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Table of Contents: Volume 9 Number 4 August 2018

ARTICLE

**Potential and challenges of rock art for sustainable tourism development:
The case of Harar - Dire Dawa region, South Eastern Ethiopia**
Dagnachew Leta Senbeto

Full Length Research Paper

Potential and challenges of rock art for sustainable tourism development: The case of Harar - Dire Dawa region, South Eastern Ethiopia

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Prehistoric rock art is one of the earliest form of human communication system. It has an aesthetic, spiritual, socio – cultural and artistic values. This study has attempted to address the role of rock art tourism for sustainable socio-economic development with the objective of describing the potential of rock art sites for tourism in Harar – Dire Dawa and in its environs. It also tried to identify challenges facing the rock art sites; and examining trends of sustainable rock art tourism development and preparing a code of conducts for rock art and surrounding tour. Data analysis showed that rock art and its surrounding resources have a high potential for sustainable tourism development in the region. The study follows a mixed method of research design. The result also revealed that the main challenges facing rock art sites of the study area are natural and human factors that affect the values of the sites. Therefore, this important resource should be properly managed and promoted as to develop a significant tourist destination, and it also assists the socio –economic development of the region.

Key words: Rock art, tourism, cultural tourism, sustainable tourism.

INTRODUCTION

Dire Dawa area is known for its natural and cultural heritage. Those heritages include caves and shelters with rock art; cemeteries of British and African soldiers who died during the war against Fascist Italy in eastern Africa; various historical houses with French, Greek, and Armenian architectural influences because of their migration to the city for industrial and commercial purposes; railway museum, and cultural centers which housed material cultures of the Somali and Oromo people are major attractions of the city (Dire Dawa Culture and Tourism Office (DDCTO), 2008).

Harar (the other focus of this study) is one of the

national regional states of Ethiopia. The term “Harar” is derived from among seven ancient settlements which is known as “Harawe gey”. It is located about 50 km southeast of Dire Dawa. Harar is endowed with ancient historical and religious attractions. The walled city called Jugol was once the seat of an old Islamic sultanate founded around 10th century (HCTB, 2010).

The city of Harar is divided into two historic centers Jugol and the new Harar. There are 82 mosques and 102 shrines in the old city. Harar is the fourth world’s Islamic center next to Mecca, Medina and Jerusalem. Harar is renowned for its natural and cultural attractions. The

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United Nations Educational, Scientific and Cultural Organization have inscribed the old walled city of Jugol as world heritage site in 2006 (HCTB, 2010). Besides, other heritage sites such as Sitti mountain, Hayena feeding, Adere house, Sherif Harar City Museum, Harari Cultural Museum and Adere Museum are major attractions of the city.

Most of the rock art sites are found around Harar and Dire Dawa region. However, these resources are not properly managed and develop into tourist destination areas. Therefore, this study has figure out the sites great potential for sustainable tourism development that would support the host community and other stakeholders in and around Harar and Dire Dawa. In fact, rock art research from archaeological and conservation perspectives are conducted by various scholars. Nevertheless, rock art research from tourism context is still at its infancy. Meanwhile, the available researches also do not focused to the contribution of rock art for socio- economic development of the host communities. They are preoccupied mainly on culture- historic significance of the sites. As stated earlier, there are limited works on rock art of the study area. In addition, researches gave less attention regarding sustainable tourism development of the site. In response to this, this research assessed and analyzed the potential and challenges of rock art for sustainable tourism.

The study also examines the current trends and prospects of rock art towards sustainable tourism development from different contexts and later on develops a code of conducts for rock art tour. This study designed to address the following specific objectives:

1. Assessing potential of rock art sites for sustainable tourism development
2. Identifying challenges in the development of sustainable rock art tourism
3. Examining the existing trends of sustainable rock art tourism in the region
4. To conduct code of conducts for rock art tour

MATERIALS AND METHODS

Description of the study area

The rock art sites of Harar- Dire Dawa and its environs are found at the foothills of the escarpment of southeastern Ethiopia highlands stretching from the Afar plains all the way to Harar and Dire Dawa plateau. The sites were "home bases" for both hunter-gatherer and later pastoral nomads. For instance archaeological excavation at Porc Epic and LagaOda caves shows human occupation of these sites since 77,000-60,000bp and 15,000bp respectively (Clark, 1978). Clark (1954) suggests that during rainy seasons pastoralists moved from lowlands of the rift to the foot hills of the Harar escarpment vice versa in search of water and grazing. The escarpment was relatively rich in water resource and grazing lands than lowlands. In a similar vein, Girma (2001) mentioned that pastoralism closely linked with rock art sites situated in southern Ethiopia.

As relatively similar with other African, Arabian and Saharan rock art (Anati, 1972; Brandt, 1987; Bednaric, 1991; Philipson, 1985; Willcox, 1984), south-eastern Ethiopia's rock art sites depicted mainly for hunter-gatherers and pastoralists (Temesgen, 2005). Totally, five sites are selected for the purpose of this study. A description of the sites is presented below.

Porc – Epic

This cave is located 2 km south of Dire Dawa at the foot of the escarpment rising from the southern Afar plain and straddling the mouth of Datchatu River. It is located at 9°29' 19' north, 41°54' 34' east at an elevation of 1681 m above sea level which is close to the top of Garad Erer or Genda Feltilhill that rises very steeply from the wadi floor on the eastern side. Porc-Epic is currently under the rural administration of Dire Dawa Administration Council surrounded by Janeni, Berarti, GaradErrer, Gode Bela, Dichaso and Genda Felti villages (Figure 1). Porc-Epic was first reported by the French paleontologist Pere Teilhard de Chardin and Henry Monfried who made excavations in 1929. Again in 1933, it was excavated by Pere Teilhard de Chardin and Paul Warnert, in the same year Breuil also studied the paintings of Porc-Epic. In the mid-1970s Clark and Williams, and lastly in the 1999 Delumely also made excavation (Clark and Williams, 1976). The above archaeological investigation in the cave shows, the site is rich in the painting of wild animals such as elephants, antelope, buffaloes, giraffe, human figures and geometric symbols painted in red color.

Laga - Oda

The rock art site of Laga-oda is located some 38 km away from Dire Dawa city in the Guninfeta Peasants' Association close to Guninfeta village. It is found at 9°30'9" north and 41°40'25" east at an altitude of 2290 meters above sea level. Laga-Oda is known locally as Goda-Kataba which means a cave with written records. Goda-Okotae, Genda Nemo and Goda-Buttu rock art sites are found close to this site. It is a limestone rock shelter situated in the escarpment that separates the lowlands of the Afar rift from high plateau grasslands of Hararghe.

Laga-Oda was reported first by Pere Azais and Oncieu de Champardon in 1933 (Cervicek, 1971). Following this, many scholars had carried out investigations on the site and still the site becomes the focus of research for many scholars interested in prehistoric study (Figure 2). There are many rock paintings in two shelters (upper and lower) of Laga Oda cave which are still undiscovered. According to Cervicek (1971), the number of paintings exceeds up to 600 with 250 to 350 specimens. Apart from paintings, there are other written records on the wall of the cave. The upper shelter has much larger size than lower shelter. It also has larger number of rock art than the lower shelter (Figure 3).

According to Temesgen (2005), the upper shelter has 60 meter width, 3 meter height, and 4 meter depth from the drift line to the back wall. On the other hand, the lower shelter has 2 meter height, 28 meter width and 2.5 meter depth. The two shelters of Laga-Oda have relatively large number of paintings than the other rock art sites found in Harar-Dire Dawa region.

Daga Frenji/Kimet

The rock art site of Daga Ferenji is located some 20 km away from the city of Harar in Error Dodottaworeda at Genda Roka rural kebele at the village of Kimet. It is found to the south east of Harar on the main road to Jijiga. It takes some 30 min' walk from the main road with steep slope. The name of the village "Kimet" means jewelry in Oromifa language. Historically, the name "Kimet" is



Figure 1. Porc-Epic Cave and its paintings (by the researcher, 2013).

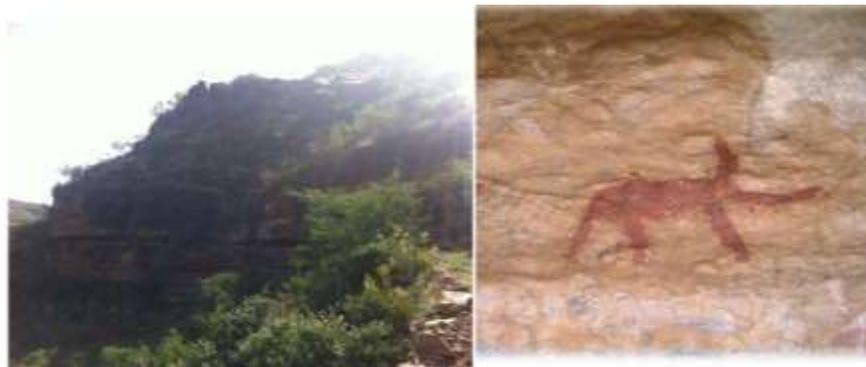


Figure 2. Shelters of Laga Oda cave and its painting (by the researcher, 2013).



Figure 3. Red and black paintings of Laga Oda (by the researcher, 2013).

associated with Harla people who are assumed to establish a jewelry market on the village. According to locals' consideration, the name of the village was given by the extinct Harla people. The name 'Daga Ferenji' is derived from an Oromifa word Daga which

means stone and 'Ferenji' is a term used by Ethiopians for foreigners. The two terms together gives a meaning of "the stone of foreigners". This was because the local people had observed the stone (rock art) was mostly visited by foreigners (Harif Taha, pers



Figure 4. DagaFrenji/Kimet rock art site and its paintings (by the researcher, 2013).



Figure 5. Rock art of Olad (by the researcher, 2013).

comm, 2013) (Figure 4).

Red and white colors are used to paint the rock art of this site. The colors of Daga Ferenji show similarity in style with the rock paintings of LagaOda, Sheka Sherifa, Porc-Epic and Goda-Ajewa. Naturalistic and schematic styles are used to represent domestic cattle like that of Laga Oda. The age of the paintings of the region is not dated. However, according to local community's assumption, the paintings are made by the Harla people in the 16th century since; the influence of the Harla people stand high in the region's art and craft development (HCTB, 2010). There is a white mark on the paintings added later by an Italian 'researchers' during the Italian occupation. Currently, the art relatively exists in a good condition. However, the boulder is exposed to erosion and human contact.

Olad

The rock art site of Olad is located some 40 km away from the city of Harar in Error Dodottaworeda in Oladkebele. The site is found south east of Harar on the main road via to Babile, and it takes an average of 3 h. There are panoramic views at Olad which are very pleasant and covered by green plants in all seasons. It is suitable

for trekking, hiking and skiing. Besides, the site is very close to the Babile Elephant Sanctuary, Argoba village, Sofi-Harla archaeological site, and famous shrines of rural Harar (Figure 5).

Red and black colors are used to paint the rock art of this site. The colors used to paint Olad site and the style of the paintings show similarity with rock paintings of Daga Ferenji except the use of black color at Olad. Naturalistic and schematic styles are mostly used in depicting domestic cattle like other rock art sites of the study area. However, cattle paintings of Olad are different from other sites in drawing head at normal scale and it is not overstating their horns. The reverse is true in most rock art site of Harar-Dire Dawa region.

Goda - Ajewa

The rock art site of Goda-Ajewa is located 28 kilometers from the city of Dire Dawa at the hill of Goda-Ajewa, and has a height of 2050 meters above sea level. The cave is found in Awale rural kebele at a village called "Awale Kebele Peasants Association". Goda-Ajewa cave is found on the top of a hill which is used now as agricultural field by local farmers. The area is fertile and produces many types of crops (DDCTO, 2013). The name of the cave "Goda-



Figure 6. Paintings of Goda-Ajewa (by the researcher, 2013).

Ajewa” is derived from two Oromifa words “Goda” which means a “cave” and “Ajewa” which has the meaning of “unpleasant smell”. Thus, the two terms gives a meaning of “a cave which has unpleasant smell” (Pers comm, 2012). In terms of its paintings, the site has the same character with the above sites especially similar to Porc – Epic and Kimet with its red paintings and schematic style (Figure 6). Goda-Ajewa and its surrounding area attract visitors and the site also very suitable for trekking, skiing and hiking and as whole it suits for adventure tourism. In addition, the site located on strategic location to visit the whole village of “Awale”, and it’s best suit for Para gliding.

Approach

Mixed approach was employed to follow a comprehensive technique for researches going beyond the limitations of a single approach (Spratt et al., 2004). Both primary and secondary data sources were used. The researcher employed purposive and simple random sampling techniques. For this purpose, 150 stakeholders (communities and officers) from the five sites were randomly selected. The study was conducted in 7 month period (January, 2013 to June, 2013). Collected data which is systematically verified, described, analyzed, and interpreted by using qualitative (more of them) and quantitative approaches. The data from questionnaires was analyzed through frequencies and percentages (Miles and Huberman, 1994). In addition, descriptive narrative approach was used to analyze data from observation and interview.

RESULTS AND DISCUSSION

Potentials of rock art sites for sustainable tourism development Nelson Mandela has themed that “Africa’s rock art is the most common heritage of all Africans, but it is more than that. It is the common heritage of humanity” (TARA, 2010). Mandela’s statement shows that rock art sites are not only a heritage resource but also they are a universal heritage of all mankind. Therefore, rock art sites have a potential to become a sustainable tourism destination no matter where they are located but what they need is critical assessment and evaluation of their tourism potential. 100% of the respondents have agreed that rock art sites of Harar- Dire Dawa region have potential for a sustainable tourism development based on their values. The majority of the sites are centers of

attractions for visitors and researchers. Researchers have already understood the high potential of rock art for sustainable tourism development from their field observation.

Resource assessment requires preliminary survey of the potential of the resource for sustainable development and the categorization and weighting of the resource according to their attractiveness for the purpose of tourism (Nrdoro and Pwiti, 2009). In this study, the potential tourism resource of a rock art site is evaluated through field work, observation, discussion with experts and managerial staffs engaged in rock art sites of Harar – Dire Dawa region. In addition to field observation, a standardized semi- structured questionnaire and interviews were used to evaluate the potential of rock art sites for sustainable tourism development. This study has categorized the potential of rock art tourism resources on the basis of its archaeological, historical, economic, aesthetic, and socio-cultural values.

Historical and archaeological values

As Kofi Anan demonstrated “the rock art of Africa make up one of the oldest and most expensive records on earth of human thought. It shows the very emergence of human imagination” (TARA, 2010). Nrdoro and Pwiti (2009) states that rock art are used to educate single or group concepts in a particular time and space, and also about specific society. It is also used as a rule to direct and reflect a particular culture as a medium of language.

The above statements show that rock art sites can be used as a source in order to know the prehistory and history of mankind. According to the respondents and informants, rock art sites of Harar – Dire Dawa region have significant historical value owing to its age. It shows ancient civilization of mankind in hunting and gathering; and the domestication of animals and its transformation to the modern way of life (Crabtree and Campana, 2006). Rock art has a potential to be a primary source for prehistory and history because of its stylistic and artistic expression. Based on the earlier thoughts of respondents,



Figure 7. Trekking and Para gliding site at Olad (by the researcher, 2013).

informants and field observation, the historical value of the rock art site has a tremendous contribution in developing sustainable rock art tourism because human beings by their nature have interest to know the past (Tadele Solomom, pers comm, 2012).

Rock art is an artistic and archaeological heritage and an irreplaceable record of man's most remote past (Negash, 2001). In line with this, rock art sites of Harar and Dire Dawa region could be developed into centers of attractions due to their archaeological value. Thus, as Tekle has stated it would be necessary to promote Archaeo – Tourism in such kind of rock art sites (Tekle Hagos, pers comm, 2012). Since the rock art sites of Harar – Dire Dawa region like Porc Epic and Laga-Oda have Stone Age archaeological records, they would be ideal sites for Archaeo-Tourism development. Generally, Rock art sites in Harar – Dire Dawa region have historical and archaeological values that could be used for sustainable tourism in the area.

Socio economic value

In other countries, the presence of rock art sites is well known and widely promoted as a tourist destination due to their potential for socio - economic development (Lambert, 2007). Therefore, rock art sites of Harar and Dire Dawa can generate favorable economic benefits to the stakeholders and the host communities residing close to rock art sites if they are developed in a sustainable manner. Rock art sites have the potential to stimulate local socio-economic development. The sites have significant potential to bring economic benefit for the host community and stakeholders since it attracts visitors and researchers who has interest to visit heritage sites with historical, archaeological and geological values. 100% of the respondents believe that the rock art sites of Harar-Dire Dawa region can enhance socio – economic

developments.

Aesthetic value

Rock art sites have a natural setting which creates an extraordinary feelings and spectacular happiness in the minds of the visitors. As mentioned earlier, rock art sites under investigation have panoramic views and have a potential to attract tourists who has a special interest for trekking, and Para Gliding activities (Figure 7). According to informants, the Harar – Dire Dawa region is attractive and has also a potential to attract visitors due to the presence of rock art sites with historical, geological and archaeological features. In addition to the rock art sites, the natural setting of the area has an aesthetic significance for beauty lover tourists.

Socio – Cultural value

Cultural tourism has become the fastest growing segment in the tourism sector (Novelli, 2004). The field of rock art tourism lies under cultural heritage tourism. Therefore, several techniques, approaches, concepts and theories are used as a means to interpret the cultural heritage of rock art sites (Tekle, 2011). Rock art sites of Harar – Dire Dawa region with its caves and shelters can give opportunities to the tourists for experiencing a sense of discovery, cross-cultural understanding and personal achievement. It also involves visiting socio-cultural features of local communities attached to natural features of the area. Rock art sites of Harar and Dire Dawa are encountered with cultural landscapes, traditional dresses and life style of the local community rock art sites have cultural attributes that fascinate visitors and can increase the length of stay and its visiting expenditure. Such potential of rock art sites has a potential to permit the

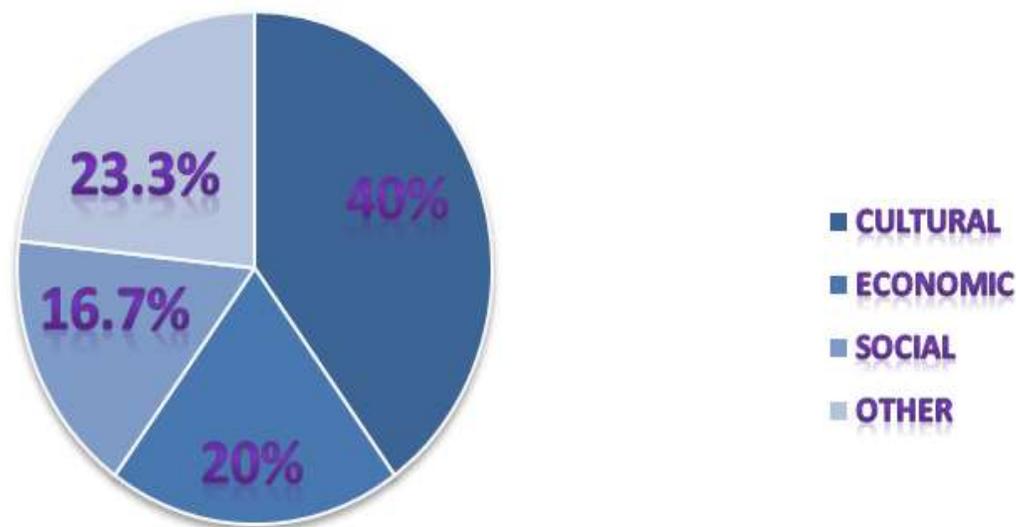


Figure 8. Value of rock art (Source: Field survey, 2013).

local communities to have a value for it and feeling proud and prestige. According to respondents and informants, 40% of them assumed that rock art has a much cultural value, 20% believe that it has an economic value in relative to other values, 16.7% believe that it has a social value and the other 23.3% of them agreed under other values (Figure 8). Generally, Rock art sites of the study area have great potential to improve understanding and respect among different cultures and in a long uses for sustainable tourism development.

Challenges facing tourism resources of rock art sites

Well-managed tourism can promote cross-cultural understandings and influence conservation policy (Buhrich, 2001; Harris et al., 2002). However, mediating between the interests of visitors, indigenous people, other land owners, commercial operators and heritage conservation is challenging (Cole and Buhrich, 2001). Poorly managed cultural tourism can threaten a site's physical condition and integrity, reduce its cultural significance and diminishes visitor experiences and brings negative cross-cultural attitudes (Nrdoro and Pwiti, 2009). Rock art in the past and present time has never been popular and recognized as a valuable heritage and thereby its scientific importance is not recognized by the state and public. Therefore, lack of ownership and exposition to natural and human-made problems will result in loss of the rock art heritage (Bednaric, 1991). In this study, the challenge of rock art was evaluated by local community residing on the site. Based on this, 100% of the respondents and informants are agreed that rock art sites of Harar- Dire Dawa region are facing various challenges.

Natural factors

Factors such as geological and geo-chemical processes, tectonic activity, erosion, flood, and weathering are the major natural forces that have a negative impact on the rock art sites of northern, southern and south eastern Ethiopia (Temesgen, 2005; Getachew, 2006; Tekle, 2011; Agazi, 2001). These natural forces aggravate the destruction of the rock art sites of LagaOda, GodaAjewa, Dega Ferenji, Porc – Epic and Olad. Specially, the rock art sites of Porc –Epic, Daga Ferenji and Olad are largely characterized by constant formation of stalactites due to water flow from the upper part of the cave and boulder all the way down to the base crossing the paintings. Due to this, the paintings are highly affected by water droplets which remain in the rock surface for a longer period. This has resulted in wetting the painted rock surface of the cave.

The water that flows inside the cave and boulder has a negative influence on the paintings. Furthermore, the paintings are exposed to different climatic conditions during rainy season. The caves and boulders become wet in cold and dry in the dry seasons respectively. Such kind of changes in climate has an unpleasant effect in creating cracking on the painting due to the wetting, drying and seasonal flow of water over the painted rock surface of the caves, shelters and boulders as a result, most of the paintings are destroyed and some are highly faded (Figure 9). Rock art site of Goda Ajewa and Laga Oda caves are different from Porc – Epic site. The paintings are not exposed to bird nests and droppings, nests of wasps since these caves are very short in depth. The animals mentioned previously do not get a space to get into the cave. Therefore, these rock art sites are free from the impacts of such animals.



Figure 9. Cracking and washing at cave rock art due to seasonal climate change, at Laga Oda and Porc Epic cave (by the researcher, 2013).

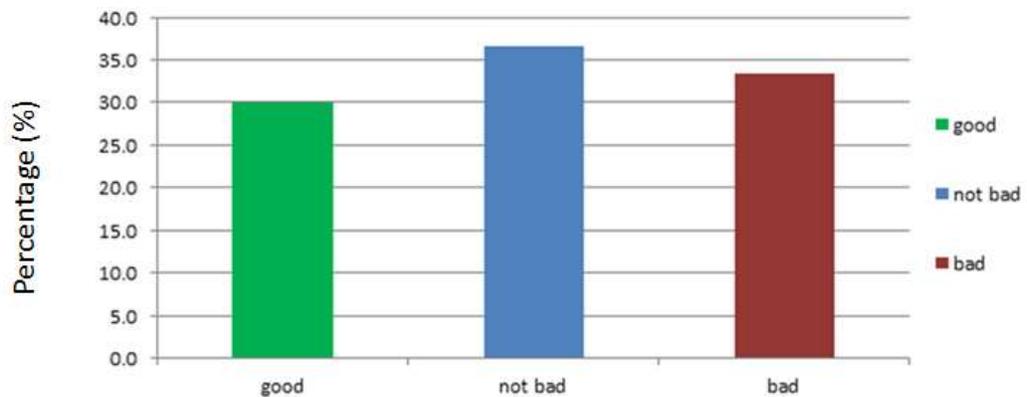


Figure 10. Host community awareness towards rock art sites (Source: Field survey, 2013).

Generally, rock art sites of the study area are highly exposed to wind erosion, sunlight (always in the afternoon) and rain storm. The sites are directly exposed to rain and sunlight which facilitate the weathering process of the rock art. As a result, threat is washed away and the surviving ones are mostly faded. For instance, the lower shelters of Laga Oda paintings are damaged due to weathering.

Human factors

Presently, the human factor becomes the most severe factor for the destruction of rock art sites than natural factors. This study categorizes the human factor as threats that come from local inhabitants, researchers and visitors.

Local inhabitants

All rock art sites of the study area are located very near

to farmland and settlements. Almost all sites are used for grazing, firewood collections, and using the sites for temporary shelter from rain and sun. Cattle and other animals also rub their body against the panels where the paintings are found. Other challenges on rock art sites are caused by shepherds, farmers and fire wood collectors who touch and scratch the paintings, re-draw the pictures using charcoal, and even washed the painted walls to see the paintings clearly. Names, replica of the image over the paintings by using chalks, charcoal and writing messages on the paintings are commonly found depicted on the walls of the sites (Figure 10).

73.3% of respondents believing that there is no participation of local communities in the benefit of rock art tourism and conservation, whereas 26.7% of them agreed that there are community participation in rock art sites. However, some local inhabitants know the presence of the painting in the caves, shelters and boulders and even know other rock art sites which are not registered by the concerned body. For instance, the researcher had visited and guided by informants to new rock art site locally known as Genda Nemo which exists



Figure 11. The broken and stolen fence of Porc – Epic (near to Dire Dawa) rock art site (by the researcher, 2013).



Figure 12. Vandalism activities at Olad by visitors and local inhabitants (by the researcher, 2013).

near to LagaOda.

The low level of participation makes the area vulnerable to challenges. For instance, there were some conservation activities undertaken by local tourism offices at Porc - Epic in fencing and hiring security guard which secures the site. But after a while the iron fence of the site was stolen (Figure 11). According to informants, creating awareness to the local communities about the rock art sites should be the first step before making any kind of conservation, management and development activities. This is because if they are aware of the potential benefits of the site they will protect it rather than destroying it like the above case on Daga Frenji, Laga Oda and Olad rock art sites through vandalism, theft, and writing on the site.

Researchers and Visitors

Mostly, Rock art site are located in a remote or inaccessible area and are hardly visited by researchers and visitors. Nevertheless, few of them are visited by

some interested tourists and studied by researchers. Rock art site of Harar and Dire Dawa region are mostly visited and investigated than other rock art sites in Ethiopia (Ahmed Zekaria, pers comm., 2013). Vandalism and defacement are the major impacts that are shown on rock art sites coming from researchers and visitors.

Currently, much of the paintings are destroyed. The use of chemical by researchers to make the paintings visible becomes the major threat for the survival of the rock art at Laga Oda and Daga Frenji, and Porc – Epic. According to local informants, some researchers and especially, visitors use spraying chemicals and sometimes they also use various oils in order to make the paintings clear for photographing. It investigated that such kinds of chemicals have great impact on the paintings and it is unethical activity (Bahn, 1998). Application of chemicals is the worst factor in the destruction of rock art sites in South Africa and Botswana (Deacon, 2006; Smith, 2012) (Figure 12).

According to local informants, Italian researchers during the Italian occupation (1935 to 1941) made extensive excavation and investigation at Daga Fereneji



Figure 13. Defacement on Daga Frenji rock art site by Italian researchers (by the researcher, 2013).

rock art site. The researchers had made defacement upon the paintings of the site. Currently, such defacements have an influence on the site's aesthetic features. The other defacement was made at Porc- Epic when there was a great archaeological excavation during the 1980s (Figure 13).

The use of chalks has an impact on altering the micro-geochemical system of the painted rock. As a result, dramatic contamination of polish was formed, and finally such formation may hinder the dating of the paintings. In addition to the earlier mentioned problems, the followings are also challenges facing the tourism resources of rock art site:

1. Lack of official attention, promotion.
2. Lack of adequate skilled man power, code of conduct for rock art tourist and stakeholders.
3. Lack of sense of ownership and belongingness.
4. Absences of research priority are problems which aggravate the destruction of the rock art sites.
5. Inaccessibility and risk of the site also have a challenge to welcome conservationist and heritage researchers. For instance, the researcher has escaped from the attempt of snake and bees attack both at Porc – Epic cave and Olad's boulder rock art site.
6. Lack of official attention; ignorance of local inhabitants towards the rock art site; and absence and fear of researchers (heritage researcher and conservationists) accompanied by other natural factors are major factors for the destruction and under exploitation of the rock art sites

Trends of sustainable rock art tourism development in the study area

Tourist flow, research and promotion

Eastern Ethiopia has a tremendous potential both in its

natural and cultural attractions. When it is compared with the northern route like Axum, Gondar and Lalibela, tourist flow to the site is still lying in a very small number (HCTB, 2010). However, the current tourist flow to the site is better than earlier. In the case of Dire Dawa, Djiboutian are major tourists who come to the city to escape the hot climate of Djibouti. On average, they stay up to 45 days in Dire Dawa.

With regard to rock art sites of Harar and Dire Dawa and its environs, 66.7% of respondents and informants observe visitors who come to visit rock art sites whereas 33.3 of them did not observe visitors who came to visit rock art site. These shows, rock art sites including with other attractions of the region can increase the tourist flow to the region.

Research is major pre – requisite for development of sustainable tourism. 93.3% of respondents answered that they have observed researchers who came to conduct investigation on the rock art sites; whereas 6.7% do not observe researchers activity in the area. Nevertheless, 60% of the respondents states that such studies do not have implications to ensure the sustainability of the site except its temporary academic achievements. 33% of the respondents agreed that the studies will have positive impact towards the sustainability of the site and the remaining 6.7% are not sure about the outcome of research results.

This shows that the research particularly focusing on sustainable tourism development is still lying at an infant stage. Currently, there are some attempts to promote rock art for tourists. According to informants from regional culture and tourism offices, during the Ethiopian millennium, there are some conservation works conducted at rock art sites in Dire Dawa in fencing and hiring a local security guard and also begin to advertise the rock art by using billboards and wall painting in the city of Dire Dawa (Figure 14).

Other private sectors like Muya Abyssinia and other souvenir holders are currently engaged in rock art



Figure 14. Some advertisement works carried out by DDCTO in the city of Dire Dawa (by the researcher, 2013).

tourism promotion and using the art as a trade mark in their commodity. Other manufacturing factories in Dire Dawa should also be consulted to contribute their share in the conservation and promotion of this rich cultural heritage.

Code of conducts for rock art tour:

1. Visitors should do not touch the paintings,
2. Keep water away from painted surfaces and other substances on the paintings,
3. Keep fires outside rock art sites,
4. Be careful that your rucksack, backpack, camera bag or clothes are not brush against painted surfaces as this wears away the particles of rock and the paintings,
5. Walk slowly and carefully when you are in a painted rock shelter so that you do not stir up dust,
6. Use of flash and chemical on paintings is strictly forbidden.

Other than the code of conducts, developing rock art conservation and management plan for each site which include a short and long term development schemes; proper cataloging and documentation of the art; policy reputation and directives which follows a holistic approach are another mechanism for developing a sustainable rock art tourism development for the study area.

CONCLUSION

The presence of these rock art sites in the region has a potential economic, socio – cultural, aesthetic and artistic values. It is also a good source of information for scientific inquiry of the prehistoric society through archaeology and anthropology. Simultaneously, the existences of numerous caves, shelters, open airs, and

boulders make the region an ideal place for adventure and Geo tourism. The sites are also suitable for tourists interested in trekking, and Para - gliding. However, most of these rock art sites are facing natural and human made destruction. For such fact, many sites are destroyed and even the surviving ones are at risk.

The increasing tourist flow trend in the region and the availability of rock art sites and other attractions are good opportunities to promote tourism. Promotion of sustainable rock art tourism has a benefit for sustainable socio – economic development of the region. It could also play a significant contribution for effective conservation of the art. Various efforts must be undertaken to utilize this heritage for the benefit of the community. The conservation, management and developmental activities in the region must be in consultation with the local communities. This is because they are the guardian of the heritage sites. Therefore, the most important strategy for development of the site is creating awareness, expanding infrastructural facilities in and around the site and promoting these heritage sites as a tourist destination. In addition, developing sustainable rock art trip itinerary and code of conduct is essential to safeguard the site from natural and human destructive agents.

Generally, rock art sites are the best sites for tourist destination. If they are properly managed by preparing management plans and by opening infrastructures they become additional tourist destinations. These resources can be the best way to alleviate poverty in the region and can generate alternative sources of income for the region's host community and to the country in general.

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CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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