ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

AN ETHNOARCHAEOLOGICAL STUDY OF POTTERY PRODUCTION IN TIGRAY: THE CASE OF SAHARTI-SAMRE AND HINTALO-WAJIRAT DISTRICTS

BY

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ADDIS ABABA, ETHIOPIA

JUNE, 2016

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A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN ARCHAEOLOGY

ADDIS ABABA, ETHIOPIA

JUNE, 2016

Addis Ababa University

School of Graduate studies

This is to certify that the thesis prepared by Tilahun Asefa, entitled: An Ethonarchaeological Study of Pottery Production in Tigray: The Case of Saharti-Samre and Hintalo-Wajirat Districts and submitted in partial fulfillment of the requirements for the Degree of Master of Arts in Archaeology compiles with the regulations of the university and meets the accepted standards with respect to originality and quality;

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Abstract

AN ETHNOARCHAEOLOGICAL STUDY OF POTTERY PRODUCTION IN TIGRAY: THE CASE OF SAHARTI-SAMRE AND HINTALO-WAJIRAT DISTRICTS

It has been described that little is done on ethnoarchaeological investigation of pottery crafts in Ethiopia. Furthermore, except some attempts made in Hintalo-wajirat, detailed ethnoarchaeological study on pottery production in Saharti-Samre and Hintalo-Wajirat districts of Tigray region has not been conducted so far. Thus, the purpose of this study was to document the over all aspects of pottery production from ethnoarchaeological perspective so as to gain better understanding of pottery in the archaeological record. To achieve this, purposive sampling technique was employed to select both samples of pottery making villages and sample of informants. The data gathered through survey, observation and interview were analyzed qualitatively. Accordingly, the results of this study revealed that clay and sand are the basic elements for pottery making across the selected villages. In the study area pottery production is generally performed through various processes beginning from raw material procurement to paste preparation, forming and shaping, making decoration, drying, polishing and firing. Though some difference and similarities are observable in some of the stated processes among potters of the selected villages, none of these differences reflect variation in ethnicity as all potters of the selected villages belong to the same ethnic group. However, the presence of similarities in some aspects indicates the prevalence of socio-cultural contact among the artisans of the different villages. Since most activities are performed in the compound of the potters, firing pits with debris of ash, fragments of pots and toolkits employed to perform various steps of pottery making could be left in the compound of potters. Furthermore, pots could be broken and discarded outside production areas at market places and households of consumers. Thus, this study suggests that production areas, market places and households of consumers could become sources of archaeological site formation in Saharti-Samre and Hintalo-Wajirat districts.

Acknowledgements

First and for most I would like to praise the almighty GOD who makes everything possible and who let me finish this thesis.

I would like to acknowledge Samara University for sponsoring me to pursue MA degree program. My Thank also goes to the School of Graduate Studies of Addis Ababa University for providing me with finance to accomplish this study.

Then, I would like to express my deepest gratitude and appreciation to my thesis advisor Dr. Temesgen Burka for his genuine and constructive advice, supervision and reviewing my work. In the absence of his guidance this thesis would not have been possible.

I am also grateful for Dr. Alemseged Beldados for his appreciable and immeasurable support dedicated in my work by sacrificing his golden time from the beginning up to the completion of this thesis. My appreciation also goes to Ato Nega Gebreselassie and Nega Menasbo for their pivotal contribution for the completion of this thesis.

I am indebted to my family for the moral support they provided me during the study period. My heartfelt thanks and unreserved love also goes to my wife Senait Embaye. Her support has been a source of inspiration in my work.

I am very much indebted to all informants who devoted valuable time to interview, discussion and share their experiences and knowledge. My special appreciation also goes to Ebrahim, Halefom, Hailu, Dagnew and Kahisu for their special support for the success of my study. It is my great pleasure to extend my thanks to the staff member of Saharti-Samre and Hintalo-Wajirat district administrative offices for their moral support and offering documents related to the study area. I want to express my appreciation and thanks to all my friends for their various contributions and dedications.

My thanks also go to Ato Mola Maru for preparing map of the study area.

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List of Acronyms

CSA----------Central Statistical Agency

˚C----------Degree Centigrade

GPRDS----------Government and Public Relations Department of Saharti-Samre District

GPS----------Geographic Positioning System

HDOPF----------Hintalo-Wajirat District Office of Plan and Finance

m.a.s.l ----------meter above sea level

SDOPF ----------Saharti-Samre District Office of Plan and Finance

UTM ----------Universal Transvers Mercator

Chapter One: Introduction

1.1. Background of the Study Area

1.1.1. Natural Setting

Saharti-Samre district is bounded in the east by Hintalo-Wajirat *wereda*, in the West by Tanqua Abergele *wereda*, in the North by Degua Temben *wereda*, and in the south by Amhara Regional National State. According to Saharti-Samre District Office of Plan and Finance (SDOPF) (2015), Saharti-Samre lies at 12˚ 30' 00"-13˚ 02' 00" North and at 38˚ 59' 00"-39˚ 26' 00" East with an elevation range from 1470 to 2370 meter above sea level (m.a.s.l). Hintalo- Wajirat on the other side is bordered with Amba Alajae *wereda* in the South, Enderta *wereda* in the North, Afar Regional State in the East and Saharti-Samre in the West. According to Hintalo-Wajirat District Office of Plan and Finance (HDOPF) (2015), the GPS location of the district lies at 12˚ 88' 39" - 13˚ 44' 54" North and 39˚ 27' 98" - 39˚ 87' 76" East with an elevation range from 1,728 to 3,148 m.a.s.l.

The villages selected for this study are Gawee, Addi Hayla, Ara and Edaga Arbi. Gawee and Addi villages are situated in Saharti-Samre district whereas Ara and Edaga Arbi villages are found in the district of Hintalo- Wajirat. The UTM location of Gawee lies at 0512129 East and 1464980 North with an elevation of 1725 whereas the UTM location of Addi Hayla lies and 0512768 East and 1461698 North with an average altitude of 1931 m.a.s.l. The UTM location of Ara lies at 0562383 East and 1464396 North with an elevation of 2134 whereas Edaga Arbi is located at 0539004 East and 1457215 North with an elevation of 1967 m.a.s.l respectively.

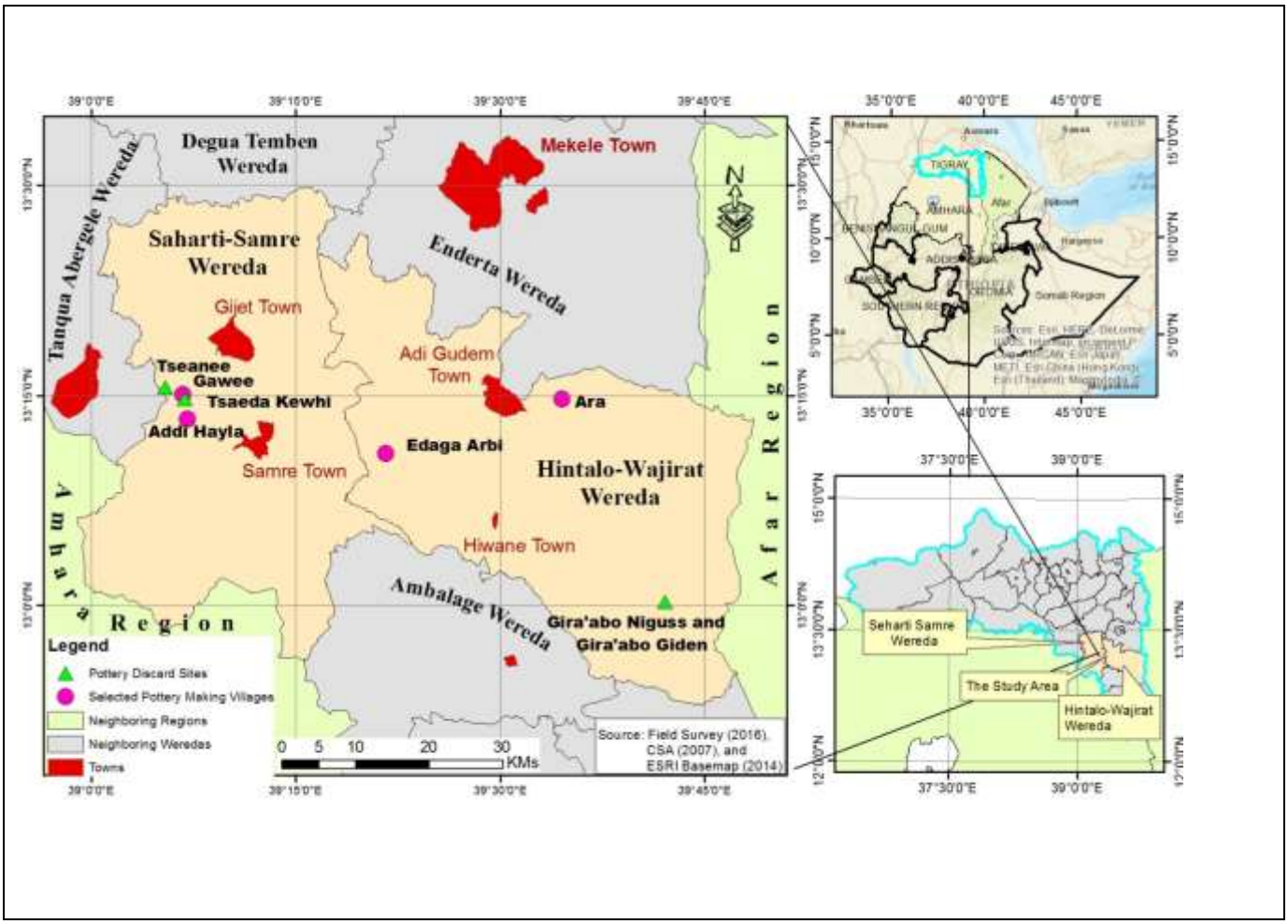

Figure 1. Map of the Study Area

According to SDOPF (2015), the soil composition of Saharti-Samre has luvisol (red soil), cambisol (bole soil), and vertisol (black soil) that constitute 55%, 20%, 25%, respectively.

In Hintalo-Wajirat the soil compositions are vertisols, cambisols and fluvisols. The central part of the district is moreover characterized by black soil with cracking nature dominated by clay particles (Relief society of Tigray, 2000 in Mohammed, 2006)

Among the existing soil types, clay and sand are the preferable soil types for pottery making in the study area. Based on my observation, except in Ara, where the clay is gray in color, the clay has black color in the remaining selected villages. Nevertheless, the sand which is coarse grained with shiny brown color is more or less similar throughout the selected villages.

Saharti-Samre is relatively flat compared to neighboring districts and dominated by lowlands (REST, 2007 in Tenaw, 2014). Mountainous, undulating flat and plain lands, rigged valley and sgorges and hilly areas on the other hand are characterized the landscape feature of Hintalo-Wajirat district. The southern, eastern and western parts of Hintalo-Wajirat are, moreover, characterized by mountainous whereas its northern part is low land compared to other parts (Tagel, 2008).

In both districts the rainy season is summer (*Kremti*). Saharti-Samre is characterized by warm temperature and lower annual rainfall in which the yearly average rainfall is about 350-700 mm with temperature ranges from 15 to 30˚C (SDOPF,2015). According to Tagel (2008) the average annual rainfall of Hintalo-Wajirat ranges from 435.26 to 674.08 millimeters with an average minimum and maximum temperature of 15 degree centigrade (˚C) and 30 ˚C respectively.

Saharti-Samre is characterized by lowland (*Kola*), temperate (*Weina-dega*) and highland (*Dega*) with proportion of 47%, 50% & 3% respectively (Ayenew et al.2011). Hintalo-Wajirat, on the other hand, has three agro-ecological zones: *Kolla* (<1500 m.a.s.l) *Weina–Dega* (1500-2300 m.a.s.l) and *Dega* (>2300 m.a.s.l) that holds 22.5%, 63.75%, and 13.75% of the total areal coverage of the district respectively (HDOPF, 2015).

As one can deduce from their elevation recorded with the help of GPS, all the villages selected for this investigation are found in *Weina-Dega* climatic zone.

As I observed, plants such as *Ziziphus spinachristi* (Giba), *Apparis micrantha* (Andiel), *Acacia albida* (Momona) and rare *Ficus vasta* (Daero) are scantily distributed in lowlands, western part such as in Gawee, of Saharti-Samre. Moreover, the lowland (*Kolla*) part of Saharti –Samre comprises scattered acacia trees, riverine forests and bush scrub.[1]

Woodlands, savanna grasslands and halophytic vegetation are the common natural vegetation of Hintalo-Wajirat district (Mohammed, 2006). Podocarpus, Junipers, olive trees and many other are predominantly found in the highland area whereas acacia abyssinica, cactus, olive trees and many other trees are prevalent in the lowland areas of Wajirat (Tarekegn, 2005; personal observation).

1.1.2. Cultural Setting

The area under investigation lacks historical documents for there is not as such a comprehensive investigation done on this in particular and in the study in general. Accordingly, for this investigation attempts were made to compile those existing but fragmentary written documents and mainly folktales to pave a way for reconstruction of the history of the region under exploration.

Although, there is no empirical evidence that indicates the exact date of its foundation, elders speculate that Samre, the administrative town of Saharti-Samre, flourished even before the foundation of Mekele city (Mesele, 2006; Tsegay, 2009). According to Medhane (1995), Samre was along the salt trade route that connects Mekele with Soqota since eighteenth and nineteenth centuries. It is argued that Samre was an important commercial center during the 19th and 20th Centuries (Pankhurst, 1964, 1985; Medhane, 1995; Tsegay, 2009) and Saturday was the then market day of Samre (see, Wylde, 1901 in Pankhurst, 1964; Annaratone, 1933 in Medhane, 1995) as of today.

Mesele (2006) states that according to the legend told by the locals the name Samre was derived from the word *Samrawian*. *Samrawian* is the name of people who came from Israel and settled in Samre village. These people were believed to be the *Falasha.* Thus, the place has got the name Samre. Besides, he noted that informants speculated that *Samrawian* were iron smelters. The oral history related to *Samrawian* makes a sense when we viewed it from Hancock's argument that "the Ark of Covenant had been brought from Israel carried by the Israel migrants through Egypt to the basin of Blue Nile, in Ethiopia, and after staying for hundreds of years in the monasteries of Tana ,a natural lake and the origin of Blue Nile- the Ark of the Covenant was taken to Axum along the routes of Tigray; (Hancock, 1992 in Mesele 2006:45). As its location is a bit near to Gojjam and Gondar where the Ark of Covenant lasted for the said period of time, one can imagine that Samre might have been part of the route (Mesele, 2006).

Locals stated that the present day Samre is assumed to have flourished by *Samrawian*. An informant, Weldu, speculated that the *Kayla/Falasha* people inhabited at Addi Giba, some kilometer north east of Samre town. In addition , informants, Kebede and others, speculate that *Falasha*/ *Kayla* were believed to have come from *Semyen* found south west of their home village

and settled in Gawee at a locality called Tseanee, where an immense of potsherds are currently observable. *Kayla* communities, according to informants, were potters and smiths. The oral information about the place, Semyen, where the *Kayla*/*Falasha* came to Gawee village in general and Tseanee locality in particular is described as one of the settlement areas of Bete Israel (see, Gedef, 2005).

Hintalo-Wajirat is the combination of Hintalo and Wajirat, formerly independent *weredas*. It was later after the coming of EPRDF merged together and formed the present day Hintalo-Wajirat district. From 1867-68, according to observers of the then time, Hintalo had a population of about one thousand, of whom 150 were Muslims (Halland and Hozier, 1870 cited in Pankhurst, 1985). Antalo (Hintalo) town was variously described as a market center of the 19th and 20th centuries (Pankhurst, 1964; Pearce, 1869 in Medhane, 1995). Trade items such as iron cross, honey, leather garments, goat skin bags, butter, milk, cattle, sheep, mules, hides and skin (Pankhurst, 1985), salt (Medhane, 1995) and ivory (Alamanni, op cit (n.d) in Pakhurst (1965) were exchanged in Hintalo.

To begin with its etymology, the term Wajirat is allied with different meanings. Some speculate that the name originated from the combination of the two words, Wajja and Irat, in which Wajja is name of a place and Irat means dinner (in Amharic) -the dinner of people from Wajja. The reason behind this nomenclature, according to informants, is that once upon a time gusts from Wajja (around Alamata) arrived at Wajirat at a village called Adi-Bati. The then guests were invited to dinners and received good hospitability by the community. Consequently, to express their response for the good hospitability and dinner party of the hosts, the guests named the village "Ye Wajja Irat" and through time the name assumed its present name Wajirat (Tarekegn, 2005).

An oral account by Wajirat elders also indicates the name Wajirat was derived from a combination of two Oromiffa words "Waqa" and "Jira" in which "Waqa" means God and "Jira" means present which literally means "oh! God is present". In the course of time the name "Waqa-Jira" then corrupted in to Wajirat.

Regardless of the origin of its name, Tarekegn (2005) suggested that people who came from eastern direction via the present-day Afar region in search of pasture settled in the present land of

Wajirat long before the introduction of Christianity in to the region. They were traditional believers who later converted to Christianity.

When we came to the present day population, according to Central Statistical Agency (CSA) (2007) report, the districts of Saharti-Samre and Hintalo-Wajirat have an estimated population of 124,000 and 153505 respectively of which 51% are females and 49% are males in both districts. Looking at their ethnic composition, the districts are principally inhabited by those who speak Tigrigna language and adherents of Orthodox Christian religion. Moreover, as my observation and interview with potters indicates, all potters across the entire villages selected for this investigation are Orthodox Christian followers and Tigrigna speakers.

According to GPRDS (2015), Saharti-Samre district covers an area of 190,188.18 hectare. Of which 37,265.78 hectare is arable land whereas the remaining, 152,922.40 hectare, is uncultivated, forest land, grazing land, reserved and other uses (Mesele, 2006). On the other side, in Hintalo-Wajirat from the total areal coverage, 77,749 hectare is arable land whereas the remaining, 115,560 hectare, is shared by forest land, uncultivated, grazing land, non-utilized and other uses (Tagel, 2008).

Agriculture is the basic subsistence of the population of the area under investigation. Summer is the main cropping season in the districts. Residents of Saharti-Samre (SDOPF, 2015) and Hintalo-Wajirat (HDOPF, 2015) districts are mainly dependent on agriculture.

Teff, wheat, barley, pea, maize, Sorghum, beans, lentil, sesame, and the like are the most common crops. The district is also home of different animals such as cattle, goats, sheep, donkey, chicken and bees (SDOPF, 2015). The local inhabitants of Hintalo-Wajirat cultivates Teff, wheat, barley, horse bean and lentils as their major crops whereas the minor crops are sorghum, millet, vegetables and root crops. Apart from crop production, farmers also breed livestock such as cattle, sheep, goats, mules and camels (HDOPF, 2015).

Based on my observation, handcraft is another economic activity for some communities in the study area. Women, but not all, have taken pottery making as a means of their income while some men, particularly the husbands of traditional potters, are actively engaged in smithing and tanning activities. Currently, in the study area, pottery making is not only restricted to the

specialized crafts who are traditionally believed to be evil eye or *Buda* and mostly wives of smiths rather it is also adopted by wives of other farmers as a means of economic subsistence in addition to agriculture.

The pattern of settlement i.e. the spatial distribution of homestead in the study area which is influenced by natural, economic, and cultural factors, in general, varies from nucleated villages to scattered homesteads (Personal observation). Scattered settlement is, generally, the characteristic feature of Saharti-Samre district (Tenaw, 2014). In order to protect from natural and anthropogenic damages, the population distribution system in the area is more of in geographically fragmented and strategic areas. The large numbers of community stations of the area are rural hamlets settled within top sides of the chained mountains (Mesele, 2006). In Hintalo-Wajirat, the population is unevenly distributed in which the central part followed by its southern part is populated than its eastern and western parts. In its eastern part the settlement is sparsely distributed due to the topographic nature of the area consisting of broken landscape.

Settlement pattern is also affected by cultural background of the society in which traditional craft workers, locally identified by the name *Buda*/*Antergna/Tebib*, are despised and lived together separately at the edge of the residence of the main stream society or within the majority of the non-crafts but still they form their own neighborhood within that situation. Smiths, tanners and traditional potters belong to the same minority social group and are marginalized. They are tied each other through lineage and/or marriage and lived together as neighborhood while the majority who considered themselves "pure" locally called *chewa* are generally found at the center of the villages or towns.

According to scholars, in Tigray, craft workers are despised and avoided by their surrounding non-crafts (Lyons and Freeman, 2009; Lyons, 2014). Moreover, Mesele (2006) describes in spite of the fact that potters in Saharti-Samre have neither peculiar biological mark visible on their physical appearance nor any particular way of life that uniquely marked them within the rest community, their job of pottery making is the only identification for being of "Buda", evil eye. Similarly, in the study area in general there is a social division between crafts and the mainstream societies. Accordingly, in the area under investigation smiths, traditional potters, ex-slaves locally called *Baryas* and traditional singers locally called *watot* are stigmatized and

looked down by *chewa* community. As a result, dwellers of the study area in general are sharply stratified as *chewa* and non-*chewa*. The non-*chewa* is a collection of "Budas" or evil eyed people, *barya* (slaves) and *wata* (traditional singer). Of the non-*chewas*, "Budas" which comprises blacksmiths, traditional potters and tanners are despised society and found at lower class in the study area. On the other side, the *chewas*, are socio-culturally found in the upper class. Though, there could be economic and political difference among the *chewas* themselves, there is no marked difference in their socio-cultural status.

This social division between crafts and the main stream society is also manifested in the residential settlement of the people within the same geographical setting of the community.

1.2. Background of the Study

Pottery is one of the earliest human creative synthetic materials (Rice, 1987; Buys and Oakley, 1993). However, there is no clear evidence as to when the technology was begun (Baker, 1961) and it does not mean that pottery is the first tool that was used as storage/container in the history of human kind. Instead, there could be tools that preceded the innovation of clay vessels. Renfrew and Bahn (2008) explained that during early prehistoric time probably people used containers made of light organic materials. As explored by Kosambi (1977) in Manibabu (2005) baskets and leather bags used initially as a storage equipment long before the appearance of pottery. In prehistoric man's history of technological development stone, bone and wooden tools were made and used for hundreds of thousands of years before the advent of fired clay vessels (Manibabu, 2005).

Pottery making is widely accepted as the technological achievements of the Neolithic communities (Baker, 1961; Fagan, 1975; Ashmore and Sharer 1996; Garcea, 2004; Finneran, 2007; Renfrew and Bahn, 2008; Gibbon, 2015).

Regardless of the exact time when pottery making was begun, pottery has been playing such a role as means of survival besides agriculture (Hill, 1987), in processing, transporting, cooking and storage facilities (see, Arnold, 1985; Rice, 1987; Arthur, 2000; Shrotriya, 2007; Skibo, 2013). Others classified the function of pottery into two broad categories; direct function includes the function of pottery in storage, transportation and processing facilities, and in direct

function such as symbolic function of pots (see, Halland, 1992 and Barnett, 1999 cited in Gedef, 2005).

Pottery fragments in the archaeological record are the end result of the interaction between raw materials, culture and technology by which archaeologists able to recognize culture of those who formed the archaeological record (Shrotriya, 2007). Archaeological potsherds can provide a clue about manufacturing behavior of pottery such as raw materials and firing process (Grant et al.2008; Renfrew and Bahn, 2008), function of pots (Arthur, 2002), diet (Fagan, 1975; Ashmore and Sharer, 1996; Arthur, 2002; Renfrew and Bahn, 2008; Gregg, 2009), socio-cultural interaction (Fagan, 1975; Rice, 1987; Ashmore and Sharer, 1996; Bel, 2009) group identity(i.e. decoration) (Miller, 2007) of those who were responsible for the formation of the archaeological record. Generally, meticulous investigations of potsherds provide data to understand the life ways of the past society.

Though Palanivel and Meyvel (2010) claim that pottery artifacts provide a clue about daily life and cultural aspects of the people who lived at the time of their production Kramer (1985) argued that ceramic production, change, distribution, use and discard are highly diverse and complex indeed interpreting of archaeological materials with complex image as a symbol in the past is very difficult (Binford, 1983 cited in Kuznetsov (n.d). Thus, research on the over all aspects of contemporary potters in association of their material culture is highly pivotal. Such type of reconstruction of the past based on the present pottery and its associated features is called ceramic ethnoarchaeology (Kramer, 1985). Brown et al. (1985) suggests detailed investigation of modern-day aspects of pottery through ethnoarchaeological approach could help to comprehend the past cultures embedded within potsherds in archaeological sites.

Starting in the early twenty century, many ethnoarchaeological researches have been conducted on the existing societies intentionally to understand the culture of prehistoric people. However, emphasis was placed on hunting and gathering activities (Shrotriya, 2007; Gembale and Boismier, 1991 in Kuznetsov (n.d)). Furthermore, despite the fast growth of ethnoarchaeological research in sub-Saharan Africa since the late 1980s, its development in Ethiopia is very slow (D'Andrea et al.1999) indeed pottery ethnoarchaeology in Ethiopia is still emerging (Arthur, 2000). Akin to in other parts of Ethiopia, there is a dearth of ethnoarchaeological works of

pottery in Tigray region. Particularly, despite the presence of continuity of traditional pot making across Saharti-Samre and Hintalo-Wajirat districts, except some attempt made on some potters of Hintalo-Wajirat (see, Tilahun, 2013), the area has not been studied in detail from ethnoarchaeological context. Thus, the aim of this research is to examine the overall aspects of pottery production technology from archaeological point of view and to make contribution so as fill the existing gap (lack of ethnoarchaeological investigation).

1.3. Statement of the Problem

> *In recent years traditional Ethiopian pottery has suffered a decline as baked earthenware pots tend to be increasingly replaced even in the remotest villages by tin ware or enamel substitutes which have the advantage of being less fragile. It has thus become a matter of the utmost importance to prevent this craft from dying out* (Cassiers, 1971:46).

Despite the argument made by Cassiers (1971), traditional pottery making is still prevalent in various localities of Ethiopia (see, Arthur, 2000; Pankhurst, 2001; Lyons and D'Andrea, 2003; Gedef, 2005; Kaneko, 2005; 2012; Bula, 2006, 2011, Lyons and Freeman, 2009; Tilahun, 2013). Furthermore, Gedef (2005) stated that although clay vessels are being replaced by plastic and metallic vessels, still baking plate (*mugogo*) do not have substitution. It is due to this continuity of pot making that scholars get the opportunity to conduct ethnoarchaeological research on traditional potters. In spite of the fact that pottery is continuously manufactured throughout the region, ethnoarcaheological study of pottery in Ethiopia is emerging (Arthur, 2000). Above all, there is no ethnoarchaeological study on pottery making in Saharti-Samre district and intensive ethnoarchaeological study of pottery production has not been made in Hintalo-Wajirat district.

On the other hand, as Cassiers (1971) argued, the study area is exposed to the external world - like elsewhere in Ethiopia- so that plastic and metallic objects have been introduced to the region and negatively affected the production of pottery. As such, in the study area, in general, clay pots are gradually being replaced by plastic and metallic objects. Furthermore, Tilahun (2013) stated that in some areas of Hintalo-Wajirat some large sized clay objects such as liquor jar locally called *Gene-e* are being replaced by plastic and metallic barrels locally called *bermin/ bermil.* Due to such problems I strongly believe that identification, description and documentation of the

entire cultural aspects of the traditional pottery production facing these serious challenges is so vital. As suggested by Kramer (1985), investigation of the traditional potters who face the problem of deterioration but still in practice is the aim of any ethnoarchaeological research of pottery.

Thus, pottery production in the study area that has been affected by the introduction of exotic objects needs ethnoarchaeological work so as to document its technological, socio-cultural, economic aspects and its significance for interpretation of archaeological potsherds in the study area in particular and in other regions in a wider context.

Accordingly, the study has attempted to address the following major questions.

- What types of raw materials potters use for pot making?
- Is there any variation or similarity in the raw material utilized for pottery production among the selected villages?
- What are the changes and continuities related to the craft in the study area?
- What are the socio- cultural and economic aspects of potting?
- How is archaeological record formed?

1.4. Objective of the Study

The study has the following general and specific objectives.

1.4.1. General Objective

The main objective of this study was to conduct ethnoarchaeological investigation of contemporary pottery production among the traditional potters of Saharti-Samre and Hintalo-Wajirat districts, southeastern Tigray, so as to gain a better knowledge of pottery in the archaeological record.

1.4.2. Specific Objectives

Specifically, this research has the following objectives.

- To identify and document the types of raw materials which potters use for pot making
- To document and describe the operational sequence of pottery making
- To document the variations and similarities of pottery production among the selected sites

- To examine the role of gender in pottery production
- To identify the potential source areas for the discard of pottery

1.5. Research Methodology

According to Leedy and Ormrod (2005) cited in Pacho (2015), research methodology is the general approach which the researcher takes in conducting research. It involves the entire approach to research (Abiy et al.2009). In short "research methodology is the philosophy or general principle which guides the research" Dawson (2002: 22). Thus, the methodology of this research is discussed as follows.

1.5.1. Sampling Strategy

1.5.1.1. Site Selection and Delimitation of the Study

In any ethnoarchaeological investigation, identification of the site and the community where the research is to be conducted is very crucial (David and Kramer, 2001). Accordingly, the current study area is purposefully selected owing to four important points. These are: (A) In order to make comparison between potters of the two districts which helps to assess whether there are differences and similarities in the overall aspects of pottery production (B) In both areas there has been continuity of traditional pottery production. However, except some attempts, the areas remain unexplored in detailed from ethnoarchaeological perspective. (C) I am familiar with the language of the community indeed it helps me to easily communicate with potters and to document available information as knowledge of language of the communities being studied is essential (London, 2000; David and Kramer, 2001). (D) Since both of the districts are open for outsiders, like elsewhere in Ethiopia, they are susceptible to external influence in which clay objects are being replaced by the introductions of plastic and metallic objects. Thus, documentation of the art before its total vanishing is so valuable.

It was the interest of the researcher to carry out an ethnoarchaeological study of pottery production that included all potters of the entire districts. However, due to time and money constraints the study is delimit into selected villages of the study area. In line with this, Renfrew (1996) suggest that there may not be enough money and time necessary to cover the entire areas of a large region under investigation and, thus, it needs some kind of sample. Consequently, this study was restricted to four villages which were selected purposefully on the ground of number

of potters at village level. As a result, villages relatively with large number of potters were selected. I believe that high number of potters could have diverse information and may have diverse production techniques and types as a result of probably different specialization. Besides, accessibility was another criterion that I employed to select these villages. Accordingly, Gawee and Addi Hayla in Saharti-Samre district and Ara and Edaga Arbi in Hintalo-Wajirat district were selected for this study.

1.5.1.2. Sampling Techniques and Sample Size

Selection of informants with whom the interview is to be conducted is the duty of the researcher. Identification of participants is one aspect of any research design (Marczyk et al.2005). In the study of a certain process and a research conducted in the field, selecting informants who meet certain criteria is indispensible (Bernard, 2006). The criterion could be identified based on research questions and objective of the study. Moreover, David and Kramer (2001:77) pointed that "even in small- to medium-scale communities, it is rarely feasible to make observations in all households or with representatives of all a community's constituencies". Thus, it needs to have a representative sample. Accordingly, I have selected informants who are believed to be fit with the objective of this study. Out of the various sample methods, in this research, purposive sampling technique was employed. In purposive sampling, population is non-randomly selected rather they are chosen based on a particular characteristic. In purposive sampling, samples are selected based on the purpose of the research (Tuckett, 2004).

Thus, to select informants, at first the total number of potter's household at each selected villages were counted. Then, after, about half of the total potters at each village level were selected for interview. Accordingly, except in Gawee, where the total potters at household level are 36, the total number of potters at household level in the remaining villages ranges from 15 to 18. All potters across the selected villages are females. As argued by David and Kramer (2001:77) **"**a range of ages and genders should be sampled, varying information obtained from different age groups often constituting evidence of ongoing change*"*. Accordingly, potters at each village were purposefully selected from three age groups; 20-40, 41-60 and >60 years old. This would help to examine whether pottery making skill vary from different age groups and to understand the changes and continuities that would likely occur across time. In the study area, I did not find a potters aging below 20 years and thus selection of informants was started from those who are 20

years old. Thus, 45 potters were interviewed from the three age groups. Of which 18, six from each age group, were selected from Gawee. The remaining 27 informants, nine (three from each age groups) in each village were selected from the other selected villages. I divided the number of informants into equals in the three villages, Ara, Edaga Arbi and Addi Hayla, because the total potter's household in each village are nearly equal. In other words, informants selected in each village represent about 50% of the total potters found at village level. All are females. I could not find male potter across the selected villages.

Interview was also conducted with eight; two from each village, non-potter crafts consists of tanners, smiths and weavers. All are males. I did not find females engaged in other crafts out of pottery craft. In order to select these craftsmen informants, purposive sampling technique based on age was employed. Accordingly, individuals were selected from the age group of 30- 60 and >60 years; one from each age group. Among the non-potter crafts living in the selected villages, I did not find even a single person aging below 30 years; and consequently, I have used it as a starting point for selection of non-potter craft informants based on age. I employed these informants to examine their attitude towards the potters and their interaction with potters and the non-crafts.

In addition, interview was held with sixteen, four from each village, non-crafts. These were selected from three age group category (young ages (15-24), the adults (25-60) and the elders (>60), one from each of the first age groups and two from the third age group. I used two informants from the last age group because I believe that those could have more information about the past than the others. Males and females were equally treated. As a result, seven females and nine males got the chance to be involved in the interview.

Two elder informants who are believed to be knowledgeable about the discard site of Gira'abo Niguss and Gira'abo Giden in Zigadele village of Addi Keyh *Kebelle* were also selected based on their age in which those who categorized under >60 years old were selected. Females and males were equally treated. The elders are vital informants because they can provide more information gathered from their ancestors.

Besides, interview was made with two pot traders in Addi Gudom and Samre market towns, one from each area. Two of them were females. I did not find male pot traders and pot traders in

general in Edaga Arbi market place. These were purposefully selected on the bases of their working periods of time in which those who stay in the trade for long time compared to others were selected so as to gain a better understanding about the distribution of clay objects.

To sum up, the total sample size of this research were 73. Of the total sample sizes 54 (74%) were females whereas the remaining, 19 (26 %), were males.

1.5.2. Data Collection Methods

In order to gather accurate and valid data, the study employed both primary and secondary sources of data which were collected before, during and after the actual field work. Secondary sources of data were gathered from published and unpublished written documents. The primary data on the other hand were gathered directly from the subject of the selected villages. The data were, thus, collected through the following methods.

1.5.2.1. Pre-field Data Collection

Before the field work, I have conducted survey of literatures related to the research topic and study area so that data from published and unpublished secondary sources comprises published books, dissertations and Journals were collected from the Institute of the Ethiopian Studies, the libraries of Addis Ababa University and Authority for Research and Conservation of Cultural Heritage. Data gathered from internet sources were also part and parcel of the study. This allowed me to acquire information about the general aspects of pottery production and potters and background of the study area. Data gathered from the *Woreda'*s administration office were noteworthy in providing information about the general description of the study area.

1.5.2.2. Data Collection in the Field

Conducting fieldwork among contemporary societies helps to study the behavioral aspects of human society in both the past and present (Renfrew and Bahn, 2008). Ethnoarchaeological research requires prolonged time in the field (London, 2000). Due to time constraint, however, data about the overall aspects of pottery making in the study area were gathered within two months and half a month. In the meantime, data on the types, sources and means of acquisition and transportation of raw materials, the procedures of pottery production, house hold consumption and marketing of pottery (means of transport, distance to the market centers,

market day, price of pots, location of pottery sellers within market areas), attitudes of the main stream society towards pottery crafts, and other necessary information related to this research were collected in detailed. Also, the absolute location of each site was recorded and taken in note books. Generally, in the field work, any data relevant to the study were collected through the following methods.

1.5.2.2.1. Field Survey and Observation

During the field work I had under taken intensive survey of the raw material quarrying and pottery production sites, firing places, discard sites, market areas of potters and location of potters within market places and other necessary activities which were pertinent to this investigation. Observation, as explained by David and Kramer (2001), is the most adequate method in any ethnoarchaeological research. Thus, during survey, I made also active observation on the overall aspects of pottery production and how pots are discarded and entered into the archaeological records. Participatory observation was also made by taking part in some tasks while potters allowed me to do so. Besides, observation of the overall feature of the study area in general and particularly settlement pattern of the study area intended to examine the residence houses of potters and other crafts in their respective village was the aim of the field work. Active observations were also undertaken at firing places, discard sites and market places where potters sold their products. Generally, observations that have been quite significance for this research was conducted as much detailed as possible and consequently it provided me to observe and understand the presence of similarities and differences in pottery production among the selected villages of the study area.

Besides, surface survey and detailed observation of discarded sites around the selected villages were held and consequently I was able to find three pottery discard sites in the study area: Tseanee, Tsaeda Kewhi and Gira'abo Niguss and Gira'abo Giden sites.

1.5.2.2.2. Interview

David and Kramer (2001) noted that data collected through observation is more convincing when interview is added to it. Furthermore, Renfrew and Bahn (1996) stated that in the case of illiterate society, significant information of the past and the present could be handled orally indeed impossible to detect it by any means unless intensive interview with the community is

performed. As such, I spent time with the locals and I made interview with selected informants. Potters were interviewed issues concerning the overall features of pottery production such as the sources, types and preparation of raw materials, methods of shaping and forming, decoration, drying firing, household functions, marketing, distribution, use and discard of pottery and the social and cultural context of pottery making while non-potters were interviewed on topics such as their relation with potters, the function of pottery objects in their household, their perceptions towards potters and other issues. Besides, non-potter crafts were interviewed in order to understand how they perceive the pottery crafts and non-crafts and how the mainstream societies perceived them both in the past and present.

As far as the data from the discard sites of Tseanee, Tsaeda Kewhi and Gira'abo Niguss and Gira'abo Giden is concerned, information has been also gathered from local elders. Regardless of the types of informants, all interviews were semi-structured and open ended.

1.5.3. Data Collection Instruments

As an archaeological investigation, the study was accompanied with archaeological field equipment such as digital camera, GPS and note books. During the field work, digital camera was used to collect photographic data pertinent to this study. GPS was employed in order to collect spatial data.

1.5.4. Data Analysis

The data collected through different data collection methods were analyzed qualitatively.

1.6. Significance of the Study

Ethnoarchaeological studies allow researchers to obtain plenty of information which helps to reconstruct material culture and behavioral aspects of human past (Ashmore and Sharer, 1996; David and Kramer, 2001; Renfrew and Bahn, 2008) Furthermore, ethnoarchaeological study of pottery pave a way to establish chronology and cultural interaction among various peoples (Renfrew and Bahn, 2008). Thus, as an ethnoarchaeological research, it is hoped that this research would likely offer important information for archaeologists to establish such reconstruction in the study area in particular or in the country as a wider context. The result of

this research would also contribute in broadening the knowledge of the scientific communities and may have its own contribution to fill the existing gap (limitation) of ethnoarchaeological study of pottery in the region in general and in the study area in particular. Moreover, this study may have great contribution for documentation and preservation of the art of pottery production being endangered by modern technologies. It also becomes a base line data for researchers and scholars interested to conduct further research in the area.

1.7. Ethical Consideration

Any research conducted with the involvement of human beings/hosts need to be guided by ethical principles; informant consent, confidentiality and anonymity (Abiy et al.2009). Moreover, in any ethnoarchaeological research official permission not only from the host but also from other places such as districts and towns is needed (David and Kramer, 2001). Accordingly, permission to carry out the study was obtained from the Department of Archaeology and Heritage Management, Addis Ababa University, Tigray Ministry of Culture and Tourism and the *Wereda* and *Kebelle* offices of the study area. Each informant gave informed verbal consent after being told about the purpose of the study. Besides, as anonymity and confidentiality of informants seriously taken into account in any research chiefly social research (Yeraswork, 2010), prior to commencing interview I have told informants as their information that are going to deliver is for educational purpose.

1.8. Organization of the Thesis

The thesis has four chapters. The First Chapter is concerned with the introductory part which comprises background of the study area and study, statement of the problem, objective of the study, research methodology, scope, limitation, significance and ethical consideration of the study. The Second Chapter presents review of related literatures. In Chapter Three, the primary data gathered during the field work through different methods is presented and described. Finally, Chapter Four finalizes the thesis with discussion of findings and conclusion.

Chapter Two: Review of Related Literatures

2.1. Ethnoarchaeology: The Concept

Various processes play a role for the formation of archaeological record enabling various forms of interpretation of the record (Silva, 2008). "It can be said that, attempting to understand the systematic context of things unearthed from archaeological record is one of the goal of archaeological investigation" (Schiffer, 1987 in Silva, 2008:261). However, archaeological remains do not necessary narrate about the history of activities. Thus, questions about the formation process can be address if archaeologists develop theoretical-methodological tool and incorporate it into their interpretation; and ethnoarchaeology is considered as one of these tools and promising to interpret archaeological findings (Silva, 2008).

Ethnoarchaeology is the study of the impact of present human behavior on the formation of archaeological record (Gould, 1989; Politis, 2015). It is the study of the form, manufacture, distribution, meaning and use of artifacts through direct observation of the contemporary community for the purpose of archaeological interpretation (Stanislawski, 1974 cited in Manibabu, 2005). It is a living archaeology (Shrotriya, 2007) that deals with such topics as site formation and deposition process, registration of traditional technologies, settlement pattern, interaction of human with its nearby environment and other aspects of material and social life (Sinopoli, 1991). The aim of ethnoarchaeology is the use of ethnographic findings to interpret archaeological material records (Gould, 1973 cited in Gallagher, 1977; Arthur, 2000; David and Kramer, 2001) and provide links between present and past (David and Kramer, 2001). Moreover, investigation of the current societal activity from archaeological point of view helps to understand invisible aspects like gender or ethnicity which are very difficult to recognize merely through material remains (Grant et al.2008).

Its focus on the study of the interaction between material cultures and socio-cultural dynamics having archaeological question in mind makes ethnoarchaeological study different from other ethnographic studies (Renfrew and Bahn, 2005; Politis, 2015). Ethnographers are not meant to answer archaeological questions whereas ethnoarchaeologists can address both ethnographic and archaeological questions. Related to this London (2000:2) strongly underlined that "one might think that ethnographers are best qualified to study contemporary communities, but this is not

necessarily so. Ethnoarchaeology involves fieldwork among people today by archaeologists who investigate questions relevant for analyzing ancient artifacts and material cultures. This fills a gap that traditional ethnography, in the main, has not addressed".

Similarly, Gould (1978) in Manibabu (2005) stated that the reason behind the establishment of ethnoarchaeological investigation by archaeologist was because of insufficient supply of information on material cultures by ethnographers indeed it lacks empirical details in explaining and reconstructing the past. Furthermore, today's ethnographers are more concerned with non-materialist nature such as human symbols, values, cognition, belief and social organization (Ibid).

As of ethnographers, ethnoarchaeologists investigate material culture of the living societies. Nevertheless, ethnoarchaeologists pay attention for understanding how the living communities create and use material culture, how they interact with their surrounding environment and formed settlement (Gallagher, 1977; Renfrew and Bahn, 2008). Besides, Gould (1989) argues that in spite of the fact that both ethnoarchaeologists and ethnographers study present-day society, the observation made by the former is, however, a means to an end, to study the past human behavior. Ethnoarchaeologists focus on how material items are made, used, discarded so as to suggest general principles regarding human behavior and materials.

Nevertheless, it does not mean that various aspects of the contemporary aspects are exactly same with what had in the prehistoric societies and what we observe today could not directly relate to what we unearthed from archaeological sites. For instance, demand, technological aspects, transportation and distribution of pottery may change through time (Costin, 2000). With regard to this, Santacreu (2014) further stated that:

> *Although the possibilities of ethnography to enrich our explanations about the past are suggestive, their use in terms of direct analogies related to extinct prehistoric cultural practices is quite dangerous. The rationality patterns of modern societies do not necessarily fit with the rationale and concerns of ancient communities. It is therefore necessary to admit the limitations of ethnoarchaeology in archaeological interpretation* (2014:116)

Accordingly, ethnoarchaeology requires appropriate research design, community who fit with the subject under investigation, long term field work, knowledge of the language the society being

studied and knowledge of archaeological remains (Gould, 1989; London, 2000). In addition to that, there must be a continuity of archaeological materials with the current material cultures (Gamble, 2001) which ethno archaeologists called Direct Historical Approach (Shrotriya, 2007; Temesgen 2011).

Moreover, Gould (1989) argues that ethnoarchaeologists should control themselves from ethnocentrism. Ethnoarchaeologists could suffer from a double kind of ethnocentrism; ethnocentrism from etic view on the culture being studied and the desire of the researcher to see the past human behavior on the ground of the culture being investigated.

Though there are critics against ethnoarchaeological approach, investigation of contemporary society make available information which is siginificance for interpretation human past(Kalentzidou, 2000; Temesgen, 2011). In the case of historical reconstruction archaeologist could use literary sources for the purpose of identification of archaeological remains, in pre and protohistoric contexts however archaeologist must depend on inferences using analogy (Ashmore and Sharer, 1996) since archaeological interpretation is dependent on inferential reasoning (Manibabu, 2005).

2.2. Ethnoarchaeology of Pottery and Its Implication in the Study of the Past

The primary aim of archaeological investigation is to interpret and reconstruct various aspects of human past through material remains preserved in the archaeological record (see, Fagan, 1975; Ashmore and Sharer, 1996; Feinman and Price, 2001; Renfrew and Bahn, 2008; Kramer, 1985). In fact, pottery provides a clue about manufacturing techniques, consumption, distribution, use and discard (Shrotriya, 2007; Silva, 2008) and aid to build chronology, identify style zones, and explain migration of communities and interaction between regional levels, household size, economic differentiation, craft specialization and social structure (Kramer, 1985; Arthur, 2000) of the prehistoric society. However, as has been stated by Kramer (1985), pottery production, distribution, use, discard and change are diverse and complex cultures so that observation of the contemporary potters aligned with their material culture is really essential.

Archaeological investigation of potsherds through ethnoarchaeological approach was launched in western world since the late 19th century (David and Kramer, 2001; Stark, 2003). Pottery

ethnoarchaeology is an ethnographic study of pottery to appreciate the interaction between human behavior and variation of material cultures among contemporary societies with intent to archaeological interpretation (Kramer, 1985; Nyamushosho, 2014). This correlation between material remains and contemporary human beings strongly requires identification of the process of production activities that potters could share, in the past and present (Arnold, 1985).

Ethnoarchaeological study of pottery has such a wider scope as production, taxonomy, vessel function, consumption and distribution, durability, recycling and disposal, labor division, learning, style, ethnicity, technological and stylistic change of ceramics (Kramer, 1985; Stark, 2003; Skibo, 1999 in Silva, 2008) which could have archaeological significances (Skibo, 1999 cited in Shrotriya, 2007; Silva, 2008; Sullivan III, 2008; Santacreu, 2014).

Investigation of contemporary pottery production is fruitful to distinguish place of potter's workshop for it could have containers or structures used for clay storage and preparation, non-movable water and clay containers, firing areas or kilns, wheels, wheel pits, and platforms. In addition, compared to non-potters residences, pottery working shops often could have large sherds and pottery debris as damaged and broken pots are stored for reuse in their work. The production site of traditional potters is mostly found where they live and suggest that the rubbish sherds in potter's household are unique both in quantities and types (Kramer, 1985). Thus, they are valuable for archaeological investigation. Not only has this, ethnoarchaeological investigation of pottery also offer an important understanding of the relationship between space use in production and the degree of production intensity (Kramer, 1985; Underhill, 2003). This could have an archaeological significance to identify whether the production was intensive or not. Furthermore, Tobert (1985) in Gedef (2005) claims that information like linguistic affiliation, group size and other cultural features embedded in archaeological remains can be addressed through ethnographic study of the culture attached with contemporary pottery.

However, as explored by Rice (1996), archaeologists who investigate current pottery should consider that the current phenomena of pottery production methods may not be necessarily applicable to explain the cultural aspects of pottery production among the prehistoric societies. Thus, archaeological research on contemporary pottery production requires intensive observation, long term field work, appropriate community who meet with the objective of the

study under investigation, knowledge of language of the community, and so on. In such type of research prior emphasis should be given to the continuity and discontinuity of the design patterns, size, function, longevity, recycling and disposal, production, manufacturing and stylistic change and firing technology of pottery. This could help to establish development stages in a certain zone (Shrotriya, 2007) and a means to interpret past ways of life through material culture.

Pottery continuously produced in traditional way throughout the globe remains a major art today (Beek, 1984 in Debebe, 2007; Shrotriya, 2007; Renfrew and Bahn, 2008). Consequently, many scholars draw their attention to conduct ethnoarchaeological research in Africa particularly in sub-Saharan countries (David and Kramer, 2001) because the continuity provides them to utilize ethnoarchaeology as direct historical approach (Mclntosh, 1994 in Stark, 2003). Like in most African societies, the continuity of traditional pot making is clearly observable in different parts of Ethiopia.

2.3. Previous Studies of Pottery in Ethiopia

2.3.1. Archaeological Discoveries

In Ethiopia a number of sites bear abundance pottery fragments. However, most of the sites are from northern Ethiopia (Barrnett, 1999) as historical archaeological research in Ethiopia was concentrated in northern part of the nation particularly in Aksum and its environs over a long period of time (Finneran, 2007; Temesgen, 2011).

In southern Ethiopia, evidences of pottery were discovered in Yabello (Girma, 2001), Moche-Borago (Gutherz et al… 2000 in Finneran, 2007), Melka-Kunture, at the locality of Wofi 2 (Makonnen, 1984 in Finneran, 2007) .

An archaeological excavation conducted in K'aaba and Bel K'urku'mu sites in Benishangul-Gumuz region of western Ethiopia revealed variety of potsherds (Fernandez et al.2007). Some decoration treats of the discoveries revealed similarity with pots discovered in Sudan.

Evidence of pottery remains in eastern Ethiopia were discovered from the sites of Lake Basaka (Clark, 1982 and Brandt, 1982 cited in Gedef, 2005), Porc-Epic, Laga Oda and the Macho and Waso sites of Lake Ziway (Finneran, 2007). Potsherds which have some sort of affinity with

Aksumite wares were excavated in Natchabiet and Lalibala cave sites of northwestern Ethiopia (Dombrowski, 1971). She states that the sherds bear similarity to the clay objects that are available in the study area today. Klein (2007) also uncovered potsherds with slipped, burnished and smooth surface in Abawara Giorgis site in Gondar. The sherds besides consists tempering materials like Quartz, mica, grog and ash.

Vast evidence of archaeological potsherds has been unearthed in archaeological sites of Northern Ethiopia in general and Aksum and its surroundings in particular. Accordingly, the sites of Ona Enda Aboi Zewge and Ona Nagast bear a significant evidence of potsherds tempered with Quartz, mica, and ground stone (Bard et al.1997). Potsherds that were dated back to 3rd and 4th MBC were discovered at Gobedra site, few miles west of Aksum (See, Chittic, 1977 cited in Gedef, 2005). In Gobedra some decoration patterns of the sherds have some sort of similarity with pottery remains unearthed from southern Sahara and Nubia. Besides, ceramics uncovered from Yeha have also connections with C-Group, Kerma cultures of Nubia (Phillipson, 1977 in Gedef, 2005).

An archaeological research carried out at the Holocene site of Temben came up with the evidence of potsherds with tempering materials of fractures of rocks and quartz. The sherds in addition bear similarity to Atabi Tradition of Sudan and this would likely suggest contact with the low lands of Aqordart and eastern Sudan (Agazi, 2001).

Evidence of pottery remains was also excavated from Quiha archaeological site, about 37 km south of Hintalo-Wajirat district. Some of the findings have some sort of resemblance with pre-Aksumite pottery. Besides, the comb-stamp decoration pattern exhibit on the surface of the sherds indicates similarity with the central Nile valley and parts of North Africa as well as Lake Turkana Basin.

2.3.2. Ethnographic and Ethnoarchaeological Studies

In spite of the fact that a number of potsherds were discovered from Ethiopia in general and its northern part in particular, little has been made on ethnoarchaeoloical investigation of contemporary crafts in general (Temesgen, 2011) and pottery crafts in particular (Arthur, 2000).

Pottery crafts in Ethiopia, in general, were described by Cassiers in 1971. Cassiers (1971) described the types of raw materials and manufacturing techniques, gender roles and the social status of potters and the impact of modern industrial products on pottery. According to Cassiers (1971) pottery making is female's task and performed entirely by hand and those who engaged in the craft have low status. Nevertheless, the study did not examine the contribution of pottery for archaeological interpretation and each steps of pottery production which could have archaeological significance were not described in detailed.

In some villages of central Ethiopia, Debebe (2007), Mulu (2007) and Takele (2007) had under taken their research on contemporary pottery producer communities. Their emphasis was, however, the role of pottery in the livelihood of the society. They said nothing about archaeological implication of the contemporary pot making and did not document the overall operational sequences of pottery production.

Though Pankhurst (2001), Gezahegn (2001), Nahu senay (2001) and Woldeselassie (2001) described about the potters found in different localities of southern Ethiopia, their focus was on the socio-cultural and economic aspects of the craft. Potters in southern Ethiopia, according to the mentioned authors, are out caste groups. Similarly the work of Kaneko (2005, 2012) among the Ari in southwestern Ethiopia was focused on learning networks and firing techniques of pottery.

Research among the full time specialists of traditional potters of Gamo, southern Ethiopia made by Arthur in 2000 revealed an ample data about the overall features of contemporary pottery production. The study clearly provides data about the types of raw materials and means of their procurement and pottery production, distribution, use, reuse and discard. He also studied the way how individuals learn the skill of pottery making and social status of the potters. According to him, the task of pottery was preserved for women and individuals can learn the skill of pottery making from their mother's, mother's-in-law and neighbor potters. He further noted that though potters have low status within the majority of non-crafts, their products play an important role in the day-to-day activities of the societies for cooking, transporting, storing, brewing and other activities. Sometimes fermentation process from high status food by wealthy households leaves mark on the walls of the interior part of pots. This could have an archaeological significance to understand function of pots as well as socio-economic status of the communities.

In south western Ethiopia, some traditional potters were studied by Bula (2006, 2011) and Tadesse (2014). In his ethnoarchaeological research of pottery among traditional potters of Wallaga, Bula (2006) studied and documented the whole processes of pottery production. He also presented the socio-cultural and economic aspects of pottery production. According to him, pottery is manufactured by women and they are out casted groups in Wallaga. According to Bula (2011) potters use *teff* straw, sand and crushed potsherds as tempering material in addition to clay. Potters also follow ritual practices while gathering clay. Another ethnoarchaeological study conducted on the traditional potters of Korkee village in Wallaga zone indicates the technological, socio-cultural and economic aspects of the craft of pottery and its possible archaeological implications. In Korkee pots have economic, ritual and religious implications. According to him, the potters are generally utilized black, red and reddish brown clays and the common tempering material is finely crushed potsherds though some uses sand as well. Pottery objects have a range of values in the day-to-day activities of the societies of the study area. Moreover, some functions caused pots to develop abraded surfaces and this could have an archaeological contribution for understanding the function of pots. Nevertheless, the makers have long been marginalized and prejudice by the non-potter societies (Tadesse, 2014).

Gedef (2005) conducted pottery ethnoarcaheological study among the traditional potters of Gondar. He investigated the technological, socio-economic and cultural aspects of pottery production. The study has shown the whole operational sequences of pottery production in the study area through comparison between three ethnic groups- the Amharic speaking peoples, Bete Israel and the Kemant. He suggested that despite some variation in the types of raw materials and their acquisition and preparation, there is no notable variation in the general process of shaping, decoration, drying and firing process and even the tools and techniques that potters utilize across the region. Moreover, the terminologies given to different parts of a single pot and pots in general are virtually the same throughout the region. Consequently, he concludes that, despite the availability of some differences, none of these has been attached strictly with a sense of ethnic differences in the region. The technological, socio-cultural and economic elements of the craft cannot represent any marked boundary across the different peoples of the region. Thus, it would likely suggest the three ethnic groups of Gondar have similar material culture, dietary habit as well as socio-cultural team and craft. Besides, potting is the task of females and potters

are insulted and despised by non-crafts. He also made an attempt to establish the potential archaeological contribution of current pottery making.

Not far from the study area of Gedef, Hewan (2012) made an attempt on Beta Israel potters but gave emphasis on the technological variation of hand made and wheel made potters. She explained the technological aspect of ceramic production in the study area.

Lyons and Freeman (2009) and Lyons (2014) conducted their investigation on contemporary potters of eastern Tigray. However, their concentration was on the socio-cultural aspect the potters. According to them, potters are ascribed with low position in the mainstream society. Similarly, Lyons and D'Andrea (2003) carried out research on griddle in Addi Ainawlid. Accordingly, griddle baking was invented with domestication of indigenous species such as *Teff*, finger millet and other starchy foods. Nevertheless, the study lacks detailed description on the procedures of making griddle and its scope was very limited, restricted to griddle.

In southeastern Tigray, Messele (2006) conducted research that has connection with potters in Saharti- Samre. However, his focus was on the social status of the crafts, and according to him pottery crafts are despised and marginalized by the mainstream society of the area. In the same zone, though Tilahun (2013) in his senior essay thesis explained the whole activities of pottery making in Hintalo-Wajirat on the bases of selected pottery maker villages and tried to shade a light about the potential archaeological significance of his study, the research lacks detailed investigation and the scope is very narrow. This, thus, indicates both of the districts need further investigation.

Chapter Three: Data Presentation and Description

3.1. The Chaîne Opératoire of Pottery Production

Pottery making in the study area, in general, is performed through the following processes: raw material procurement, paste preparation, forming and shaping of vessels, making decoration, drying, polishing and firing. Once pots are fired, they are supplied to market, but some pots can also consume for one's own household use. These processes of pottery production are accomplished step by step according to the working schedule which potters set out.

In the selected villages, women engage in various tasks of pottery production throughout the week and in each day of the week they carry out at least one task among the stages of pottery production. Across the entire villages of the study area, potters should have completed all necessary activities related to pottery production one day before the local market day. Accordingly, they establish weekly working schedule based on the local market day they attend weekly. As it will be discussed later, except in Edaga Arbi, where the local market is on Friday, in the other villages the weekly market is on Saturday. As far as the schedule is market based, potters of Addi Hayla, Gawee and Ara have more or less similar working schedule, but slightly different from those of Edaga Arbi potters. Despite the difference and similarities of pottery working schedules among the selected villages, the schedule is workable for pots in which their entire process is able to complete within the days before the weekly market day. In addition, seasonal variation and religious holy days celebrated by the Ethiopian Orthodox Tewahido Church disrupts the schedule. Apart from this, two tasks, for instance, paste preparation and forming of pots as in the case of Edaga Arbi, may overlap at the same time.

Having the above mentioned variables in mind; potters have generally perform their pot making tasks based on the following weekly working schedule.

Activities Related to Pottery	Pottery Making Localities			
	Gawee	**Addi Hayla**	**Ara**	**Edaga Arbi**
Clay extraction	Monday morning	Monday morning	Monday morning	Friday afternoon
Paste Preparation	Monday Afternoon (MA)	Monday afternoon	Monday afternoon	Monday morning
Forming	Tuesday	Tuesday	Tuesday	Monday afternoon and Tuesday morning
Drying	Wednesday - Thursday	Wednesday - Thursday	Wednesday - Thursday	Tuesday afternoon-Wednesday
Polishing	Friday Morning (FM)	Friday morning	Friday morning	Thursday morning
Firing	Friday Afternoon (FA)	Friday afternoon	Friday	Thursday afternoon
Selling	Saturday (SD)	Saturday	Saturday	Friday

Table 1. Weekly working schedule of pottery production

3.1.1. Raw material Procurement

Temesgen (2011) pointed that acquisition of raw material is generally non-anthropogenic stage in which humans interact with their environment to acquire something which they need. In relation to pottery production, it is the interaction of potters with their surrounding environment to collect raw materials used for pottery making.

In the study area clay is the principal component of pot making. Except in Ara, where it has gray color, the clay is black in the other villages. Regardless of its color difference, the clay throughout the selected village is locally called *Meryet*. According to informants, Asefu, Azmera and others, it is difficult to get the desirable pot solely from clay (*Meryet*) unless other ingredients are added to the clay paste. Thus, potters utilize sand as temper so as to enhance pots strength and to success in the time of drying and firing process. The sand which has coarse grained nature with shiny brown color is more or less similar across the selected villages. It is

locally called *Hutsa*. In addition, in Gawee donkey dung locally called *Fandya Adgi* is used as temper. According to informants, adding donkey dung into clay paste improves pots strength. However, such type of temper is workable only for jars, such as *Genfe-e* and *Gombo*. Using such type of temper for the making of small objects like beaker (*Qil*) and coffee pots (*Jebena*) is not advisable as it may cause such objects to have black color while firing. According to informants, Taemo, Twres, Weyzer and others, unfired broken pot is also reused as temper.

Interview with potters, Lemlem, Tsegay and others, indicated that in addition to the raw materials contemporary in use, previous potters employed fired sherds as temper. Furthermore, some informants witnessed that using fired pot as temper improves pots strength more than other inclusions. Nevertheless, it is not used as a raw material by contemporary potters. This is mainly because its preparation needs more energy and time as well. Moreover, my informant, Tsegay, further stated that in Gawee previous potters were utilizing donkey dung as temper while making jars in general.

Despite the abundance of clay, all types of clay soils are not utilized for pot making. To succeed in their working process, potters make great efforts in selection of workable and quality clays. During the course of selection, potters give emphasis to texture and color. Clay texture is verified by pressing in between fingers. Coarse- grained clay is not preferable at all. Clay that has shiny black and shiny gray color (the latter is only for Ara potters) with sticky nature is desirable. Not only through the mechanism of pressing between fingers, according to informants, there is also a general test performed by digging the clay to take sample to their working place to make vessel. If potters get it workable, the site will be used as their main source of clay for the future. As for clay, potters also seriously evaluate quality of sand, which is used as temper.

Potters across the selected villages travel different distance to bring clay and sand into their production areas. Despite the relative distance variation, all potters travel longer distance to get clay than they walk to gather sand. For instance, potters at Addi Hayla travel approximately fifty minutes west of their home village to bring clay from a site called Addi Deq Arkay. Potters of Ara and Gawee travel about forty and thirty minutes respectively to bring clay. Mai Randa, located west of their village, is the clay mining site of Ara potters whereas Mukuat Meryet, north of Gawee village, is the clay quarry site of Gawee potters. Potters in Edaga Arbi travel not more

than twenty minutes towards north of their village to bring clay from Walaku, the clay quarry site.

Compared to clay source areas, sand is located close to the working place of potters. Despite the fact that potters at all villages could travel not more than fifteen minutes to bring sand to their working site, distance variation from one village to another village is observable. Accordingly, potters at Edaga Arbi collected sand from a site called Addi Hanis, north of the village. It takes about eight minutes for potters to reach there. In Ara potters travel towards the east direction for about ten minutes to gather sand from a site called Kisad Mai Zora. Potters at Gawee and Addi Hayla, on the other hand, travel approximately fifteen and five minutes respectively to reach at Awardo Shimay and Quchina sand quarry sites respectively. Those who employ donkey dung as temper on the other hand collected it from neighboring homes or within domestic areas.

In general, taking into consideration the physical strength and residence house of the travseler within the village, potters travel uneven distance to gather pottery making raw materials.

According to informants, Tinseu, Tiblets, Azmera, and Shashu from the villages of Addi Hayla, Ara, Edaga Arbi and Gawee respectively, potters have been collecting clay from the presssent-day source area, but quarry site had changed across time. Furthermore, Weldu, who dwells in Gawee, speculated that potters had brought clay from Mukuat Meryet, the clay source area of potters currently found in Gawee village, which dates back to more than ninety years. An informant, Tiblets, also responded that predecessor potters extracted clay from Mai Randa, the current clay mining site of potters in Ara. Similar interview with Abriha in Addi Hayla shows the continued use of the source of clay, at Addi Deq Arkay.

With the exception of Edaga Arbi, the clay quarry site of each village is found out of arable land and as a result potters freely access it. In Edaga Arbi, however, about seven years ago the administrative office of the *kebelle* has distributed communal grazing lands to individual farmers near the potters clay source area i.e. Walaku. Gradually those who are allocated close to the quarry site changed it to farm land. Nowadays, owners of the land denied the potters the access to clay that was freely available before. Consequently, potters steal the clay sometimes at night or with serious challenge in the day time. Furthermore, informants claim that owners of the land filled the clay extraction hole with ash and/or other undesired materials in order to discourage

them. In the case of sand, however, all potters across the selected villages obtained it from local source out of farm lands and free of external challenges from others.

With regard to the means of raw material acquisition, generally, despite the problem with potters in Edaga Arbi village, potters freely dig out and bring both clay and sand without any payment like the former potters of the study area.

Once potters identified the source area of clay and sand, they go to the place and quarried with hoe and carried it or by loading it on donkey to the production site though I could not find the latter option of transportation in the time of survey. Though there could be taboos and rituals related to clay extraction in other areas, there is no taboo or ritual practice related to extraction of raw materials in the study area. Except holy days celebrated by the Ethiopian Orthodox Tewahido Church, potters can extract clay and sand at any time. Males usually take part in extraction and transportation of clay and sand besides women.

Pottery making in the study area is a seasonal activity. It is generally performed in the dry season of the year. According to informants, though agricultural practice during rainy season could have an adverse impact on pottery production, problems related to acquisition of raw materials in the rainy season makes pottery making difficult. During rainy season the quarry sites would be filled with water and easily contaminated by impure things. Furthermore, during rainy season the clay quarry site in Edaga Arbi covers by crops. Equally, acquisition of sand is problematic in summer season. Despite the challenges, small pots such as coffee pots and beaker could be manufactured during rainy season but less in number. However, the raw materials must be accumulated in the dry season of the year.

3.1.2. Preparation of Paste

According to informants, the future life of any pot is governed by the quality of paste from which it is formed. Consequently, attention is loaded over preparation of quality paste which begins in the quarry sites. At mining sites impure things such as gravel, leaf, unusable clay and sand are picked out and thrown away. Upper surface of the extraction site is not usable at all as it contains lots of impurities so that potters dig down by removing it. Potters responded that if clay is not kept from contamination of unwanted materials, pots that are going to be made will be broken

during drying and/or firing. Thus, potters seriously monitored their clay and sand from contamination of extraneous materials.

Once clay and sand are arrived at working site, potters proceed to the next step, i.e. exposed the clay and sand to sun- drying. Clay and sand are exposed to dry directly from the sun mainly if they have moisture content principally during the wet season. In the meantime of drying, sorting and removing of unwanted materials which begins in the quarry site are still continuing. Depending on the availability of sunlight and moisture content of the clay and sand, drying could take longer or shorter time.

When clay and sand are dried well, potters keep on to the next process. Accordingly, when the clay is dried well and cracked, it is, then, soaked in water in plastic containers. Except in Edaga Arbi, where potters begin making of pots immediately when the clay is immersed and became paste so as to attend the local weekly market on Friday, in the other villages the clay is left to soak for a night. In this process, potters kneading the paste by their hand so as to improve plasticity and its working quality and to remove unnecessary substance such as grits. At this stage the unfired potsherd (*Gele-e)* as temper is mixed with fresh clay.

Figure 2. Photo showing a potter immersing clay in water (left) and soaked clay (right)

In relation to sand, once it is dried, potters pounded it with stone, wood or other tool and finally ground it. The processes of pounding and grinding are locally called *Midugdag* and *Mithan* respectively. Those who employed donkey dung as temper thrashed it together with sand at this stage. Sometimes very little water is sprinkled over the sand if it is difficult to pound. Grinding caused the sand to be soft, easily workable and easily mixed with clay paste. Since large objects need more paste, sometimes potters do not grind the sand rather they pounded it as much as it gets fine texture. However, the sand for small objects such as coffee pot (*Jebena*), beaker (*Qil*), stew pot (*Disty*) and griddle (*Mugogo*) should have ground on flat stone or on grinding stone

locally called *Methan*. After that, the ground sand is sieved with dry sieve equipment locally called *Mihe,* and then mixed it with clay paste.

Figure 3. Photo showing a potter grinding (left) and sieving (right) sand

When the soaked clay is changed into the desired paste, potters bring out it from the container where it was soaked and placed it on a clean flat stone to mix it with ground/pounded sand. Irrespective of the unit of measurement, potters mixed proportions of two units of sand with one unit of clay which is similar throughout the entire region under exploration. Even those who tempered the clay paste with *Fandya Adgi*, besides sand, keep the proportion of clay and sand as others. While mixing, initially potters use their hand followed by pounding it with wood. This process is locally called *Milkaé.* As I observed, *Milkaé,* could take about ten minutes.

Figure 4. Photo showing a potter mixing clay and sand

3.1.3. Forming and Shaping

In Saharti-Samre and Hintalo-Wajirat areas, pot making is performed individually or with daughters and daughter's-in-law within a compound. When clay and temper are mixed proportionally and ready for further processing, potters begin to form the desired object. Except for the paste tempered with donkey dung, which is workable only for large objects such as jars, among all the localities potters asserted that different pots can be made from the same type of

paste. There is no particular paste intentionally prepared to make a specific object. Despite this fact, most potters became specialized in making of specific clay objects which are more or less similar with the products manufactured by the person from whom they had learned the skill. In addition, working experience has its own role in the types and quality of pots that a potter could produce in which, according to potters, pottery making skill increases through time.

In the study area, some pots like beaker are manufactured at one time without allowing them for partial drying either under shade or from the sun to complete their making procedures step by step. However, other pots, such as jars, stew pot, and kettle with various sizes, are made step by step i.e. starting from the base and then move upward towards the body and neck parts. In most cases, pots with more or less similar morphology, despite their size, require similar way of shaping. Besides, pot making requires working (supportive) base to protect the paste from contamination and to rotate the pot being processed instead of rotating the maker round the pot being shaped. Accordingly, different types of pots could require different types of supportive device. Potters from different localities can also use different supportive devices even to make the same types of objects. Accordingly, some are employed broken pot of the desired type while others use any broken pot or mold made of animal dung and sand.

Small jars locally identified as *Gombo and Kellewo* and bowl locally called *Zibdi* or *Geywe* are currently manufactured by potters in the villages of Gawee and Edaga Arbi, but they are not commonly produced and consumed as of before. According to the information retrieved from potters themselves, *Genfe-e*, clay jar used to sock skin, is currently manufactured in Gawee village. Nevertheless, I could not find potters while forming such types of clay objects (jars and bowls in general) as, according to potter informants, these are produced only by waiting order from consumers at this time. Though, except in Addi Hayla, large jars such as liquor jar locally called *Gene-e* and jars used to fetch water which is called *Ayno* are made across the selected localities, their production is currently almost ceased because of the infiltration of modern plastic and metal objects.

According to my informant, Asefu, in order to produce jars, potters employ broken pot of the same type to support portions of the vessel until the clay dries and supports its own weight. Potters then placed a ball of clay paste inside the device and hollows out the center of the ball through pinching and upward stretching up to some part of the body part of the pot being shaped.

Then, immediately after completion of the partial part, potters exposed it for partial dry for a day so that it can easily carry the remaining part of the pot which is in the process of making. The potter, then, starts to make the upper parts simply by adding the prepared paste through coiling; and then permitted it for partial dry. It is at this stage that potters polish and make smooth its internal wall by plastic and skin strip, chaff of maize and cattle hoof. Then, the 'neck', 'mouth' and 'ear' parts are added step-by- step with drying at each stage. Informants in Gawee (Asefu, Shashu and others) and Azmera from Edaga Arbi responded that the present day jar making procedure is more or less similar with what previous makers followed in making of the same types of objects.

Today, coffee pot which is called *Jebena* in the study area is commonly produced in Ara, Edaga Arbi and Gawee. In this regard, potters formed the base part at first and then move upward towards the mouth region of the pot. This procedure is more or less similar across the three villages mentioned above. Some sort of difference is, however, visible on the type of supportive device they use. Accordingly, potters in Gawee and Edaga Arbi placed the clay pate on broken pots of other types or small flat stone to make their coffee pot. They also made simply on clean surfaces. Furthermore, in Edaga Arbi potters employ an object made of cattle dung and sand which is locally called *Wezenti,* as their supportive base while forming coffee pots. However, potters from Ara employ broken pot of the same type i.e. coffee pot by placing upside down as their supportive device.

Figure 5. Supportive devices used to make coffee pot, *Wezenti* (left) and broken coffee pots (right)

Potters, in Edaga Arbi and Gawee, then begins forming by hollowing out the clay from the center by their hand to form a circle. In this case, the coffee pot under making is shaped temporarily

with short pedestal base that will be removed before firing. In Ara on the other hand, in order to produce the base and some part of the body part of the coffee pot, the paste must be put on the broken of the same type of pot which is arranged upside down so that the coffee pot has round shape from the beginning unlike in Gawee and Edaga Arbi where it has short pedestal base at first.

Figure 6. Coffee pot with round base (left) in Ara and short pedestal base (middle) and (rightI) in Edega Arbi and Gawee respectively

Stew pot (*Disty*) is commonly manufactured in Gawee and Edaga Arbi localities. In making stew pot, potters in both villages first placed a lump of clay on stew pot filled with sand. Then, they begin to open a hole at the center and stretch it upwards up to the rim part. Then, they leave it aside for the moisture to be released by putting under shade to arrange its rim and to add short handles made of clay ball.

Figure 7. Stew pots filled with sand used as supportive devise to make stew pot in Gawee (left) and Edaga Arbi (right)

Beaker (*Qil*) is one of the current clay products among potters of Gawee and Edaga Arbi. Potters in both sites use a special object made of animal dung and sand as a supportive device. The object has a conical shape with smooth surface and locally called *Dukana*. Then, the potter place the paste on the peak (proximal) of the device followed by pressing the paste downward until it gets the desired shape and size. The potter, then, pressed the back of the proximal part of the object being made through the base of an old beaker in order to get the base of the newly shaped beaker.

Figure 8. *Dukana*, a supportive device used to make beaker in Gawee (left) and Edaga Arbi (right)

Despite the presence of unequal number of griddle specialized potters at inter- village levels, griddle (*mugogo*) is commonly produced among potters of Addi Hayla, Edaga Arbi and Ara. Production of griddle is different from other objects. Except for griddle, all types of pots have more or less the same technique of shaping in which the paste is stretched upward by pinching, coiling, stretching after the establishment of the base part. Griddle is flat and is made mostly on a clean sand strewn surface. When the weather is wet, potters sometimes prepared a sort of stage locally called *Medeb* built with pieces of stone at its base and covered by sand. Moreover, potters among Edaga Arbi locality use dry objects made of cattle dung and sand as supportive device. The object is locally called *Mekodo*. This type of device is advantageous to move the griddle around following sun light.

Figure 9. Supportive devices used to make griddle, *Medeb* (left) and *Mekodo* (right)

Whatever the supportive device is, the potter puts a mass of paste on the working device and stretches the paste horizontally with her finger and palm until the intended shape, size and thickness of the griddle under making is acquired. In the meantime, there would be an addition or subtraction of paste to and from the surface of the plate under shaping respectively. The maker, then, will expose it for sun- drying. Since cracking is possible, potters are consciously attending it. If cracking happens, they paint it with a thin of the same paste.

Figure 10. Photo showing potters while shaping coffee pot (left), beaker (middle) and griddle (right)

Even though, potters give emphasis to prevent and minimize destruction, pots could break in to pieces in the course of shaping and forming. And these unfired broken pots are recycled with paste to make new pots.

In the course of forming and shaping the surface of the clay objects is smoothened by toolkits like cattle rib, plastic or skin strip, a rib- shaped dried stick locally called *Shink Ere*, chaff of maize and cattle hoof with some water to create a uniform slick surface.

Each parts of the formed and shaped pot have their own unique name similar with human body parts which is similar throughout the study area. The name given to different types of pots and

parts of a single pot is also more or less similar across all selected villages. For instance, potters called *Meankor* and *Kisad* for base and neck respectively whereas *Ezne-e and Af* represent the ear and mouth of pots respectively.

According to potters, Tekien, Tihesh, Tinseu and others, pots produced during the rainy season are relatively less in number than the pots that could be produced during dry season. Pottery production in the rainy season is not common mainly because of the problem of acquisition and preparation of clay, lack of sufficient sun light, lack of proper firing due to insufficient fuel and others.

3.1.4. Decoration of Clay objects

Once pots are formed in a desired shape, potters left their products for making decoration locally called *Mishilam* or *Muwqat* which is performed before drying across the entire villages selected for this investigation. In order to make the object ready for decoration, it should be left under shade for some amount of moisture to be removed.

Decoration on clay objects is performed at wet stage using tools like nail and other metallic objects, comb, pointed sticks, thorns, dry grass and through fingernail. Generally, potters across the study area decorate their clay products with a combination of incision, impression and appliqué techniques. All types of decorations are performed on the exterior surface of the pot in all selected villages. Decoration, in the study area, is more elaborated on coffee pots, incense burner and beaker than other objects.

Out of the current clay products, coffee pot is highly decorated with various decoration patterns. Accordingly, at Gawee, coffee pots are decorated with impressed appliqué line, cross designs formed by impressed and non-impressed appliqué lines, impressed and non-impressed clay ball appliques, multiple horizontal and zigzag incised lines and "**Λ**"- design made of four to six incised lines in general. An applique line, **V**- shaped and triangular designs made by short diagonally incised lines and grouping of zigzag incised lines overlap three horizontal incised lines are common decoration patterns exhibit on coffee pots at the locality of Ara. In Edaga Arbi grouping of incised wavy and horizontal lines and fingernail impression on appliqué line decoration patterns are made on coffee pots.

Figure 11. Some decoration patterns on coffee pots in Gawee (left), Edaga Arbi (middle) and Ara (right)

In Edaga Arbi sometimes stew pots display clay ball appliques just overlap the rim part. In the same locality incense burner is decorated by zones of incised lines vertically cut by dotted lines, grouping of wavy and zigzag incised lines and fingernail impression lines. On the other hand, incense burners from Gawee are decorated by clay ball appliqué at the lip of the object and usually by a single incised on its pedestal part. However, decoration is not applied on the surface of incense burner among the products of Ara village.

Figure 12. Photo showing some decoration patterns on incense burner in Gawee (left) and Edaga Arbi (right)

Beaker, the current common material culture of Gawee and Edaga Arbi potters, is decorated with multiple of incised lines bellow its mouth and above its sit parts. Sometimes such types of objects are also decorated by a single incised line.

Figure 13. Photo showing decoration patterns on beaker in Edaga Arbi (left) and Gawee (right)

Fingernail impressed lines, fingernail impression on appliqué lines and do-dot lines are rarely found on the exterior surface of small jars such as *Kelewo* and *Gombo* and medium sized jar like *Genfe-e*.

Whatever the types of decoration patterns are, according to informants, pots are decorated to get beauty in order to attract consumers. In fact decorated pots are generally expensive to buy compared to non-decorated ones.

3.1.5. Pre- Firing, Firing and Post-firing Treatments

After forming and decoration is made, clay objects must be dried. This is done by keeping them away from direct sun light for a day so that they dry at a uniform of temperature. This is mainly because immediate drying directly from the sunlight may cause vessels to crack. After this initial drying, pots are exposed to sun-drying. Depending on the size of pots and season, pots can be dried within a day or will require more days. Keeping the size and types of pots constant, drying time require more days during rainy season than in dry season.

Figure 14. Pots while drying, griddles (left), beakers (middle) and incense burners (right)

When pots are dried, then potters proceed to the next stage i.e. polishing, locally called *Mikiwah*, which is employed after the clay is leather-hard dry. Except in Ara and Addi Hayla, where griddle is polished with lamp soot after firing, all types of pots at production areas of the selected villages are polished before firing. Potters polish the surface of the pots using different toolkits. Potters in all villages employ pebble, cloth, water and creamy liquids like cooking oil and butter. Polishing is done by frequently rolling the pebble (*Enkuashe)* over the surface of the vessel and in the meantime potters use cloth immersed with small amount of water and oil or butter to smoothen the surface. Potters also utilize lamp soot to polish the baking surface of griddle.

Figure 15. Tools used to polish and smooth pots

Figure 16. Potters while polishing coffee pot (left) and griddle (right)

When pots are dried and polished, they must be fired which is locally called *Mitkuas.* According to informants, sometimes there is a practice that pots are exposed to further drying either by placing them close to fire in the kitchen house or other place or by inserting burnt animal dung or fire from charcoal inside them in order to remove moisture and to increase efficiency at firing process. This is done, according to informants, mostly during the wet time.

Pots manufactured within a week are ready to fire and it is a general practice that occurred every afternoon one day before the day of the local market where potters attend weekly. Firing of pots is performed within the potter's respective village in a shallow pit which is locally called *Mofin't* mostly in the backyard of their compound. Rarely firing pits are located outside but not far from potters' compound. Every potter has its own firing pit. Nevertheless, the depth and width of the

pit and its spatial location relative to potter's houses be it in the compound or outside the compound varies from place to place. Firing pits out of potters' compound are mostly found just in front of the compound of potters whereas firing pits in the compound are situated at back yards. In both areas the firing pit is found not more than sixty meter away from the residence house of the potters. Roughly, the depth and diameter of the pit on the other hand is not more than forty centimeter and one meter respectively. Over the prepared pit, potters first arrange a mass of dried cattle dung. The potter, then, sprinkled hot red color of fire of cattle dung which is called *Akor* or charcoal on the arranged dried animal dung and waited until it is fired. While fired, the potter arranges her pots in the ditch (pit). Again at the top of the pots, which are already in the pit, a mass of dried cattle dung is placed and left for a night.

Figure 17. Firing process of pots

Except for griddle, all pots are fired in a pit. Firing of griddle is different from others. No pit is needed to fire griddle. In Edaga Arbi and Ara griddle is fired by leaning two or three griddles together in order to keep them upright and the fire with shrubs and culms of maize and sorghum lit in between them. In this case the back surface of the griddle is faced towards the fire while its interior (baking) surface has not direct contact with the flame as its back surface. On the other hand, in Addi Hayla griddle is fired by placing on stove attached to the ground or on three to four stone hearths. The fire is, then, placed inside the stove or in the three stone hearths. On either of the devices the back surface of the griddle is placed towards the flame. Simultaneously, the center of the baking surface is fired by small amount of animal dung. This is mainly because, according to potters, the central part of the griddle needs more fire because it is believed to be relatively thicker compared to the other parts.

Figure 18. Firing process of griddle in Edaga Arbi (left) and Addi Hayla (right)

As far as my observation is concerned, griddle in Addi Hayla is highly fired and has reddish back surface compared to the griddles manufactured in the other griddle maker villagers.

Figure 19. Backing Surface of Griddle in Ara (left) and Addi Hayla (right)

Besides, griddle in Addi Hayla bears red color on its central part of its baking surface but not in the other villages. This is mainly because, as stated before, the center of the interior surface is fired with small amount of animal dung (see figure, 18 (right).

Figure 20. Newly fired griddles in Edaga Arbi (left) and Addi Hayla (right)

Furthermore, it is possible to distinguish between newly fired griddles but not offered any service before and griddles that have been in use previously.

Figure 21. Baking surface of newly fired griddle (left) and griddle in use (right)

According to potters, the amount of fuel used to fire pots and the duration of firing is determined by such variables as the number and thickness of pots and season. Small pots generally consume small amount of fuel and time as well. Assume that the size and thickness of pots remains constant, firing in the rainy season is difficult as there is shortage of fuel, the fuel could become wet and does not burn properly and moreover the firing pits could become wet.

As a result of firing, pots could get one or more than one color. Thus, in the study area, pots bear red, black and both black and red colors. Informants claim that red color is an indicator of full firing treatment while pots can get black and gray color if there is lack of enough firing duration. This could happen either intentionally due to the interest of the maker or lack of proper firing technique. Potters at Ara, for instance, intentionally treat their coffee pots to have black color as black color is demanded by consumers in the local market. To get black color, pots being fired must be covered by donkey dung after the fire became red.

Potters utilize dried shrubs, straw, chaff, grass and animal dung that have been collected freely from agricultural and grazing lands found some distance away from their respective villages as their sources of fuel for firing of pots instead of cutting trees to prepare firewood.

In the study area clay vessels, in general, are fired the day before they are taken to the local market. Accordingly, pots in Gawee, Ara, and Addi Hayla are fired on Friday afternoon and left for a night to attend the local market on Saturday. However, potters of Edaga Arbi fire their clay objects on Thursday afternoon and left for a night as the local market is on Friday. Though males assist in collecting fuels, the entire process of firing is solely accomplished by females.

Once properly fired, some pots such as griddle could be polished after firing. Except in Ara and Edaga Arbi where potters polish griddle by soot after firing, post firing treatment, according to

informants, is mostly performed in the house of consumers. In the process of firing, pots could be broken and discarded in the compound of producers not far from firing areas.

3.2. Marketing of Pots

After pots are fired, some products can be consumed for one's own household, but most of them will be ready for market. In addition to its household function for potters themselves, pottery is distributed to non-potter consumers either directly by the makers at production and local market areas or through intermediates (pot traders) in other areas. In the study area pots are manufactured primarily for sale indeed it serves as a commodity of exchange. Thus, potters take their vessels to local markets at the weekly market day. The major means of transportation in the local markets is human though some potters use animal portage. In the local markets, potters are the primary market sellers. Potters themselves do not travel to distant market areas instead are restricted to local market days held near their respective home villages for they have not enough money to pay for transportation and interrupts their weekly working schedule. But, some husbands or male sons of the potters in Addi Hayla transport griddle to Finarwa and Jiba about 35 km south east of their home village.

Except in Edaga Arbi, where market day is on Friday at Edega Arbi town, potters in the other villages take their products to the weekly market on Saturday. Potters from Ara and Addi Hayla have only one local market on Saturdays at Addi Gudom and Samre towns respectively. Potters of Gawee can sell their products at Gjet, Samre and Yechila towns, but the market day in the towns is at the same day, on Saturday.

Figure 22. Potters taking products to local markets

Though potters sell their clay products at local markets close to their production areas, some pot traders purchase pots and re-sell them into markets outside of the immediate areas. Those who

are involved in pottery trade, thus, generate their income from pottery and play a significant role in the distribution of the products of pottery crafts. As a result, some objects could be distributed to a distant area over others. Pot traders utilize vehicle for transportation of their market goods (pots).

According to informants, generally quality, small and demanded pots are distributed far from production area than larger and less demand objects. For instance, small pots produced in Gawee village are distributed about 70 km towards southwest direction as far as Sokota town in the Amhara Regional State. Besides, clay products such as stew pots and coffee pots of these potters are also transported to about 30 km towards east of Samre town as far as Dela town in southern zone of Tigray. Besides, the products of Gawee are currently distributed towards northwest as far as Yechila town. However, at Yechila, according to informants, similar products are supplied by other producers and thus there is competition. Pots manufactured in Ara are distributed as far as Hintalo town about 20 km west of Ara. Besides, according to interviewed potters, consumers also bring the clay products of Ara such as large jars as far as southern tip of Hintalo Wajirat district. This could probably be the reason for the discovery of potsherds at Gira'abo Niguss and Gira'abo Giden, about 25-30 km south of Ara, in Addi Keyih *Kebelle.* On the other hand, in Edaga Arbi area, though pots were circulated as far as Addi Gudom town, about 25 km east of the production village, their distribution is continuously decreased over time because of the decline of pot traders as a result of the diminish of demand of clay objects.

Regardless of the areal distribution of pots, the size of pots cannot be always determined their distribution; instead the presence or absence of a particular clay object in an area to where it is going to be distributed could be the chief factor for its distribution. This is the reason why some male relatives of potters in Addi Hayla are taken griddle to Finarwa and Jiba. In addition, according to informants, large jars manufactured in Ara were distributed as far as about 25-35 km to the south direction of the village.

Due to their functions are being covered by the introduction of durable and light plastic and metallic objects, the demand is continuously decreasing through time. As a result, the geographical distribution of pots is continuously decreasing as the number of pot traders diminish from time to time

Though, according to informants, pots were exchanged in kind, today the medium of exchange is in cash as with other goods. The price of pots has shown some variation from place to place, pot to pot and season to season. Accordingly, prices of pots increase with increasing distance from production areas. For instance, the price of griddle at production area in Addi Hayla village range from thirty five to forty birr, while at Samre town (local market) the price is range from forty to forty five birr and at Finarwa and Jiba the price reaches up to 70 birr. The same variation of price is also true for other types of clay products in the other villages.

Seasonal variation of climate is another factor for variation of price of pots, even for the same types of products. Thus, pots are slightly cheaper during the rainy season than dry season for consumers could not have enough money to buy, and social ceremonies like weeding and commemoration ceremonies, epiphany and Easter which would likely increase the price of pots are not celebrated in this season. In addition, the main customers of potters, rural agriculturalist, could not frequently come to market and there is a problem of transportation of pots during the rainy season. Inversely, as interviewed potters responded, the amount of time, energy and resources consumed for pottery production is more expensive during rainy season than in the dry season.

The size of pots has also shown remarkable difference in price. As such, larger vessels are expensive to buy. Despite the price of larger objects, potters prefer making small pots because larger objects are more expensive to manufacture as they need more energy, clay, fuel and takes longer time to dry. In addition, surface treatments such as decoration and polishing have variation in price of pots. Accordingly, decorated and finely polished pots in general have higher price compared to non-decorated and roughly polished pots in all villages. For instance, in Ara potters sold decorated kettle two birr more than the price of non-decorated one.

Currently, according to the information retrieved from potters themselves and my observation, price of pots also show some variations at market places of different localities as shown in the following table.

Types of Product	Average Price of Pots at Local Markets			
	Samre	**Gjet**	**Edaga Arbi**	**Addi-Gudom**
Griddle (*Mugogo)*	45	-	40	40
Coffee pot (*Jebena)*	15	13	12	13
Stew pot (*Disty)*	10	15	9	-
Beaker (*Qil)*	2.50	2	3	-
Incense burner (*Meteshi Etan* or *Bierir)*	10	12	8	5
Stove (*Mendded)*	20	20	15	11

Table 2. Price of pots at local markets

According to informants, the average price of pots also continuously increases from the imperial period up to present. For instance, the average price of griddle was fifty cent and two birr during the Imperial and Dergue periods respectively across the griddle makers of the study area. However, the average price of griddle at this time is forty birr.

With regard to the location of potters at market places, they have a separate place to sell their clay products at the edge of the market places. Even those who recently are engaged into the craft sell their products at the margins of the market places. According to potters they prefer the area to minimize the risk of breaking which would likely occur at the center of the market places for there are a lot of people. Moreover, it has been observed that potters with the same types of products are sitting together.

Figure 23. Pots at local markets

Despite their outskirt location so as to eliminate pots from damage, the risk of being broken cannot be avoided absolutely. Consequently, pots are broken and discarded at market places.

Figure 24. Discarded pots at market places, in Samre (left), Edaga Arbi (middle) and Addi Gudom (right) towns

3.3. Household Function of Pots

In the study area, different kinds of pots are produced and each of the products has a single or multiple functions. Coffee pot, griddle, stew pot, beaker, bowl, stove, incense burner and small jars are produced in the study area in general. In spite of the fact that household vessels have gradually being substituted by plastic and metallic containers, people still utilize pottery for the purpose of preparing, storing and transporting services. Pottery uses on daily life of the society for cooking, baking, brewing, storing, and other functions. Different pots have different functions, but sometimes different objects may be used for the same purpose for it could be possible to storage dough in bowl and in small jars. Similarly, both small jar and liquor jar are used to brewing local beer (*Sewa*). Pots are generally manufactured for the following intended functions; for preparation and process of food items and drinks, storing liquids and solids, and transportation.

Griddle as elsewhere in the country is used for baking local bread (*enjera*) prepared from dough of *teff*, finger millet, wheat, barley and maize. It is also important to bake white bread prepared from dough of wheat. *Enjera*, the daily consumption of the people in the study area, is prepared by griddle. There is no other object out of griddle which allows people to bake bread in the study area. Continuous use of griddle, according to informants, will become smooth and shiny black baking surface and burnt back surface.

Clay bowls are used to prepare and contain dough. In addition, they serve to store/hold grains and flour.

Small pots like coffee pot and stew pot have a great role in the day-to-day life of the society. Their spatial location is mostly found in the kitchen areas. Coffee pot is used for boiling of coffee in the time of coffee ceremony celebrated by group of families or neighbors'. During coffee ceremony incense which is prepared from locally available trees of different types such as *Bierir* is smoke in incense burner. On the other hand, though the intended function of stew pot is for preparation of stew (*Tsebhi*), it could also be used in parallel for preparation of porridge. Porridge is mainly produced from Teff and wheat.

The popular alcoholic beverage of the study area under investigation is locally fermented beer (*sewa*) which is prepared from sorghum, maize and finger millet. Such type of drink is widely served on social ceremonies such as marriage and other religious festivals. In such situations *Sewa* is prepared by large jars such as liquor jar (*Gene-e*). In fact the production of large sized jars is currently almost ceased I found such objects at the households of potters as well as non-potters still serving for preparation of alcoholic beverages. *Sewa* at family size can also be brewed by small jars such as *Gombo* and *kellewo*. Sewa, particularly in social and religious ceremonies, is serving by beaker (Qil). Besides, small jars could also serve to store solids, like grain and flour, and liquids such as dough and water. Similarly, people can use large sized jar (liquor jar) to store grains, flour as well as to hold water. The significance of pottery to soak animal skin along the hide workers is also noteworthy.

Some household services of pots left markers on the walls of the pots. For instance, pots used for processing and storing of local beverage (see, figure, 25 (right) and dough (figure, 25 (left) develop abraded/scratched features in their interior walls. In addition, some pots could be left with residues of crops and food items and their analysis could have an archaeological significance in reconstruction of the diet of the users.

Figure 25. Jars eroded in their interior walls

Generally, pots are essential in the households of every one and can have more than one function in their life time before they entered into the discard stage. Furthermore, even if pots are broken down they could be served further as supportive device to make the new pots. However, when pots became old, broken into small pieces and ceased their further function, they are left to disposal within the compound of the users and rarely outside the compound.

Figure 26. Pots discarded in the compound of potters (left) and non-potters compound (right)

3.4. Social Aspects of Pottery

3.4.1. Gender Roles and Learning Pottery Making

As elsewhere in the continent, pottery making in the study area is an occupation preserved for women. Sometimes men could assist women to collect raw materials and to transport products to market places. Otherwise, all activities are performed by women. Daughters could support their respective mothers in raw material collection, polishing, firing and transportation and selling of pots at market places.

In relation to learning, according to informants, individuals can learn pottery making skill at various ages from their mother's, mother's-in-laws or from neighbors without any formal instruction through observation. Most interviewed potters responded that they learned the skill of

potting from their mothers and mother -in-laws. In addition, potters learn potting skill out of their relatives through observation. For instance interview with Addi Hayla potters, formerly non-potters, indicated that they adopted pottery making through observation. They became part of the technology at least during the imperial period. Related to potters in Addi Hayla, informants, Tewelde, Abriha and others, claimed that there was a female potter who lived in Addi Hayla. Initially she came from somewhere from the west of the district of Saharti-Samre as ex- slave. Later on, she began to live independently in her own house. She had no land and husband. However, she had the skill of making of griddle. When people saw her while making she cried because, according to her, the pots will be broken. The products were sold in her working site, home. After sometime she passed away. Informants predicted that, probably it was after her death that Addi Hayla villagers begun to make griddle. This clearly indicates that learning is not limited from mother to daughter or mother-in-laws but also from others who are not tied by lineage or marriage.

Moreover, each potter informant was interviewed to deduce data as to why some body took the craft. Accordingly, all interviewed individuals responded that they turned into the craft when they were unable to feed their family because of insufficient return from agriculture.

3.4.2. How can a Person Eat another Person? : Responses of Potters

In Saharti-Samre and Hintalo-Wajirat districts, traditional pottery crafts are insulted, avoided and marginalized groups. Culturally, potters and smiths are under one social group and identify by the name evil eye/ "Buda" people and are considered inferior to the society. There is an assumption that the crafts have an evil spirit which passes through lineage. Consequently, pottery making and iron smelting has long been attached to evil eye/ *Buda* people. Others, who considered themselves "pure"/*Chewa*, do not perform this craft. Accordingly, Pottery making has long been considered as the job of evildoers. Nevertheless, recently wives of some farmers took the craft as part of their livelihood, such as in Addi Hayla and Ara. However, there is variation in attitude of the mainstream societies towards these recently engaged to the craft for they are not ascribed as evil eyed. This is because, according to non-craft informants, *"*they cannot eat others" like traditional crafts for they do not possess the evil spirits. According to the expression of the mainstream societies, people looked the crafts down because of their evil spirit through which they caused others to be sick and dead. Generally, majority of the non-crafts believe that

craftsmen have the power to kill or cause illness over others. Those recently engaged into the craft, too, have the same attitude towards the potters stayed for longer time in the craft.

In contrary, among the craft informants, Weldu and Dessalegn, strongly expressed their argument against the attitude of non- crafts by saying that:

> *Yes we know we are iron smelters, tanners and potters and we learn it from our ancestors. We took the craft for nothing else than for our livelihood. Except our skill we are not exceptional by any standard from other human beings. Expect God, "No one from us has the power to cause sickness or kill others". We all humans are equally born from Adam and Eve. So, 'How can a person eat another person?*

Moreover, in the study area, potters form endogamous. Marriage alliance with crafts is prohibited. Even they have the same occupation; those recently involved in the craft have no marriage relationship with those who stayed longer time in the craft. Consequently, those who are believed to be evildoers can be married relationship only with their social group. Though, some changing trends are on and off, the negative attitude towards crafts still predominantly exists.

3.5. Factors Influencing Pottery Production

In the study area the introduction of modern industrial products and the negative attitude of the mainstream society towards pottery artisans are the challenging factors of pot production.

The infiltration of plastic and metallic objects is the chief factor negatively affecting the production of pottery. Currently, various plastic and metallic containers are abundantly available at market centers. Despite their high price compared to clay objects, plastic and metallic objects became preferable over clay vessels. This is mainly because of their light in weight, less fragile and long durability. Consequently, the number of pots that could be produced is diminished from time to time. Except griddle, all clay objects are being replaced by plastic and metallic objects. This, thus, generally influence consumption and consequent price and distribution of clay products.

In addition, the non-crafts attitude towards the traditional potters has been adversely affected the continuity of the culture as crafts are not interested to teach their offspring's and equally the new generation is not interested in traditional craft works. Some sons and daughters as well as potters

themselves are described pottery making as a dirty work. This is because, according to informants, the income generated from pottery and the amount of energy that potters lose to make is not proportional. According to informants, Weldu and Tekle, the negative attitude towards craftsmen has negatively affected for the development of craft workers.

Seasonal variation has also its own impact on pottery production. According to informants, the amount and quality of pots produced in the rainy season are very low compared to the pots that could be produced in the dry season for there is a problem of acquiring quality raw materials, lack of enough sun light, insufficient firing fuels and moreover the firing pits could become wet. Moreover, in Edaga Arbi pot makers are suffering from accessing of the clay as their source area is covered by crops during summer season.

3.6. Survey of pottery Discard Sites

This ethnoarchaeological investigation on pottery production was also accompanied with survey of discard sites around the selected pottery making localities. Hence, three sites where pottery remains are identified. These are Tseanee, Tsaeda Kewhi and Gira'abo Niguss and Gira'abo Giden sites.

3.6.1. Tseanee

Tseanee found in Gawee village lies at UTM location of 0509875 Easting and 1465856 Northing with an average elevation of 1627 m.a.s.l. Approximately the site has an area coverage of one and half hectare. Today, the site is arable land though informants, Kebede, Weldu, speculated that it was grazing land up to the end of 1960s. It was after the same year which informants mentioned people begun to plough the area. According to informants, the area was believed to be inhabited by non-local communities called, *Kaila.* According to locals, those who came from *semyen,* south west of Gawee, though there is no empirical data about when and why they came to Gawee and settled in Tseanee. Instead, local people suggest simply saying that they came to the area during the "Orit period" which according to them means in the ancient times. According to my informants, Kebede and Mitslal, it was told that the *Kayla* had the skill of pottery making. Furthermore, informants indicate objects like diagnostic fragments of jars, griddle, stew pot, kettle, beaker and beads were discovered in the site. Informants relate that, the *Kayla* left Tseanee during the Italian occupation over Ethiopia and returned back to *semyen.*

Large number of potsherds mostly with red color is widely distributed and observable on the surface of the site. Besides, in order to make comparison with pots currently in production and use, samples were taken from a square of 8 m by 8 m. As a result, 257 sherds were collected; of which diagnostic specimens, consisting of rim (86.2%), handle (6.2%), neck (3%) and base (4.6%) sherds, were 65 (25.3%).

Hence, collected fragments were classified in terms of body parts of sherds and decoration and color. Rice (1987) noted that decoration is one of the approaches used for classification of pottery. Furthermore, scholars analyzed their ceramic discoveries among others on the bases of decoration and body parts of sherds (e.g. Alemseged, 2010 in Tadesse, 2014). I, therefore, employed parts of body sherds and decoration styles for classification of the sherds and summarized in the table below.

No	**Sherds**	**Total Sherds**
1	Rim	56
2	Neck	2
3	Handel	4
4	Base	3
5	Non- diagnostic	192
Total		**257**

Table 3. Typological classification of potsherds from surface collection of Tseanee

As indicated in the table (3), non- diagnostic sherds were the largest collections followed by rim sherds that constitute 74.7% and 21.8% respectively. The handle and base fragments are 1.6% and 1.2% respectively. The smallest percentages (0.7%) of the collections are neck parts.

The rim sherds have a thickness ranges from 1.5 to 0.2 cm. The average length of the handle and neck sherds, on the other hand, is measured 5.6 cm and 5.4 cm respectively.

From the total sherds (257), only 35 (13.6 %) fragments have decoration. As one can see from the pie-chart below, out of the decorated specimens, rim sherds have the largest percentage

followed by non-diagnostic sherds which constitute 68.6% (n= 24) and 28.6% (n= 10) respectively whereas the smallest percentage, 2.8% (n=1), is represented by handle. The neck and base parts has no decoration.

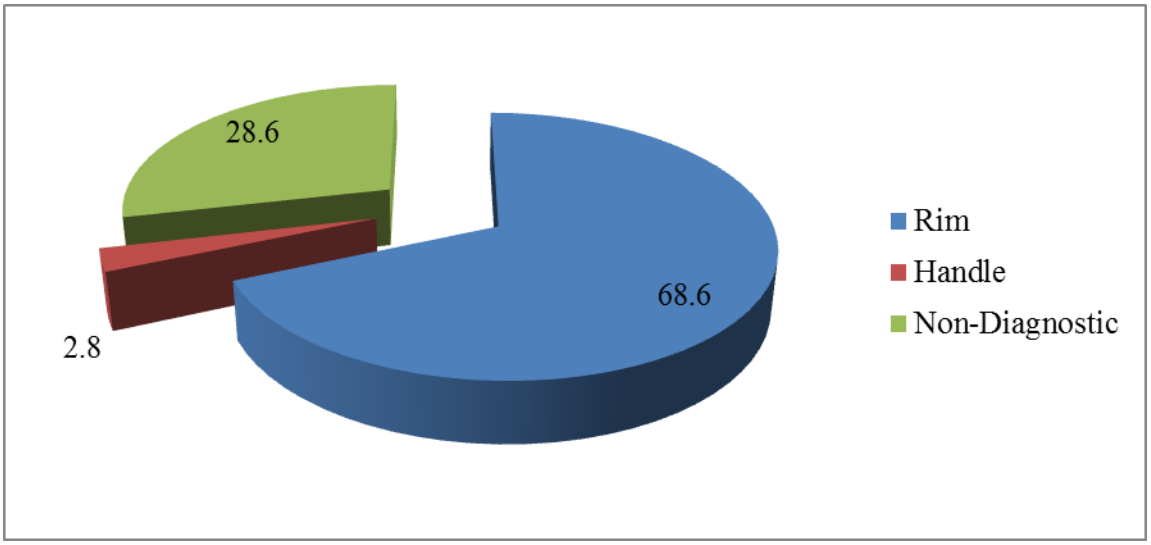

Figure 27. A pie chart showing percentage value of decorated sherds from surface collection of Tseanee

The rim sherds were decorated both on their exterior and interior surfaces though dominantly display on the former. In their interior wall, they were decorated by incised and dot-dot lines. Except two specimens, non-diagnostic sherds were decorated on their outer surfaces. Decoration types in the assemblage, in general, comprises crisscross incised lines, single and combination of horizontal incised lines, dot-dot lines, appliqué line, impressed applique lines, finger pinch on appliqué line and impressions on the rim. Among the decoration patterns, these days decoration style with incised line is widely distributed among the current potters of the selected villages. Particularly, grouping of incised lines and applique line are commonly found on coffee pots in the whole coffee pot making villagers under investigation. Currently, dot-dot line, applique line and impressed appliqué line patterns of decorations are rarely observable on surface of jars in Gawee and Edega Arbi villages.

Figure 28. Photo showing decoration on non-diagnostic (left) and rim sherds from surface collection of Tseanee

However, finger pinch on appliqué, incised crisscross lines, and impressions just on the rim types of decoration styles observable on the sherds discovered in Tseanee are not performed by current potters under investigation. Furthermore, the spatial location of the decoration on the discovered sherds is both at the interior and exterior surfaces.

Figure 29. Crisscross incised line (left), impression on a rim (middle) and finger pinch on appliqué (right) on sherds from surface collection of Tseanee

Figure 30. Decoration at the interior surface of potsherds from surface collection of Tseanee

Beyond decoration, the diagnostic sherds were also sorted based on their color. As discussed by Shepard (1956), among others color is helpful for the classification and comparison of pottery though "the components of clay and the atmosphere, temperature, and duration of firing,

absorption of stains during use, deposition of carbon in cooking over the fire, deposition of substances from the soil after disposal and leaching by soil waters could result pots to have various colors" (1956:103). In terms of color, the diagnostic sherds are classified into red, black and gray. However, the non-diagnostic sherds were dominantly red.

No	Type of Sherd	Colors of Diagnostic Potsherd			Total
		Red	Black	Gray	
1	Rim	46	7	3	56
2	Neck	2	-	-	2
3	Handle	4	-	-	4
4	Base	2	-	1	3
Total		54	7	4	65

Table 4. Color based classification of potsherds from surface collection of Tseanee

As indicated above in table (4), the red color is shared by the largest percentage of the diagnostic sherds followed by black colored sherds which constitute 83% (70.8% rim, 3% neck, 6.2% and 3% handle and base sherds respectively) and 10.8% (all are rim sherds) respectively. The remaining, 6.2% (4.7% and 1.5% of rim and base sherds respectively), are represented by gray color. While red color is available in all diagnostic sherds, black color is represented only by rim sherds. All neck and handle parts, on the other hand, are black in color. Gray color is represented by a single base and three rim sherds. Most of the non-diagnostic sherds, however, bear red color.

Most of the discoveries seem well burnished and fired. Probably, it would be due to sufficient firing temperature that majority of the sherds have display the same color i.e. red on their surface. According to their type, the diagnostic sherds belong to fragments of jars, shallow bowls with ring bases, beaker, probably coffee pot and lids of stew pot. Jars (small in size), beaker, coffee pot and lid of stew pot are produced by current potters in the study area as a general and Gawee in particular. However, making small bowls with ring bases is not in practice among the contemporary potters of the area under investigation.

Figure 31. Small bowls with ring bases from surface collection of Tseanee

The site also bears grinding stones predominantly the upper grinding stones. Some of the upper grinding stones found in the site, furthermore, have some morphological and size affinity with the current upper grind stone by which potters ground the sand, for instance in Gawee.

Figure 32. Upper grinding stone currently in use at Gawee (left) and found in Tseanee site (right)

3.6.2. Tsaeda Kewhi

This site is found in Gawee village at UTM location of 0512422 Easting and 1464359 Northing with an average elevation of 1854 m.a.s.l. It has approximately an aerial coverage of half of a hectare. Today, the site is neither arable land nor residential area. Nevertheless, local informants indicated the site was used as seasonal settlement at about 80 and above years ago. Some of the then settlers of Gawee were displaced to Tsaeda Kewhi to be free from malaria disease as it is relatively situated at elevated area. In spite of the seasonal movement of the then Gawee settlers, the then potters, Etay, Gidetey, etc.., did not live in the area. According to informants, the potters made coffee pots jars, stew pot and bowls. In addition, their clay source area was Mukuat Meryet, the same area with contemporary potters of Gawee.

The site bears fragments of pots. Consequently, samples (n=66) were collected from randomly selected square of 4m by 4m. The collected samples then classified based on the criterion used to sort sherds collected from Tseanee site. Of the total sample, 24 fragments are diagnostic sherds consisting of rim (n=14/58.3%), neck (n=2/8.3%) and handle (n=8/33.4%). Among the diagnostic sherds, rims sherds have the largest percentage (58.3 %). The least percentage (8.3%) is taken by neck sherds.

The average length of handle and neck sherds measures 7.5 cm and 8.5 cm respectively while the thickness of the rim sherds ranges from 1.2 -0.3 cm.

As inferred from the diagnostic ones, the discoveries are probably belong to fragments of bowl, jars, stew pots and griddle. Except griddle, the rest types of clay objects are currently manufactured in Gawee. However, bowls, jars, stew pots, griddle are produced in the area under investigation in general

Figure 33. Photo showing diagnostic sherds, rim (left), handle (middle) and neck (right) from surface collection of Tsaeda Kewhi

Incised, appliqué and grooved lines are the common decoration patterns exhibited on non-diagnostic rim and handle sherds. Out of the total sherds, only four non-diagnostic sherds were decorated. Of the decorated sherds two pieces were decorated by grouping of horizontally incised lines whereas the remaining two pieces were decorated by appliqué lines.

Figure 34. Appliqué and incised line decoration patterns on non-diagnostic sherds from Tsaeda Kewhi

Two rim sherds, in which one is decorated by combination of incised lines on its exterior surface whereas the other one is grooved on its interior wall, were also found among the samples collected from the site.

Figure 35. Incised (left) and grooved (right) line decorations on rim sherds from surface collection of Tsaeda Kewhi

Except groove line, which is unique to the site, the rest decoration patterns of the sherds are similar with decorations put on pots currently produced by potters of the study area in wider context and Gawee village in particular. For instance, incised decoration patterns are widely distributed in the study area on coffee pot, incense burner and beaker. On the other hand, appliqué line decoration style displays on current products of clay such as coffee pot and small jars.

In addition to analysis of sherds based on decoration, the diagnostic sherds were also sorted by color and are summarized in the table below.

No	Part of sherd	Color of Sherds		
		Black	Gray	Not-identified
1	Rim	7	3	4
2	Neck	2	-	-
3	Handle	5	1	2
Total		14 (58.3%)	4 (16.7%)	6 (25%)

Table 5. Color based classification of diagnostic sherds collected from Tsaeda Kewhi

As indicated below in the pie-chart, among the total diagnostic sherds, 58.3% (29.2 % rim sherds, 8.3% neck and 20.8 % of handle sherds) have black color, whereas 16.7 % (12.5 % rim and 4.2 % of handle sherds) of the sherds represented by grey color. The color of the rest sherds, 25% of the diagnostic sherds which constitute 16.7 % and 8.3% of rim and handle sherds respectively, is not-identified because their surface is highly eroded.

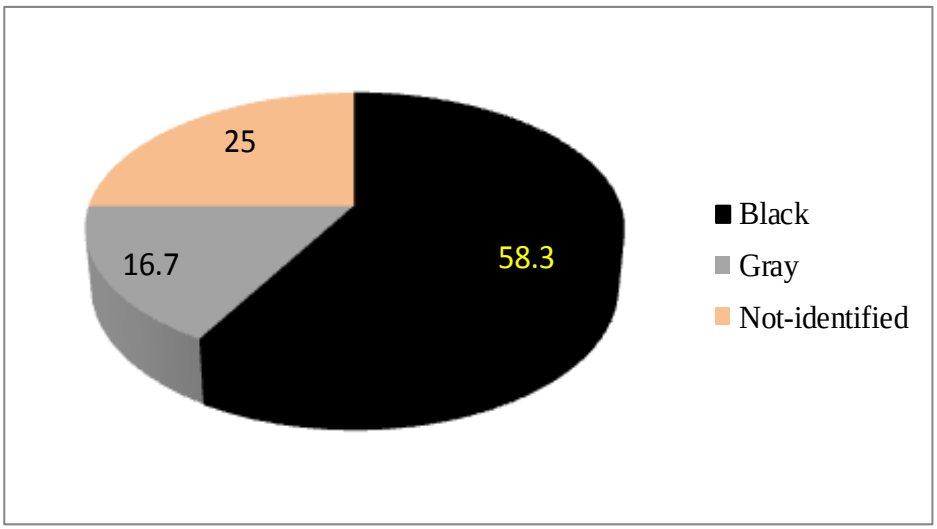

Figure 36. A pie chart showing the percentage value of the colors of diagnostic sherds from surface collection of Tsaeda Kewhi

The non-diagnostic sherds are predominantly black. Out of the total collection (66) there is a single non-diagnostic fragment which has red color. The fragments are less polished and fired as

well. As some fragments are highly abraded, they display a tiny fractures of rocks probably added as temper.

3.6.3. Gira'abo Niguss and Gira'abo Giden

Figure 37. Partial View of Gira'abo Niguss and Gira'abo Giden

This site is found in Hintalo –Wajirat district located far away to the south direction of Ara village. In fact, I could not find potters who dwell close to the site, but it would tell us the distribution of pots. It is found at Addi Keyih *kebelle* in Zigadele village, approximately seven kilometers east of Addi Keyih town. Its GPS location lies at 0576142 East and 1437730 North with an average elevation of 2091 m.a.s.l. According to the locals, the place named after the name of the two men i.e. Niguss and Giden. Informants speculated that the area was ploughed seasonally by the then settlers of Beri, currently, Addi Keyih town before Dergue period. Among others, Niguss and Giden owned the site and from which the place is named as Gira'abo Niguss and Gira'abo Giden, literally mean the ancestral/family land of Niguss and Giden. Though, the area could comprise farmer's compound and out of the compound, the area out of the compound of the settlers is densely covered by cactus which makes survey very difficult.

Gira'abo Niguss and Gira'abo Giden locality bear fragments of pottery but sparsely distributed on the surface. Since the area was covered by cactus tree probably fragments of sherds may be available but difficult for accessibility. Not only was this, as one can see from the photo of its partial view above, the compound of the settlers, part of the site, was covered by crop during the time of survey in the first week of March of this year. Consequently, because of the challenges which I faced, I could not make surface collection of samples; instead attempts were made to identify and record those sparsely distributed fragments of pots in their context. I did not collect anything from the site. Accordingly, I observed fragments distributed here and there along the

foot path and other places free of cactus coverage. Typologically, I have able to observe handle, neck and rim sherds. Nevertheless, I could not find and observe decorated sherds at all.

Figure 38. Rims (above) and handle and neck from left to right (below) sherds observed on the surface of Gira'abo Niguss and Gira'abo Giden

Based on the discovered rim and handle fragments, the findings are probably resembled to different parts of griddle, jar and stew pots. According to my observation, the fragments are black in their color with thick walls compared to the pots currently produced in the selected villages. Interview with selected informants of dwellers of the locals indicated that mostly broken and usually a bit intact big pots like liquor jar and water fetching jars were discovered in the site. Besides, they argue that, the sherds were not decorated and black in color with thick walls.

Chapter Four: Discussion

As it has been described, information about the behavior of human past can be obtained from archaeological remains **(**Fagan, 1975; Ashmore and Sharer, 1996; Renfrew and Bahn, 2008; Kramer, 1985). In this regard, pottery is one among the most important widely found artifacts through which archaeologists study about prehistoric societies (See, Shepard, 1956; Kramer, 1985; Shrotriya, 2007; Silva, 2008). Nevertheless, material remains including pottery cannot verbally tell us about the past. Hodder and Hutson (2003:4) argued that "it is often claimed that material objects are mute, that they do not speak, so how can one understand them? Certainly an object from the past does not say anything of itself". As such, ethnoarchaeoogical investigation on the contemporary socities together with their material culture is so crucial as it could provide a base line data upon which archaeologists can reconstruct the behavioral aspectss of human past (London, 2000; David and Kramer, 2001; Grant et al. 2008; Renfrew and Bahn, 2008; Silva, 2008; Temesgen, 2011).

Dealing with sshuman past based on pottery as an evidence ,thus, needs comprehensive ethnoarchaeological investigation related to contemporary pottery making activities (Kramer, 1985; Nyamushosho, 2014) as it provides data about production, function, consumption, distribution, durability, recycling, disposal, labor division, learning, technological and stylistic changes of ceramics (Kramer, 1985; Stark, 2003; Skibo, 1999 in Silva, 2008) which could have archaeological significances (Skibo, 1999 in Shrotriya, 2007; Silva, 2008 ; Santacreu, 2014).

As an ethnoarchaeological study, this research has attempted to identify and document the whole aspects of pottery production starting from the acquisition of raw materials to the entire process of production and also the socio-cultural and economic aspects of pottery manufacturing among the selected villges.

As explained by scholars, archaeologists should have incorporated the types of raw materials and their procurement, production, distribution, use and discard of pottery in their technological analysis (Shepard, 1956) for its significance in identifiying the origin of the fired clay object and the materials employed in it (Shepard, 1956; Miller, 2007). Many scholars generally described clay as the major component (raw material) of pottery (Roth, 1935; Shepard, 1956; Barker, 1961; Arnold, 1985; Nicklin, 1979; Sinopoli, 1991; David and Kramer, 2001) beginning in the

prehistoric time (Rice, 1987). Moreover, previous investigations illustrated that Ethiopian potters were using different types of clays for pottery making (See, Cassiers, 1971; Arthur, 2000; Lyons and Freeman, 2009, Bula, 2011**;** Kaneko, 2012,).

In the study area, too, according to the data gathered through observation and interview, clay (*Meryet)* is the chief raw material for pottery production. Except the clay utilize by potters of Ara where it has gray color, in the rest villages, the clay is shiny black in its color. Not only this, based on personal observation, the clay in Ara seems also very compact compared to other selected villages as such it could have compositional variation from the clays utilize by potters in the other villages. Besides, the clay in each villages may have its own compositional difference from one village to another if it is examined through laboratory analysis in turn it would possible to identify the production village of archaeological posherds in the study area. Concerning to this, Stark and her colleagues (2000) in Costin (2000) described that compositional analysis of raw materials can be distinguished among production communities, but it needs detailed geological survey to know the potentional sources areas (Costin, 2000).

Though archaeologists assumed that pottery used by various consumers have been produced by those who are located near to the raw material sources (Costin, 2000), several investigations revealed that potters can travel to distant workshops by leaving their respective home villages (Syle,1962 and Linne, 1966 in Nicklin, 1979). Furthermore, Simoons (1960) in Nicklin (1979) states that among the potters of Ethiopian societies those from the villages of Semyen were traveling regularly about two days to south west of their home village to Silazei, where they make pottery for a period of time from a few months to a year. Neverthles, in the study area potters utilize raw materials found not far from their respective villages. Thus, this study sugests that archaeological postsherds unearthed from the selected villages could probably be made of raw materials located close to the potters production areas and this could help to distinguish between imported and locally manufactured clay objects.

Some clays could have naturally processed temper as such they may not need any additional things (Miller, 2007). Among the Dangtalan-in Kalinga of Philippines (Longarce, 1991 in Gedef, 2005), for instance, there is no temper addition to clay for it has naturally processed sand. However, other clays may have need addition of tempering materials to achieve their workability and to moderate their plasticity (Miller, 2007). Tempering materials as technological choice has

been also used by potters in prehistoric times (Bronitsky and Hamer, 1986). Potters across the globe could employ various materials as temper (Rice, 1987). This comprises sand (Roth, 1935; Longacre et al.2000; Miller, 2007; Renfrew and Bahn, 2008), crushed pottery/grog (Drewett, 1999; Miller, 2007; Renfrew and Bahn, 2008), dung (London, 1981 in Skibo, et al.1989; Miller, 2007), ash (Bel, 2009) etc... Moreover, previous ethnoarchaeological researches demonstrated that potters in different regions of Ethiopia were employing sand (e.g. Hechet, 1969; Arthur, 2000; Lyons and D'Andrea, 2003; Bula, 2011), talc and schist (Lyons and Freeman, 2009), straw (Bula, 2011), grog (Arthur, 2000; Bula, 2011), ash (Gedef, 2005) and the like as tempering materials. Furthermore, archaeological research in Ethiopia revealed the discoveries of potsherds tempered by Quartz (Agazi, 2001; Bard et al. 2001; Klein, 2007), ground stone (Bard et al.1997), sand (Bard et al.. 1997; Girma, 2001), fired clay/grog, mica and ash (Klein, 2007).

In the study area, sand, unfired potsherds and donkey dung are used as tempering materials. All potters utilize sand which has shiny brown color and coarse grained nature as their major tempering material added to the clay. Besides, they also employ unfired broken pots as temper as potters in other areas such as in Tzeltal Maya and Wanka in Peru (see, Deal, 2005). Unlike former potters of the same place who had used both fired and unfired broken pots as temper, in the study area, contemporary potters employ only the later one and this could demonstrate the prevailing of cultural change in the type of tempering materials across time.

Donkey dung as tempering material is utilized only by jar makers of Gawee potters. Thus, it could have an archaeological implication to understand location of production/source area of archaeological potsherds that would be found in the study area as compositional analysis of pots provide data about production communities (see, Shepard, 1956 ; Costin, 2000 ; Miller, 2007).

The use of donkey dung as temper by jar makers of Gawee potters on the other hand indicates the presence of variation of tempering material among potters both at inter- and intra- site level. According to informants, donkey dung is workable only for making of jars. It is not employed for making small pots as it is believed to cause black color while firing. Thus, this study suggests that all clay products could not be treated by the same type of temper. Hence, the culture of adding tempering materials to clay was also practiced among prehistoric societies (see, Bronitsky and Hamer, 1986), using different materials as temper for different kinds of objects could probably apply for prehistoric pottery production technology as well. And, this could probably

the reason for the discovery of archaeological potsherds with various types of ingredients besides clay.

In spite of the assumption that tempering selection has often been purely cultural factor, recent investigations suggest that temper had also technological function (Bronitsky and Hamer, 1986). Moreover, Rice (1987) argued that temper could indicate distinct culture. As stated by Evans (1955:38) in Bronitsky and Hamer (1986:90) 'in Virginia, for instance, various pottery types have been defined based primarily among others on differences in temper and these variations in temper are usually linked to prehistoric cultural differences among groups, rather than to technological requirements'.

In the study area, however, potters employ temper only, as informants responded, for improving the workability of the paste and to limit cracking and destruction risk during drying and firing. There has not been any cultural or social factor attributed to hinder specific potters to use particular temper intentionally to distinguish their culture over others. Though some potters in the village of Gawee utilize donkey dung exceptionally, it has no unique cultural meaning (interpretation) beyond its technological value.

Thus, all potters, including those who use donkey dung, mixed clay and sand at a ratio of one unit of clay and two units of sand. However, Lyons and D'Andrea (2003) noted that potters at Addi Ainawlid, in Tigray region made their griddles from a paste of one-to-two or one-to-three ratio of clay and sand. In Gondar also some potters prepared their paste by mixing one unit of clay with three units of tempering materials (Gedef, 2005). Similarly, in Korkee, north east Wollega, potters were adding one unit of temper to clay (Tadesse, 2014). Here, what we can understand is that the ratio of clay and tempering materials could vary among potters of different regions and could probably be applied to prehistoric potters as well.

To sum up, through observation, potters of Edaga Arbi, Addi Hayla and Gawee utilize more or less similar types of clay. However, the clay in Ara is different from the clays found in the remaining villages for it has gray color and it seems very compacted. Though, sand is more or less similar throughout the entire study area, the use of donkey dung as temper among some potters in Gawee shows one major variation both at intra-and inter-village levels. In spite of the presence of similarity in clay among all potters, according to my observation, excluding in Ara,

and sand in all the selected villages, based on laboratory examination there could be slight compositional variation in both clay and sand from one village to another. This consequently would help a great deal to understand the potential source area of archaeological potsherds in the study area.

In relation to the distance from where raw materials acquired, scholars stated that the distance where clay and temper are found may be more governing factor than their quality as such potters could prefer to use clays even with less quality but closer to their production area than quality clay but in distant areas (Arnold, 1991 in Arthur, 2000). In contrast, Rice (1987) suggested that potters may travel further distance to procure quality clay than consumption of less quality clay closer to their production area. Others argued that "although potters choose nearby clay and temper, they still do have choices among the nearby sources" (Neupert, 2000 in Skibo, 2013:39).

Potters in the study area, however, acquire their clay and tempering materials not far from their home villages as the raw materials could fulfill the quality needed by potters. All potters at each village extract clay from the same source area of the villages. The same is true for sand. Furthermore, there is no specific clay mineral employed to make a particular types of clay objects instead all pots at each village are made from the same type of clay soils found in each village in contrast to one of the raw material selection strategies proposed by Bishop et al. (1982) in Costin (2000:381), i.e. "use more or less equally available clays of different composition for different kinds of vessels".

In spite of the presence of clay and tempering materials around the production areas, potters across the selected villages under investigation deliberately select the quality clay and temper over others from the same source areas goes in line with the explanation of Costin (2000) such that ethnoarchaeological studies have indicated that clay and tempers are not randomly picked instead are deliberately selected by potters. That is why potters, according to my informants, conducted initial survey to identify quality clay extraction sites. This is done by taking samples of clay in order to test its workability and to use the area as source of clay for the future as elsewhere in the continent (see, Bel, 2009). Akin to in the study area, potters elsewhere in the continent are intentionally selected the quality clay (see, Granville et al.1899 in Nicklin, 1979; Bel, 2009). Thus, the use of clay and tempering materials available close to production area but preferential selection among the existing resources, the latter is more or less similar with one of

the strategies of selection of raw materials suggested by Bishop et al. (1982) cited in Costin (2000), is applicable among all potters of the study area.

There are also similarities in the way how potters acquire the raw materials. Accordingly, all potters obtain the raw materials free of charge. In fact, potters of Edaga Arbi are affecting their access to the clay by owners of the land. In some areas of southern Ethiopia, however, potters should establish friendship with land owners so as to find clay and some also claimed they paid tax (Arthur, 2000) whereas some potters at Gondar obtain their raw materials particularly temper with share product agreement or purchase (Gedef, 2005). Others focused on rituals and taboos related to collection of raw materials. In relation to this, Bula (2011:309) stated that "potters believe that good-quality clay is provided by Waqa and in this case if the potters fail to fulfill the ritual requirements (e.g., occasional sacrifice of animals, regular prayer, following moral rules in the course of preparing resources, shaping, drying, or firing), the clay will be polluted and potters will not obtain the desired quality ". Similarly, Asanti et al. (2013) reported that in Kapando**,** Ghana, the winning of clay is governed by rituals and taboos.

Nevertheless, except the holy days celebrated by Ethiopian Orthodox Tewahido Church in which they did not process anything, in the study area there is no cultural prohibition and ritual practice that hindered potters from gathering of raw materials. This generally suggests the way how potters obtain the raw materials of pottery has variation from place to place and would be likely occurred among prehistoric potters as well.

With regard to pottery making procedures and techniques, though London (1991) pointed that there could be a variation throughout the various processes of potting, Gosselian (1999) describes the steps of pottery making generally involves acquisition and preparation of raw materials, shaping and forming, drying, firing etc. Similarly, in the study area as a whole the operational sequences of pottery making begun with acquisition of clay and tempering materials and then it followed with preparation of paste, forming and shaping, making decoration, drying, polishing and firing.

Accordingly, all potters across the selected villages follow similar steps while preparing paste, i.e. cleaning the clay, exposed to sun (if the clay has moisture), soaked in water and then mixed it with tempering materials in the case of clay and similarly sand is prepared by cleaning the sand,

exposed it to sun (if moisture is available), pounding, grinding, sieve and finally mixed it with clay paste. Thus, there are similarities in the way how clay and sand are processed and how paste is prepared at intra-and inter-village levels. However, according to informants, slight difference is seen while preparing sand for making larger objects such as jars. In this case, the potters may not ground the sand; instead pound it as much as it became fine in texture. This could have an archaeological significance to detect whether the sand that would likely found as temper in archaeological potsherds of the study area is ground or pounded since ground sand has very fine texture compared to the pounded one.

In the study area, sand is ground by grinding stone or any stone which allow potters to do so. The availability of grinding stones particularly upper grinding stones in association with potsherds in Tseanee site could signify that those who formed the site had been probably used some of these tools to ground their pottery raw materials though it needs further investigation. Moreover, some of the upper grinding stones bear morphological and even size resemblance to the upper grinding stones by which current potters ground their sand, for instance in Gawee (see, figure, 32). This, thus, would likely suggest continuity in the process of preparations of raw materials in particular and pottery technology in general across time.

When paste is prepared, potters make it ready for shaping and forming of the desired objects. In relation to shaping, Rice (1987) argued that potters can began first the base part and then move upward to the mouth and neck parts though London (1991) argued that variation could exist in different procedures of potting. However, some former potters in the village of Korkee, in Wollega, shaped and formed at first the upper parts of the pot (Tadesse, 2014). In the area under investigation, potters begin shaping at first the base part and move upward to the neck and mouth regions. In terms of toolkits, such as animal ribs, plastic and skin strips and chaff of maize used to thin, extend and smooth the pot being shaped, more or less similarity is clearly observable at inter-and intra-site levels. In addition, there is also some kind of similarity in the types of supportive devices which potters employ to make their pots at intra- and inter- site levels. Accordingly, potters among the Gawee and Edaga Arbi villages employ *Dukana* (see, figure, 8) and a stew pot filled with sand (see, figure, 7) as supportive device while making beaker and stew pot respectively. A kind of stage locally called *Medeb* (see, figure, 9 (left) is also used as

working device of griddle particularly when the ground has moisture at intra and inter-village levels.

However, some variations in the types of tools used as supportive devices are also observable from one village to another. For instance, coffee pot is commonly produced in Gawee, Ara and Edaga Arbi villages. Accordingly, in Ara potters should have employed broken of the same type of pot i.e. coffee pot by placing upside down on the ground as supportive device. Potters in Gawee and Edaga Arbi villages however use another objects such as broken of other types of pots, flat stones or others. Furthermore, in Edaga Arbi village, potters employ an object made of cattle dung and sand locally called *Wezenti* (figure, 5 (left) as their supportive device. While forming, potters at Ara press down the paste placed on the supportive tool so that the pot has round shape from the beginning (see figure, 6 (left). However, potters in Gawee and Edaga Arbi hollows out the center of the paste by pinching and stretching and consequently the newly shaped coffee pot could has a short pedestal base at first before its surface is polished (see figure, 6 (middle and right**)**. If such types of pots are discarded without further processing i.e. polishing, it could be possible to distinguish production areas in archaeological records of the study area using the base part as reference. In addition, the use of *Mekedo* (see figure, 9 (right) as supportive device among griddle makes of Edaga Arbi makes them unique from griddle makers in the other villages. However, none of the variations in the types of supportive devices has been reflected ethnic difference among potters of the study area. Nonetheless, in the study area, making procedures of small jars, bowl, beaker, stew pots and incense burner are more or less similar among all potters who produced such types of objects in the study area.

On the other hand, the prevalence of more or less similar method of shaping and forming procedures and the use of more or less similar tools to make and smooth pots could an evidence of the socio-cultural interaction that would likely occur among the craftsmen at both intra- and inter-village levels.

After pots are shaped and formed, potters made decoration on the surface of their clay objects with various decoration patterns. In all the selected villages of the study area decoration is performed at the wet stage before drying and firing with the help of tools such as very small pointed sticks, dried grass, needle and other metallic objects, thorn as well as fingernail impressions. This suggests technological similarity across the selected villages. Besides,

regardless of the types of decoration styles and pots that are going to be decorated, all types of decorations across the villages are made on the exterior surface of the pot.

Furthermore, the incision, impression and appliqué techniques of decoration and incised lines, appliqué lines and clay ball appliqué patterns of decoration are widely distributed and shared by all potters across the selected villages, excluding Addi Hayla. Particularly, four to five incised lines and a single incised line are commonly exhibit on beaker across beaker making villagers of the study area. Similarly, some decoration patterns of coffee pots such as horizontal and zigzag incised lines and non-impressed appliqué line are commonly performed by potters across those who are specialized in coffee pots. Thus, the availability of similar decoration techniques and patterns would likely suggest the socio-cultural contact between potters found in different villages as well as in a single village. In line with this, Fattovich (1990) noted that among others, decoration elements display on ceramics help to know interaction among people of different regions. Similarly, Ashmore and Sharer (1996) suggest decoration attributes can provide a clue to trace ancient social and cultural links in time and space.

Despite the availability of similar decoration styles and techniques, difference in decoration styles on the other hand is also observable from pottery type to pottery type, village to village, and potter to potter. Accordingly, decoration is generally elaborated on small pots such as beaker, coffee pots and incense burner compared to other objects such as small jars. If jars are decorated, they exhibit fingernail impressed lines (dot-dot lines), finger nailed impression on appliqué and applique lines.

Variation in decoration is clearly seen from one village to another. For instance, in Ara coffee pots are decorated with "**V"** and triangular shapes made by short diagonally incised lines. At Gawee, on the other hand, coffee pots are decorated with impressed appliqué line, cross designs made by impressed and not impressed appliqués, "**Λ"**-shape made by four to six incised lines, impressed and not impressed clay ball appliqués. In Edaga Arbi coffee pots are uniquely decorated by fingernail impressions on applique line. Variation in decoration is also visible on incense burners for they are decorated by incised horizontal, zigzag and wavy lines, finger nailed impression lines (dots) in Edaga Arbi unlike in Ara, where incense burners are not decorated, and in Gawee village, where such clay objects are decorated only by a clay ball appliqué or a single incised line. This indicated that incense burners are highly decorated in Edaga Arbi than in

the rest of the villages. Since potters could learn potting from different individuals with different skills of decoration, this, then, could probably be the reason for potters to have their own styles in some types of decorations at both intra- and inter-village levels.

In relation with the implication of differences in decoration patterns, Grave (1991) noted that variation in decoration styles of ceramics help to distinguish ethno linguistic groups. Nevertheless, interpretation of ethnicity on the ground of decoration from archaeological sites of Saharti-Samre and Hintalo-Wajirat areas is not workable as all potters belong to the same ethnicity i.e. all are Tigrigna speakers and followers of Orthodox Tewahido Christianity. However, variation in decoration styles could help to distinguish the products of different villages.

In addition, variations of decoration patterns are observable from potter to potter within a single village. As such, for instance, in some products, potters can make multiple incised zigzag lines while others may employ impressions and clay appliqué lines such as on coffee pots. Similarly, all pots, even similar in type, but manufactured by different potters in the same village may decorate in some potters but not in others. Moreover, a single potter may decorate her pots, even similar objects, with different decoration styles.

Though Grave (1991) noted that difference in decoration styles of ceramics distinguish production groups from each other in a single locality, it may not always workable in the study area as a single potter may decorate her pots in different decoration styles or may decorate some of her objects but left others without decoration. Moreover, the same kind of object can be decorated in different styles even the potter is the same. In other words, there is a probability that pottery fragments of the same potter with different decoration styles would be found at the same archaeological context. Thus, if the assumption of Gravel (1991) is workable everywhere, there is a probability that the products of a single potter but decorated differently could be taken as representative of different groups and consequently the interpretation that would be made and the actual fact what the remains indicate became mismatched. Thus, this study suggests that we should not always be assumed that decoration styles on each of pottery artifacts in archaeological record were made by different individuals; instead, we should have taken into account that potsherds with different decoration patterns could probably be the products of a single potter.

In relation to the interaction between decoration types of contemporary pots with sherds discovered from discarded sites, incised crisscross lines, finger pinch on appliqué line and impression just on the lip part exhibit on potsherds from surface collection of Tseanee site (see, figure, 29) and grooved line on the internal wall of a single sherd in Tsaeda Kewhi (see, figure, 35 (right) are not employed by contemporary potters of the study area. However, finger pinch on appliqué line and incised crisscross lines of decoration types are found in Gondar (see, figure, 6-14 C and E respectively in Klein, 2007:376). Similarly Gedef (2005) indicated that crisscrossed lines of decoration types are displayed on some pots in Gondar. In addition, some potsherds from surface collection of Tseanee site were decorated at their interior walls (see, Figure, 30). I did not find, however, even a single potter who made decoration on the interior walls of pots. Thus, all these demonstrate the prevailing of some sort of cultural change on the types and the place (interior or exterior surface) where decoration on pots is performed through time.

However, the presence of incised and non-impressed applique lines on some potsherds from surface collection of Tseanee and Tsaeda Kewhi sites and dot-dot lines and impressed appliqué lines in Tseanee, which are currently apply by contemporary potters, could be an evidence of the existence of cultural continuity of the tradition in Gawee in particular and in the study area in general.

Regardless of the similarities and differences of decoration styles at intra and inter-village levels of contemporary potters, the goal of any type of decoration, according to informants, is for aesthetic value. Though other scholars attached the meaning of decoration with religious implication and cultural contexts such as human body adornment (David, 1998), application of decoration on pots in the study area, according to informants, has no religious and ritual contexts beyond its aesthetic significance. However, the application of cross-shaped types of decoration styles (e.g., see figure, 11 (left) could be shown their religion, Christianity. According to informants, they employ such type of decoration styles not to express their religion intentionally instead to make their pots more beauty and attractive. Indirectly and unintentionally, however, it could display who they are. This could, thus, have an archaeological significance to recognize the probable religion of the makers from archaeological context in the study area.

Immediately after forming and decoration is made, clay products are gradually sun-dried. Except for griddle, which is exposed to sun-dry immediately after forming and shaping, all clay objects

dry more or less in similar way, initially under shade then exposed to sun- drying which is similar across the selected villages and with the account given by Pankhurst (2000). The dried up pots are, then, made ready for polishing which is more or less similar at intra- and inter-village levels. This is done by repeatedly rolling the pebble (*Enkuashe*) over the surface of the pots. In this process potters employ cloth, water, creamy liquids (such as butter, cooking oil), and lamp soot (this is only for griddle) to smooth the surface. Moreover, at production areas, except in Edaga Arbi and Ara where griddle is polished by lamp soot after firing, all products of clay are polished after drying up but before firing. According to informants, all pots could not be polished with creamy liquids in which polishing of some objects such as jars, stove and incense burner can be performed without the use of creamy liquids unlike beaker, coffee pot, stew pot and griddle. Thus, jars, stove and incense burner have slightly rough surface.

The dried and polished pots are, then, left for firing, which is performed mostly in the potter's compound or sometimes outside but not far from the compounds of the artisans. Skibo (2013) pointed that traditional handmade pottery is fired either in an open fire or in closed kilns of various types. In the study area, except for griddle, all clay vessels both at intra-and inter-village levels are fired in an open fired system in a shallow pit using cattle dung. Though it could vary from place to place, firing pit across the selected villages has not more than forty centimeter and one meter in depth and diameter respectively. Mostly firing pits are found at backyards. Sometimes potters particularly those who have not enough compound uses firing place outside but in front of their compound. Though the spatial location is varying from place to place, firing pits are found not more than sixty meter away from the house of the potters, be it in the compound or outside the compound. As firing of pots is performed weekly, firing pits in association with debris of ash are clearly observable in the back yards of potter's compound (mostly) and outside the compounds indeed could help to identify firing places in pottery production areas. Besides, this could help to distinguish between potters compounds and compound of the mainstream societies. In other words it is likely to detect archaeological sites of firing places in potter's compound in particular and production area in the study area in general.

Firing of griddle is different from other pots and from village to village. Accordingly, in Ara and Edaga Arbi it is done by leaning two or three griddles together by placing their back surface to the fire while in Addi Hayla griddle is fired on stove or three to four stone hearths placing the

back of the griddle down to the flame and the central part of its baking surface is fired by small amount of cattle dung. As a result, the back part of the griddle in Addi Hayla is highly burned and has reddish color; and if such object is discarded immediately after firing but prior to offering any service and eventually enter to the archaeological record, it could be possible to distinguish griddle sherds of Addi Hayla from others for it is highly burnt and has reddish back surface (see, figure,19 (right) and also it could bear red color at its baking surface (see, figure, 20 (right).

In the time of drying and firing, pots could be broken and eventually discarded. Pots broken in the time of drying could be reused into paste as temper whereas pots broken into pieces during firing are discarded in the compound and consequently enter into the archaeological record and would become sources of archaeological site formation.

Firing is one of the major causes that affect pottery color (Shepard, 1956). Due to firing treatments, in the study area, pots are generally exhibit black, red or both black and red colors on their surfaces. This color variation has, according to informants, emanated from duration of firing in which sufficient firing caused pots to have red color while pots with black, both black and red colors are indicators of inadequate firing treatment. Most of the products of Gawee and Edaga Arbi potters display red color while these from Ara are predominantly black. This could probably because of compositional variations of the clay that would likely occur among different villages and poor firing control skill of the artesian. However, some potters also intended to blackening and darkening their pots. For instance, potters in Ara village deliberately covered the pots being fired by donkey dung immediately after the fire became red and hot intended to make the surface black. Related to the relationship of firing temperature and clay products, Miller (2007) suggest that the atmosphere attained during firing play a great role on the appearance of the products. Thus, clays fired in a reduction of atmosphere (.i.e. an oxygen-poor, carbon monoxide-rich atmosphere) displayed black or grey color whereas in oxidation atmosphere (oxygen-rich firing atmosphere) the products become red. Similarly Renfrew and Bahn (2008) stated that dark, gray, black or both black and red colors are indicators of insufficient duration of firing. In addition Lindahl and Matenga (1995) point out that inadequately fired clay objects become black in color.

In relation to the sherds discovered from surface survey, potsherds from surface collection of Tseanee site are predominantly red and seem well fired while potsherds evident in Tsaeda Kewhi and Gira'abo Niguss and Gira'abo Giden sites were relatively less fired, roughly polished and are easily broken and have black color. This probably indicates that compared to Tsaeda Kewhi and Gira'abo Niguss and Gira'abo Giden, potsherds in the archaeological record of Tseanee site were probably treated with enough duration of firing. The presence of potsherds with gray and black color in Tsaeda Kewhi and Tseanee is probably an indication of firing at reduction atmosphere.

However, this research suggests that we should not always conclude that pots with black and gray colors are an indicative evidence of poor skill of firing control of the potter instead we should have taken into consideration the deliberate decision of the potters. For instance, in Ara, pots being fired are covered by donkey dung intentionally to eliminate complete firing in order to blackening or darkening their color.

In spite of the fact that in Ethiopia potters are variously described as agents of deforestation and degradation (Pankhurst, 2001), potters in the study area may not be accountable for deforestation as cutting large trees for fuel is not common instead they use straws, dried shrubs and animal dung. Potters can, however, be agents of environmental degradation since they dig deep beneath the ground continuously so that they gradually cause the land to be collapsed and eventually exposed it for further erosion and land degradation.

Variations are also observable in terms of specialization at intra- and inter- village levels. Arnold (1972, 1975) and Peacock (1982) in Kramer (1985) stated that some potters specialize in particular forms in order to avoid competition and dominate (monopolize) market. Arthur (2000), on the other hand argues potters became specialized with clay products more or less similar to the specialization of the person from whom they learned the skill. The latter is applicable for potters of the study villages. Scholars suggest that individuals can learn the craft from mother, mother-in-laws and neighbor through observation (Arthur, 2000; Bula, 2011; Kaneko, 2012).

Likewise, in the study area, according to informants, learning is from mother, mother-in-laws and neighbor homes without verbal and formal teaching; and specialization in pottery making has a strong affinity with the specialization of the person from whom they taught the skill.

Accordingly, we have potters specialized in coffee pot, incense burner and griddle in Ara village. In Gawee, the potters are specialized in coffee pot, stew pots, small sized jars, beaker, incense burner and bowl. In Addi Hayla, potters are entirely griddle makers. At Edega Arbi potters are specialized in griddle, small jars, bowl, kettle, stew pots, beaker and incense burner. The occurrence of similar specialization at intra- and inter- village levels could probably an indicators of cultural contact among potters of a single village and located in different villages. Similarly, Sherratt (1972), Struever and Houart (1972) and Hodder (1978) in Hodder (1979:446) described that "it has generally been accepted that similarity in material culture is often produced by interaction between groups". An account given by Clarke (1968) in Hodder (1979) more over has shown that efficiency, length and continuity of interaction among individuals affects artifact similarities.

Though, the prevalence of different types of products at inter-village levels could tell us the occurrence of local specialization, none of these marked differences are indicators of variations in ethnicity among the potters for they are, as stated repeatedly, belong to the same ethnic group. Besides, all of them are agriculturalists. Thus, this study suggests that variations of material cultures in archaeological sites could not be sufficiently an indication of the prevalence of different ethnic groups among those who formed the archaeological record. The availability of similarity of some products across the selected villages, however, could be indicators of socio-cultural contact among the crafts at intra-and inter-village levels.

Except in Addi Hayla, large jars such as liquor jars and middle sized jar used to fetch water locally called *Ayno* had been manufactured in all the selected villages. However, due to the infiltration of modern plastic and metallic containers production of such types of clay objects is almost ceased at this time as their demand and price is decreased. From this we can understand how much modern industrial products are negatively affected the traditional clay products. According to informants, metallic and plastic objects are currently demanded over clay objects by consumers for they have long durability and are less fragile and easy to carry and transport from place to place akin to an account given by Pankhurst (2000) in Tadesse (2014). On the other hand, despite the continuous diminish of demand on clay products, according to informants, griddle is yet not affected and replaced by any type of modern plastic and metallic

objects. This indicates how much clay products have been pivotal in the day-to-day activities of human beings.

Nevertheless, a marked similarity among the current potters in all villages selected for this investigation is witnessed on the terminologies given to the different parts of pots. In line with this, Haaland (1997) posits that the name of parts of pots has a strong correlation with human body parts. Similarly, in the study area the name given to different parts of pots is similar with human body parts. Accordingly, potters called *Meankor* (for the base), *Kisad* (for the neck), *Ezne-e* (for ear), *Af* (for the mouth), *Mincher* (for the lip) etc. which is similar across all potters of the entire region of this investigation. Nevertheless, according to informants, it does not mean that pots symbolize human body instead, like human body parts pots have base, neck, ear, mouth and lip parts.

With regards to potsherds of the discard sites, as I observed, the discoveries of fragments of jars, beaker, lid of stew pots from surface collection of Tseanee, jars, griddle and stew pot in Tsaeda Kewhi and Gira'abo Niguss and Gira'abo Giden would likely suggest cultural continuity of the tradition of pot making across the study area in a wider context for such objects are currently manufactured at least in one of the selected villages under investigation. For instance, beaker, stew pots, and small jars are currently manufactured by potters of Gawee and Edaga Arbi whereas griddle is produced in Addi Hayla, Ara and Edega Arbi villages. Conversely, fragments of bowls with ring bases (see, figure, 31) from surface collection of Tseanee site are not available among the products of all contemporary potters. This would likely suggest, therefore, the discontinuity of the types of pots that would be produced over time in the region under investigation. However, small bawls with foot (base) rings were found at Aksum (see, Fattovich, 2010) and Lalibela cave site (Dombrowski, 1971).

In the study area pottery making is undertaken by women. Though males assist in gathering of raw materials and transportation of products to market areas, the entire activities of potting are preserved for women as in other societies (see, Longacre et al.2000; Arthur, 2000; Lyons and Freeman, 2009; Bula, 2011; Kaneko, 2012; Asante et al.2013). Although men make pot in Sokoto, northern Nigeria ((Nicklin, 1979), except the above stated tasks, in the study area, other activities are performed by women.

However, it does not mean that each procedure of pottery productions is always performed by a single woman without the effort of others. Instead, daughters are observable while assisting their mothers in collecting of raw materials and fuels, taking pots to market areas, polishing and firing activities. In other words, the processes which potters employ to acquire the desired pot could be accomplished by different individuals and this study suggests potsherds that would likely discover from archaeological sites of the area under investigation might not be the end result of the effort of a single person which is similar with an account given by Arnold (1999) in crown (2014) that different individuals may contribute different tasks in the completion of a single vessel and probably in the formation of artifacts as well.

In relation to potter's production area, researchers suggest that traditional potters in most of the cases work where they live (Kramer, 1985) particularly in their compound (e.g. Lyons and Freeman, 2009; Kaneko, 2012). Furthermore, making pots together at one place is very rare though potters and their daughters could have the same space use (Kaneko, 2012). However, market potters in Edegahamus, Tigray, perform some stages of pottery production outside their compound walls (Lyons and Freeman, 2009). Potters across the selected villages of this study conduct their potting tasks independently or with their female relatives inside their compounds. In fact, some firing places are observable outside the compound, but it is not common. Kaneko (2012) pointed that the reason behind the production of independently within one's own compound among potters of Ari was due to the belief that if somebody saw them while making, the pots being shaped would be broken. On the other hand, domestic potters in Gulo-Mekada, northeastern Tigray, were not interested to be visited by others as pot making is considered to be shameful (Lyons and Freeman, 2009). However, in the study area such type of implication and attitude is not known currently. In this regard potters responded that they carry out their activities within the compound as their predecessor potters. They argue that," we are doing our activities in the compound as our former potters". They further explained that working within one's compound provides them to do other domestic activities simultaneously and it limits pottery destruction from external factors such as animals and children which is common outside the compound. However, working in the compound could have an attachment and continuation with the long lasting culture of protection of the newly formed pots from destruction caused from the eye of outsiders for there is a cultural belief among traditional potters that if others saw them in

the time of forming and shaping, the objects in the process of making will be broken (see, Kaneko, 2012).

According to scholars pottery production areas can be easily identified in archaeological context for they bear evidences of firing areas (kilns), sherds (Kramer, 1985; Arnold and Santley,1993 and Ashmore, 1988 cited in Deal, 2005), non-movable water and clay containers and structures used for clay storage and preparation (Kramer, 1985), pottery making tools, raw materials i.e. clay, tempers and pigments (Arnold and Santley, 1993 and Ashmore, 1988 in Deal, 2005), smoothing stone (Bryant 1988; Sheets 1979 in Deal, 2005) and heavy raw material processing tools, often in the form of reused corn grinding equipment or river cobbles (Deal, 1988 and Hayden, 1987 in Deal, 2005).

Across the selected villages, firing pits with debris of ash, tools used as supportive devices like objects made of cattle dung and sand like *Wezenti* (see, figure, 5 (left), *Mekodo* (see, figure, 9 (right) and *Dukana* (see, figure, 8), *Medeb* (see, figure. 9 (left), broken pots, tools used to polish surface of pots like river pebbles (see, figure, 15) and discarded potsherds are probably feasible evidence of pottery production areas. Since pottery production areas are in the potters' compound, firing pits with deposition of ash, large number of broken and discarded pots and pottery making tool kits would likely be left in their primary context. This, thus, could help to distinguish the types of activities and the place where they performed in archaeological sites of Saharti-Samre and Hintalo-Wajirat areas. Related to this, Drewett (1999:20) suggested that "rubbish in primary location provides two pieces of basic information: what activity took place and where it took place".

Related to the function of pottery, Hill (1987) describes pots as a means of survival besides agriculture. Other stated that pots have been playing such a role in processing, transporting, and storing facilities (Arnold, 1985; Rice, 1987; Arthur, 2000; Skibo, 2013). In the study area likely pots serve as economic livelihood and household wares used for preparing, storing and transportation.

In the area under current investigation, pots are manufactured primarily for sell so that they serve as source of income besides agriculture for the artisans, potters. According to all informants, they became potters because of insufficient return from agricultural products. In line with this Costin

(2000:395) stated that "archaeologists often assume that economic circumstances are the most important criteria in determining who will take up crafting". Moreover, several ethnographic studies indicated that individuals took pottery production as a strategy to leave out from economic crisis (e.g. Arnold 1985; Stark, 1991, 1995 and 2000 in Costin, 2000; Kalentzidou, 2000).

As a means of their income, potters take their pots to market centers or sell them at their home. At market days, potters are seen while selling their products at the edge of one side of the market places which is similar with potters elsewhere in the country (see, Bula, 2011; Temesgen, 2006 and Tsehai, 1991 in Bula, 2011; Lyons, 2014; Pankhurst, 2003 in Lyons, 2014). Though potters informed that they preferred corners of market places in order to prevent pots from destruction that would likely occur at the center of the market as many people are found there, this might do with reason for marginalization of potters or with social hierarchy as explained by scholars (Temesgen, 2006 in Bula, 2011; Freeman and Pankhurst, 2001). This, in general, explores that one can easily understand social status of the handicraft society in the study area by looking at or observing their physical location in market places. Besides, producers having the same clay objects are grouped together while selling their products at market places as elsewhere in Tigray region (see, Lyons, 2014). Thus, one can observe and understand some local specialization of potters from market areas. In addition, despite the outskirt location of pot sellers so as to protect products from destruction, pots could be broken and frequently discarded at market places (e.g. see, figure, 24); and eventually enter into the archaeological record.

Beyond in the local markets, pot traders could distribute clay products from their source area at a distant market centers. In other words clay products are also a source of income for those engaged in pottery trade though their number decreases over time. Ethnoarchaeological investigations have shown that intermediaries are one of the elements by whom pots are distributed out of their production areas (Stark, 2003). In the study area, too, some intermediaries distribute some clay products as far as 70 km and 30 km away from production area for sell at Sokota and Della towns respectively. An account given by Rice (1987) point out that compared to other clay vessels, light but high value clay products have wider geographical distribution. In the study area, though small and quality pots in general have a wider areal dispersal and the availability of transportation facilities and pot traders have their own impact on pottery

distribution, the presence or absence of a particular clay object in an area to where it would be distributed should have also taken into consideration. This is the reason why potters in Addi Hayla village have been taken griddle towards southwest as far as Jiba and Finarwa.

Whatever their spatial distribution is, archaeological sites of pottery would also be formed far away from production and local market areas. Thus, compositional analysis of potsherds discarded at these areas could help to suggest the locus of production communities and to examine how far pots were distributed from their origin (production area) in the study area. Related to this Costin (2000) has shown that compositional analysis of raw materials with finished pottery helps to recognize the production communities.

Though clay products are being replaced by metallic and plastic objects, in the study area, they are still part and parcel of the main source of domestic utensils for daily living of the society. They are generally serving for storing, processing/preparing and transportation facilities. Moreover, pots could have more than one function. For instance, the intended function of stew pot is for cooking stew (*Tsebhi*) but people also use it for preparation of porridge. Similarly, small jars such as *Gombo* have multiple purposes for they serve to prepare local beer *(Sewa)*, to store grains and flour and dough used for making of *enjera*. Arthur (2000) similarly stated that pots in their life time could have multiple functions.

Moreover, it has been described that pots in some areas have ritual functions (see, Gedef, 2005; Tadesse, 2014). Some pots in the area under investigation also play a great role in ceremonial activities. The typical functional objects in this regard constitute coffee pot and liquor jar. Coffee ceremony in the study area is held with coffee drink prepared in coffee pot. On the other hand, local beer prepared for social and religious ceremonies that would be celebrated by a mass of people is fermented in liquor jar. In such occasions the role of beaker to serve the drink is so pivotal.

Generally, in the study area, pottery serves many functions. Moreover, some pots could have more than one function before they end up into the archaeological record. Thus, it would likely suggest that pottery in the archaeological record might have been multiple services to perform wide range of activities for the societies.

More significantly, some household activities on the aid of pots could leave their residues on the interior walls of the objects. Analysis of the residues then would have an archaeological significance. Related to this Rice (1996) noted that analysis of residues left in pottery helps archaeologists to recognize what was actually contained in prehistoric pottery. Other argued that it is possible to reconstruct diet of the then society based on the residues left in pot shards (Renfrew and Bahn, 2008; Ashmore and Sharer, 1996; Fagan, 1975). As it is already described so far, pots in the study area are used to contain and process various food items and crops. As a result, some potsherds could be left with residues of food items and crops. This may help, thus, for archeological interpretation of potsherds in terms of food items in the area under investigation.

Furthermore, Arthur (2000, 2002) described that pots used for brewing alcohols bear evidence of eroded interior surface walls; and this can provide a clue to understand the function of pots as well as diet of the people in archaeological context. In the study area, too, despite the fact that manufacturing of large and medium sized jars is almost ceased, such kinds of clay vessels are found in the households of both potters and non-potters while offering services in brewing and storing of local beer (*Sewa*) and holding of flour and dough. Moreover, some of such objects exhibit scratched/rubbed interior walls (see, figure, 25) and thus it is possible to identify their function and diet of the consumers in archaeological sites of the study area. According to informants, pots develop surface scratch mainly because of repeated use for longer period of time which is similar with the account given by Longarce (1991) in Gedef (2005:107) i.e. "the longer the pottery is used, the more pronounced the surface alteration becomes". On the other hand, griddle has black, very shiny and smooth baking surface and burned bottom surfaces as it is used for long time and thus it could possible to distinguish griddle from archaeological sites in the study area. Dombrowski (1971) noted that griddles are easily identified archaeologically because of their oily black burnished surfaces and burned bottom. Furthermore, as I observed, in some cases it is possible to distinguish griddle which has offered service previously from griddle yet not provided any service in which unlike in the former, where the interior surface is entirely black, in the latter the baking surface could bear both black and red colors. This is particularly visible on griddles manufactured in Addi Hayla village for they directly fired their interior (baking) surfaces with small amount of cattle dung (see figure, 21).

Though coffee pot has ceremonial function, it is difficult to recognize such type of function in archaeological sites since except its morphology it has not any sign or mark by which some one can differentiated it from other types of pots across the study area.

In relation to social identities of artisans Costin (2000) pointed out that:

> *….unlike in ethnographic studies, in archaeological research the artisans themselves are rarely directly visible or observable. There are many methodological and substantive issues in artisan identification that remain, and ethnoarchaeology may provide insight, particularly because ethnographic analogy has traditionally been a primary means of identifying artisans. Ethnographic analogy has been much maligned as a method for speculating about the social identities of prehistoric artisans; it is only with more thoughtful analysis of extant divisions of labor and their material and sociopolitical correlates that greater confidence can be built in this method* (2000:394).

Written sources indicated that craftsmen are associated with low position in the eye of non-craft majorities (See, Hecht, 1969; Rice, 1987; Simoons (1960) in Nicklin, 1979; Temesgen, 2011; Skibo, 2013). Moreover, written accounts revealed that Ethiopian potters were considered as lower classes with less social status (e.g. Cassiers, 1971; Quirin, 1977; Arthur, 2000; Pankhurst, 2001; Lyons and Freeman, 2009; Lyons, 2014). It has been described that in many societies of Ethiopia pottery making is associated with evil eye (*Buda*), those who possess powers which provide them to inflict harm over others (Quirin, 1998; Lyons and Freeman, 2009; Lyons, 2014). Previous researchers noted that the reason behind the perception of pottery making as evil is associated with the soil (clay) which potters use. Accordingly, potters are assumed as polluters of the land by doing something bad to the clay (Hallpike, 1968, Tsehai, 1991, 1994 and Silverman, 2000 cited in Lyons and Freeman, 2009; Lyons and Freeman, 2009). For instance, Hallpike (1968) "was told that Konso potters do something 'bad' with the clay when they treat it like food by grinding it and making it into a sterile object rather than tilling the soil to make it fertile" (Hallpike, 1968 in Lyons and Freeman, 2009:80). Consequently, more or less similar concept is attached to potters that they damage things which are new, fertile and fresh including children (Todd, 1977 and Tsehai, 1991 in Lyons and Freeman, 2009).

In eastern Tigray, potters are despised by their non-potter neighbors for they are believed to possess powers and the occupation (pottery making) is considered as the job of extreme poverty (Lyons, 2014). Similarly, Pankhurst (2001) stated that since actively participating in craft work is considered as inferior to any job, craftsmen have generally been looked down upon by the rest of

the community and marginalized politically, economically, socially and culturally throughout the country (Ethiopia).

As craftsmen in other parts of the country, potters in the area under current investigation are despised and marginalized. In the study area there are potters who have an old attachment with the craft. As such, for a long period of time the craft of pot making was preserved as an occupation for those marginalized groups who are believed to be evildoers. These includes among the potters of Gawee, Edaga Arbi and Ara. However, there are formerly non- potters in the villages of Addi Hayla and Ara who were involved in the craft latter. Nevertheless, the attitude of the main stream societies towards those engaged to the craft latter and those who have long attachment with the craft is not the same. Accordingly, the main stream society regarded the traditional potters (who have long attachment with the craft) as possessor of bad sprit (evil) through which they cause others to be sick and die. According to the expressions of the mainstream society, these groups of societies have an evil spirit which passes through generation and this power helps them to eat people and also to change themselves in to hyena at night. Thus, the mainstream society insulted the traditional potters with words such as *Anteregna*, *Ketkati*, *Tebib* and *Buda*.

However, there is no derogatory attitude to those formerly non-potters but currently introduced to the craft in Addi Hayla and Ara, the same was true in Gondar (see, Gedef, 2005). They are not ascribed as evil eyed. Accordingly, unlike in traditional potters, the mainstream society respected and looked those formerly non-potters without fear. Nevertheless, people throughout the study area dislike the work of potting in general hence it is considered as a dirty work. Thus, people are engaged in potting only if they have lack of enough return from agricultural activities. According to potters of Addi Hayla and those recently engaged to the craft in Ara, they took the craft as source of their income to fulfill their basic needs. This indicates that though those who are involved to the crafts recently are not insulted physically, pot making part of their occupation is despised and not respected.

Thus, it is possible to suggest that regardless of the time length of engagement to the craft, involving in craft working by itself is enough for marginalization and stratification of people in different groups. With regard to this, Temesgen (2011) strongly argued that occupation (craft working) is the only reason for craftsmen to have lower position within the mainstream society.

Though some changing trends are on and off, the negative attitude towards traditional crafts still exists in the area under current investigation

The marginalization of crafts can also witness from their settlement in their respective villages. Related to this, Cassiers (1971) stated that potters have long lived in their own social group found along the borders of towns or villages. Likewise Lyons and Freeman (2009:85) stated that "in Ethiopia stigmatized potters are either spatially segregated into separated communities or they are mixed within communities populated by other farmers". In the study area, likely, traditional potters live in their own social group at the edges of the entire villages. As far as their production area is inside or close to their compound, it is possible to recognize potters household within the villages archaeologically for it could be left with remains of tools used to shape and polish objects, potsherds and firing pits in association with deposition of ash.

Conclusion

This study has attempted to investigate the whole aspects of pottery production among the contemporary potters of Saharti-Samre and Hintalo-Wajirat districts of southeastern zone of Tigray region with a particular reference on four selected villages.

To begin with the raw materials, this study indicates that there are similarities and differences in the types of raw materials across the study area. Accordingly, Clay is the basic component of pottery in all villages. Sand, unfired potsherds and donkey dung are tempering materials utilized by potters of the study area. Except in Ara where the clay seems compacted and has gray color, the clay in the remaining villages in general has black color. In addition, according to my observation, the sand used as temper is more or less similar at intra- and inter-village levels. This, thus, suggests that there is similarity in the types of raw materials by which pots are made at intra-and inter-village levels. However, those who utilize donkey dung as temper among the jar makers of Gawee village makes them unique from others at both intra-and inter- village levels.

Though, according to my observation, the clay, except in Ara, and sand in all villages bear similarity, they may have compositional variation from one locality to another if the raw materials are examined through laboratory analysis. As a result, this could help to distinguish the source area of archaeological potsherds that would likely discover in the study area.

According to the result of this study, the procedures of pottery production generally involves collection of raw materials, preparation of paste, forming and shaping, making decoration, drying, polishing and firing which are more or less similar across the selected villages. Furthermore, the tools used to perform pottery making procedures bear some affinity at intra-and inter-village levels. Besides, some types of products and decoration patterns are widely distributed in all villages. All these could help, thus, to suggest the prevalence of socio-cultural contact among potters of a single locality as well as potters found in different villages of the study area.

However, there are also variations in the types of decoration styles and products within a single locality as well as from one locality to another. Besides, variation is also seen in pottery making tools such as supportive devices from village to village. However, none of these differences

could indicate the occurrence of variation in ethnicity; instead could be indicators of the availability of local specialization. Accordingly, interpretation of ethnic groups on the ground of archaeological potsherds that would likely discover in the study area could not be applicable. Nevertheless, the variations could help to deduce the source of production areas in the study area at a wider context.

According to the result of this study, there are changes and continuities in the tradition. Though previous potters of the study area employed fired potsherds as a temper, it is not employed by contemporary potters. Besides, the occurrence of unique types of potsherds such as small bowls with ring bases and decoration patterns such as crisscross incised lines, finger pinch on appliqué and grooved lines among the surface collection of potsherds in the discard sites could be good manifestations of the prevalence of discontinuity in the tradition across time.

On the other hand, the presence of some sort of affinity in decoration styles and types of pots among the potsherds found in the discard sites and the contemporary potters would likely suggest the continuity of the culture of pottery technology in the study area.

In the study area activities related to pottery production are conducted in the compound of the potters. As such, firing pits with debris of ash, tool kits employed in pottery production and broken pots could be left behind the production areas and eventually entered into the archaeological record. Similarly, pots could be broken and discarded at market places and finally they would become an archaeological record. Besides, pots could be discarded in and near the compound of consumers. Thus, it could be possible to suggest that archaeological records of pottery can be formed in production and market areas as well as in the villages of consumers in the study area in general.

In spite of the introduction of modern industrial born plastic and metallic containers, pots are still used for storing, processing as well as transportation. Some services such as brewing activities will cause pots to develop rubbed and rough interior surfaces. Besides, some food items stored and processed in pots could leave their residues. This, thus, could have an archaeological significance to recognize the function of pots as well as the diet of the people who made the archaeological record inferred from archaeological potsherds in the study area.

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List of Informants

No	Name	Socila Group			Sex	Age	Date of Interview	Place of Interview	Remark
		Potter	Other Artisian	Non-Craft					
1	Abeyneyra Gidey	*			F	38	26/01/216	Gawee	
2	Abriha Halefom	*			F	66	14/02/2016	Addi Hayla	
3	Abriha Tesfay	*			F	45	30/02/2016	Edaga Arbi	
4	Aetekiros Kebede	*			F	36	12/03/2016	Ara	
5	Afera Gebre	*			F	47	12/03/2016	Ara	
6	Alem Mengesha	*			F	30	22/02/2016	Addi Hayla	
7	Arsema Kiros	*			F	21	19/03/2016	Ara	
8	Asefu Asgedom	*			F	61	26/01/2016	Gawee	Interviewed about Tseanee &Tsaeda Kewhi Sites
9	Asefu Girmay	*			F	28	30/02/2016	Edaga Arbi	
10	Azmera Areqi	*			F	55	6/03/2016	Edaga Arbi	
11	Berhe Abrha		*		M	40	17/03/2016	Ara	Smith

12	Birey Kellelew	*			F	24	22/01/2016	Gawee	
13	Birey Tadesse			*	F	24	16/01/2016	Gawee	
14	Birhane Niguss	*			F	61	12/03/2016	Ara	
15	Brhane T/himanot	*			F	66	16/03/2016	Ara	
16	Dessalegn Berihu		*		M	61	16/03/2016	Ara	Smith
17	Dessalegn Eyasu		*		M	59	19/01/06	Gawee	Tanner and have also oral history about Tseanee &Tsaeda Kewhi Sites
18	Embafresu Haile	*			F	65	19/01/2016	Gawee	
19	Engda Redae			*	M	74	23/03/2016	Zigadele	Interviewed about Gira'abo Niguss & Gira'abo Giden Site
20	Etay Zenebe	*			F	5o	22/02/2016	Addi Hayla	
21	G/hiwot Kalayu		*		M	55	4/03/2016	Edaga Arbi	Smith
22	Gebrel Gitaw	*			F	39	25/01/2016	Gawee	
23	Gebrela Gebre			*	F	21	20/03/2016	Ara	
24	Geremcheal Hailu			*	M	65	20/03/2016	Ara	

25	Gebru Birhanu		*		M	37	10/02/2016	Addi Hayla	Waever
26	Hadas Gidey			*	F	19	19/02/2016	Addi Hayla	
27	Hadush Abadi			*	M	68	18/02/2016	Addi Hayla	
28	Hadnet Girmay	*			F	44	16/01/2016	Gawee	
29	Haftay Gebre			*	M	39	26/02/2016	Edaga Arbi	
30	Hagos Kalay			*	M	61	22/03/2016	Zigadele	Interviewed about Gira'abo Niguss &Gira'abo Giden Site
31	Hibuni Belay			*	M	54	16/01/2016	Gawee	Interviewed about Tseanee &Tsaeda Kewhi Sites
32	Hiwot Afera	*			F	22	05/03/2016	Edaga Arbi	
33	Kebede Mesfun			*	M	84	21/01/2016	Gawee	Interviewed about Tseanee &Tsaeda Kewhi Sites
34	Kiros Teklu			*	M	86	21/01/2016	Gawee	Interviewed about Tseanee &Tsaeda Kewhi Sites
35	Komes Aregay			*	F	43	18/03/2016	Addi Gudom	Pot trader

36	Lemlem Abrha	*			F	42	05/03/2016	Edaga Arbi	
37	Lemlem Hailu	*			F	38	13/02/2016	Addi Hayla	
38	Letay Adhanom	*			F	46	25/01/2016	Gawee	
39	Letebrhan Berhe			*	F	40	24/01/2016	Samre	Pot trader
40	Letekidan Haile	*			F	20	21/01/2016	Gawee	
41	Letekiros Haile	*			F	62	26/01/2016	Gawee	Interviewed about Tseanee &Tsaeda Kewhi Sites
42	Letezgu Hagos	*			F	26	19/01/2016	Gawee	
43	Letu G/hanis	*			F	61	27/02/2016	Edaga Arbi	
44	Mebrate Abera	*			F	46	21/03/2016	Ara	
45	Medhin G/medhin	*			F	46	15/03/2016	Ara	
46	Medhin Wereda	*			F	63	28/01/2016	Gawee	Interviewed about Tseanee &Tsaeda Kewhi Sites
47	Mentegaeba Yisaq	*			F	45	01/02/2016	Gawee	
48	Mihret Abrha	*			F	63	13/02/2016	Addi Hayla	
49	Mitiku Birhanu		*		M	62	10/02/2016	Addi Hayla	Weaver
50	Muruts Habeney			*	M	66	10/03/2016	Addi Hayla	

51	Nigsty Hadush			*	F	56	21/03/2016	Ara	
52	Sesen Tesfay	*			F	50	24/01/2016	Gawee	
53	Shashu G/tekle	*			F	55	30/01/2016	Gawee	
54	Sindayo Abrha			*	F	67	08/03/2016	Edaga Arbi	
55	Sindayo G/ezgi	*			F	64	01/03/2016	Edaga Arbi	
56	Tadele Birhe		*		M	62	07/03/2016	Edaga Arbi	Smith
57	Taemo Arefe	*			F	41	21/02/2016	Addi Hayla	
58	Tekin Kassa	*			F	27	28/01/2016	Gawee	
59	Temnit Mehari			*	F	28	02/03/2016	Edaga Arbi	
60	Temesgen Girmay	*			F	35	07/03/2016	Edaga Arbi	
61	Tewelde Abriha			*	M	48	08/02/2016	Addi Hayla	
62	Tiblets Berhe	*			F	80	13/03/2016	Ara	
63	Tihesh Berhe	*			F	40	22/032016	Ara	
64	Tinsu H/slassie	*			F	43	22/02/2016	Addi Hayla	
65	Tsegay W/tekle	*			F	48	23/01/2016	Gawee	
66	Tsehaynesh Abra	*			F	61	16/02/2016	Addi Hayla	
67	Twres W/gergis	*			F	65	26/02/2016	Edaga Arbi	
68	Weldu G/mariam		*		M	86	23/01/2016	Gawee	Smith and have

									also oral history about Tseanee &Tsaeda Kewhi Sites
69	Weyzer Tadesse	*			F	61	27/01/2016	Gawee	
70	Yeshu Abadi	*			F	34	11/02/2012	Addi Hayla	
71	Zenebe Hagos			*	M	64	20/03/2016	Ara	
72	Zifan Haftu	*			F	61	22/01/2016	Gawee	
73	Zimam Kidane			*	F	69	26/02/2016	Edaga Arbi	

Appendix

Some Interview Guide line Questions

Note: The interview guide line questions were divided in to three parts: for potters, non-potter crafts and non-crafts.

Personal Information (for all informants)

Name_____ Age_____

Place of Birth_____ Marital Status_____

Interview Guide line question for potters

A. Details of Manufacturing Process

1. What raw materials are used to manufacture pottery vessels?
2. What are the sources of these raw materials and how do you acquire them?
3. Are there any challenges you face in accessing the raw materials? If yes, what are they?
4. How do you choose raw materials? What are the selection criteria?
5. How are clay and other raw materials prepared before the actual modeling?
6. What are the procedures of pottery production?
7. Where do you produce pottery?
8. What are the necessary tools used for pot making?
9. Do changes and continuities have occurred in the types of products?
10. Why decoration is made on pots? Do decorative treatments of pots have any symbolic meaning?
11. Where do you fire the pots?

B. Details of Marketing of Pots

1. Where do you sell your products?
2. Where do your customers sell your pots?
3. What are the factors that affect the demand of pots?
4. What kinds of pots have a wider geographical distribution?

C. . Details of discard of pottery

1. When does one decide a pot has reached the end of its useful life?
2. Where potsherds are discarded?

D. Details of socio-cultural aspect of Pottery making

1. Why do you become a potter?
2. When did you begin pottery making?
3. How did you learn the skill of pottery making?
4. What is the role of males and females in pottery production?
5. What looks like your interaction and friend ship with other crafts and non-crafts?
6. Are there any rituals involved in pottery production activities?

Interview Guide line questions for non-potter crafts

1. Why did you start craft working? Who taught you and how is knowledge transferred?
2. When did you start the craft?
3. How do you describe the relation with potters and the non-crafts?
4. Do other peoples admire you to do it?

Interview guide line Questions for non-crafts

1. What types of relationships do you have with potters?
2. How do you describe marriage between pottery artisans and non-artisans?
3. What is the function of pots in your household?

Guiding questions about the discard sites

1. Who inhabited the area and what was their occupation? When they live in the area? Why and when they left the area?
2. Is there any material object found in the site before? If yes, what were the discoveries?

Declaration

I, the undersigned, declare that this thesis is my own original work and all sources of materials used for the thesis have been duly acknowledged.

Name: Tilahun Asefa

Signature: _____

Date: June, 2016