritage asset itself being the generator of development (Throsby, 2012).

The increasing pressure for archaeological research and excavation to prove its worth in terms of economic value and social benefit must in turn be linked to broader definitions of what constitutes economic and social benefit and how it is measured.

Having this in mind , among the cultural heritage sites of the country Melka Kunture prehistoric site, is believed , to have numerous natural heritages. The relatively better transportation infrastructure, have made the site a preferable destination for the tourists. Nevertheless, due to lack of integrated effort of concerned stakeholders and vigorous promotion, it is plausible to argue that the site has not benefited half of what it deserves to get.

For instance, if we collectively assess respondent views in the preceding chapter , dominant views favor the basic statement of the problem and substantiate the research questions. The responses have confirmed that there are natural resources around the site that are not well promoted . On the other hand, various group of respondents have strongly indicated that the cultural and natural treasure in the site is still favorable for tourism.

Moreover, the surrounding sites such as Adadi Mariam rock hewn church and Tiya world heritage site, together with Melka Kunture archaeological site gives a paramount tourism development opportunity. In this regard, the aggregate historical and cultural wealth of these corridor would definitely be a vital touristic resource of the nation.

Majority of the respondents have undermined the possible economic contribution of the site . Some said the role of the community in the study area is insignificant. Actually, Melka Kunture site has important work creation opportunity in fact temporarily. It is true all archaeological research sites attracts minimum, probably skilled (on survey and excavations) laborers for at least one to two months. How ever, there is possibility to jointly plan and create permanent jobs.

Therefore, Melka Kunture archaeological sites together with its natural and cultural importance should be a center of attraction. Thus, the surrounding authorities must work hard on capacity building, create a favorable working guide and, motivate the people and initiate the local community for the betterment of the surrounding ,young generation to work toward the sustainable tourism development.

4.2. Discussion

As outlined in previous chapters the tourism potential of Melka Kunture site is diverse and rich; almost all the localities hold their own kind of unique potentials like archaeological, paleontological, Educational and Recreational. As it could be observed from the responses of the informants' majority of them have indicated that there is still an ample tourism potential at the site of Melka Kunture, which can attract tourists and can contribute to the sustainable tourism development.

Obviously, if these resources are well managed and protected they could generate more revenues to the nation. As shown in the previous chapter, above 95% of the informants have no doubt that Melka Kunture have rich tourism potential. Again most of the respondents have

indicated that there are opportunities to develop tourism in the study area. More over about 79.99 % of the aggregate informants has indicated that the study site have vital Educational potential that is not effectively utilized.

Therefore, the tourism potential, natural resource and educational potentials proposed for future use together with the scientific resource are well observed and tangible resources. Thus, Melka is significant archaeological site, which is quite interesting and could be a unique example in East Africa.

4.3. Conclusions

The entire field observation and informant views show that Melka Kunture Paleolithic site is an important for research purpose and can serve as a tourist destination. The site along with Adadi Mariyam and Tiya can develop and eventually turn into a tourist corridor. To do this, both the local community and all concerned authorities at all level need to work together.

4.4. Recommendations

Pulling together data from this research, it is imperative to outline the role of the regional state of Oromia, higher educational institutions and such stake holders as tour and travel agencies. Realizing the sustainable tourism development strategy of the federal government through an appropriate heritage management plan that was recently validated by concerned government offices requires the concerted efforts of the above said stakeholders. The following are, among others.

4.5. The Role of the Regional State:

4.5.1. The Oromiya National Regional State Constitution

According to Proclamation No. 46/1994, Article 106 section 1-3 states that the Oromiya National Regional Government has the duty for the growth, promotion and the protection of the cultural and natural heritages found within the National Regional State.

4.5.2. The Oromiya National Regional State Regulation No. 159/2013

This regulation was established for the administration and preservation of the pre historic sites of Melka Kunture and Balchit for the purpose of controlling and following-up the administration, preservation, and development of the sites. As per this regulation, the Oromiya National Regional State is empowered to coordinate public participation and organize community awareness, undertake visit and study activities and to protect illegal activities in and around the heritage sites (Article 5 sub 1).

4.5.3. Expected efforts

1. The Regional State should design a clear and workable tourist management and Infrastructural set up polices
2. The regional state is expected to collaboratively work together with ARCCH and UNESCO on issues related with the promotion and management of the site.

4.5.4. The Role of Local Authorities and Communities:

1. The local authorities should work hand in hand with, concerned Woreda Carbines and Community leaders, youth leagues , micro cooperative enterprises, Women associations and all other pertinent business enterprises .
2. The local authorities (Wereda and Wereda police) should set up a well organized security team in order to secure the wellbeing of the site and promote as tourist destination .
3. The local authorities particularly the Wereda cultural bureau authorities and experts are expected to motivate and mobilize local communities mainly, Youth league Women association and others to organize in order to produce tourism products different cultural (Cloths, hand crafts) etc.
4. The local cultural bureau experts should work hard with, hotel business owners to promote the cultural and traditional food and beverage items make ready for tourist uses.(Coffee ceremony, Ketfo and Kocho , Kolo and potato cheeps, Tela Teje and Arkai)

4.5.5. The Role of Universities :

Universities in Ethiopia, particularly those who train archaeologists and heritage management are expected to:

1. Run field schools specially: on archeology, paleontology and physical anthropology
2. Play a leading role in creating awareness among local communities and create conducive situation in promoting the Melka Kunture sustainable Tourism Development activities

How ever, In my view, all concerned authorities' at all level need to work hard to bring and upgrade this site to its expected level of tourism development.

This positive response goes in line with the gap identified and the research questions attempted to be answered. On the other hand this response shows that the group members are aware of unused situation of the Melka Kunture site resource.

On the other hand, some respondent t views indirectely indicate to what extent the stakeholders lack sufficient information about what is going on and what is around the site. However, from the perspective of this study they 'the seemingly negative responses are positive since they confirm that very insignificant work is done so far on the site in relation to tourism development.

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