



የኢትዮጵያ ፌዴራላዊ ዲሞክራሲያዊ ሪፐብሊክ
 በባህልና ቱሪዝም ሚኒስቴር
 የቅርስ ጥናትና ጥበቃ ባለሥልጣን
 Federal Democratic Republic of Ethiopia
 Ministry of Culture & Tourism
 Authority for research & Conservation of
 Cultural Heritage



ቁጥር
 Ref. No. 01/A-02/020
 ቀን
 Date 12 8 JAN 2014
 ስ.ቁ 0116 55 50 11
 Tel. No. 0118 50 31 37
 የሜ.ሣ.ቁ.
 P.O.Box 13247
 Fax No.
 ኢ.ሜይል crcch@ethionet.et

Kishore Rao
 Director World Heritage Center
 7, place de Fontenoy
 75352 Paris 07 SP
France

Subject:-RESPONSE TO THE WORLD HERITAGE COMMITTEE DECISION

Dear Kishore,

In accordance with Decision **(37 COM 7B 39)**, I am pleased to submit a progress report to the World Heritage Center on the issues raised by the World Heritage Committee, in the indicative format, for examination of the Committee at its 38th session in 2014. The report is therefore enclosed to this letter.

Ethiopia wishes to reassure the World Heritage Committee that the State Party will continue to implement the World Heritage Convention (1972) to ensure the sustained preservation of the world heritage properties elsewhere.

Should you require any further information, I always remain at your disposal.



Sincerely yours,

**YONAS DESTA
 GENERAL DIRECTOR**



GOVERNMENT OF ETHIOPIA

**STATE PARTY REPORT ON THE STATE OF CONSERVATION OF
THE LOWER VALLEY OF THE OMO (Ethiopia) (C 17)**

**IN RESPONSE TO THE WORLD HERITAGE COMMITTEE DECISION
WHC37 COM 7B.39**

FOR SUBMISSION BY 1 FEBRUARY 2014

Contents

1.1	Paragraph 3.....	4
1.2	Paragraph 4.....	4
1.3	Paragraph 5.....	4
1.4	Paragraph 6.....	4
1.5	Paragraph 7.....	4
1.6	Paragraph 8.....	4
1.7	Paragraph 9.....	4
	Decision: 37 COM 7B.39.....	5
	Executive Summery.....	6
	Responses of the State Party	6
	Paragraph 3.....	6
	Paragraph 4.....	7
	Paragraph 5.....	7
	Paragraph 6.....	8
	Paragraph 7.....	8
	Paragraph 8.....	8
2.	Updates on the state of conservation of the property.....	9
3.	Updates on new construction within the site.....	9
4.	Appendixes.....	9

WHC DECISION

Executive Summary

1. *Response from the State Party to the World Heritage Committee's Decision*

1.1 Paragraph 3 *Concern over the Kuraz Sugar Cane Development Projects, which may have a negative impact on the Outstanding Universal Value (OUV) of the Lower Valley of the Omo;*

1.2 Paragraph 4 *Regrets that the State Party has not replied to the World Heritage Centre's letters regarding its official position and clarification on the projects and their location in relation to the boundaries of the property*

1.3 Paragraph 5 *Provide details on all planned development projects, and documents on the Kuraz Sugar Cane Development Projects, Environmental Impact Assessment (EIA) carried-out in 2011, to the World Heritage Centre.*

1.4 Paragraph 6 *Requests the State Party to carry-out Heritage Impact Assessments (HIAs), in particular for relevant roads and the sugar development projects,*

1.5 Paragraph 7 *Concern over the absence of a management plan, and the lack of clarification of the boundaries and buffer zone for the property;*

1.6 Paragraph 8 *Invites the State Party to carry-out the above as a matter of urgency, and encourages the State Party to request international assistance for this endeavor;*

1.7 Paragraph 9 *Submit to the World Heritage Centre, by **1 February 2014**, a report on the state of conservation of the property, for examination by the World Heritage Committee at its 38th session in 2014.*

2. **Updates on the state of conservation of the property**

3. **Updates on new construction within the site**

4. **Appendixes**

4.1 **Heritage Impact Assessment document**

**The World Heritage Committee Decision in the Thirty-seven session
Phnom Penh, Kingdom of Cambodia 16 June – 27 June, 2013**

Decision: 37 COM 7B.39

The World Heritage Committee,

- 1. Having examined Document WHC-13/37.COM/7B.Add,*
- 2. Recalling Decision **20 COM 7D.64/65**, adopted at its 20th session (Merida, 1996),*
- 3. Expresses its concern over the Kuraz Sugar Cane Development Projects, which may have a negative impact on the Outstanding Universal Value (OUV) of the Lower Valley of the Omo, if located within or near the property;*
- 4. Regrets that the State Party has not replied to the World Heritage Centre's letters regarding its official position and clarification on the projects and their location in relation to the boundaries of the property;*
- 5. Urges the State Party to provide details on all planned development projects, and documents on the Kuraz Sugar Cane Development Projects, including the Environmental Impact Assessment (EIA) carried-out in 2011, to the World Heritage Centre by **1 December 2013** for review by the Advisory Bodies;*
- 6. Requests the State Party to carry-out Heritage Impact Assessments (HIAs), in particular for relevant roads and the sugar development projects, and submit them to the World Heritage Centre for review by the Advisory Bodies before work commences and before any irreversible commitments are made;*
- 7. Also expresses its concern over the absence of a management plan, and the lack of clarification of the boundaries and buffer zone for the property;*
- 8. Invites the State Party to carry-out the above as a matter of urgency, and encourages the State Party to request international assistance for this endeavor;*
- 9. Also requests the State Party to submit to the World Heritage Centre, by **1 February 2014**, a report on the state of conservation of the property, for examination by the World Heritage Committee at its 38th session in 2014.*

Executive Summary

This progress report on the State of Consecration of the Lower Omo Valley World Heritage Site

- Responds to the world Heritage Committee Decision 36 COM 7B.39, made in phnom Phen, kingdom of Cambodia in (2013) by providing a detailed report on the issues raised in the decision
- Provides the Heritage Impact Assessment document

1. Responses of the State Party

This document provides the progress report requested by the World Heritage Committee in **Decision 36 COM 7B.39** and related issues regarding the management of the Lower Valley of the Omo, World Heritage Site, potential threats to the property and issues related to projects under going in the area. The report is made available for examination by the Committee at its 38th session in 2014

Paragraph 3

Concerns over the Kuraz Sugar Cane Development Projects, which may have a negative impact on the Outstanding Universal Value (OUV) of the Lower Valley of the Omo;

The Kuraz Sugar Cane Development Project (here after Kuraz Project) is one of the projects managed under the Ethiopian Sugar Corporation. The Kuraz Project is undertaking in the south Omo district, involving sugar cane plantation, construction of small scale housing units and small scale road constructions. From the inception stage of the Kuraz Project, different tasks to be exercised during the project's life time were being discussed with different government bodies including ARCCH. On its part, ARCCH has been assigning relevant experts to undertake survey works prior to any activity undertaking around the Lower Omo Vallery World Heritage Site. As a result, previous survey reports (HIA), undertaken in the area, indicate that the area inside the world heritage property does not support the proposed sugar cane plantations due to

the acidic nature of the fossil bearing sediments of the property. Therefore the reports have proved that the project does not affect the world heritage property in relation to the sugar cane plantation. The same survey reports demonstrate that if there is heavy ground work around the world heritage property, in connection to the road and the housing units' constructions, intensive survey works will be undertaken by relevant experts in the field to avoid any possible risks of damage.

Paragraph 4

Regrets that the State Party has not replied to the World Heritage Centre's letters regarding its official position and clarification on the projects and their location in relation to the boundaries of the property;

Previous letters from the World Heritage Center were not replied by the State Party due to several uncertainties about the concerns mentioned inside the letters. At the same time, the State Party was engaged in several consultation phases involving appropriate government bodies to explain the sensitive nature of the world heritage property. Therefore the State Party would like to confirm that the discussions held with the relevant stakeholders, in relation to the preservation of the property, have created better understanding, which helps to mitigate any problem that would occur in the property in relation to the activity of the Kuraz Project.

Paragraph 5

Provide details on all planned development projects, and documents on the Kuraz Sugar Cane Development Projects, Environmental Impact Assessment (EIA) carried-out in 2011, to the World Heritage Centre.

The Kuraz Sugar Cane Development Projects has different components. These include sugar Cane plantations, planting factories and development of housing units for workers. There will also be minor road constructions. However all the components of the project are designed to take place outside the world heritage property.

Paragraph 6

Requests the State Party to carry-out Heritage Impact Assessments (HIAs), in particular for relevant roads and the sugar development projects;

In responses to the letters sent by the World Heritage Center, ARCCH had sent an expedition to the Lower Omo Valley to undertake Heritage Impact Assessment and the document is attached to this report for further information (See annex-1).

Paragraph 7

Concern over the absence of a management plan, and the lack of clarification of the boundaries and buffer zone for the property;

Lack of a well defined boundary of the world heritage property and the absence of a management plan for the Lower Omo Valley property is the concern for the State Party as well. Therefore ARCCH has planned to address these problems, boundary delineation and the establishment of a site management for the Lower Omo Valley, through the European Union Development Project, signed between the Ministry of Culture and Tourism and European Commission in Ethiopia in 2013. Therefore the boundary delineation and management plan development tasks are included to be addressed by this Project in 2014/15.

Paragraph 8

Invites the State Party to carry-out the above as a matter of urgency, and encourages the State Party to request international assistance for this endeavor;

As a matter of urgency the State Party wishes international assistance to engage stakeholder consultations on the establishment of the site management plan for the property and to include adjacent localities in the surrounding as part of the property on the basis of serial nomination.

2. Updates on new construction within the site

To maintain the integrity of the Lower Awash Valley World Heritage Property a management arrangements continue to be developed and will be implemented to address potential threatening issues in such a way as to minimize any impact on World Heritage values of the site.

3. Potential restorations, alterations and/or new construction(s) within the protected area (core zone and buffer zone) that might be envisaged;

The development activities around the world heritage property could be potential threat if they are not managed in a way that contributes to enhance the values of the property.

4. Appendixes

Appendix: 1 Heritage Impact Assessment undertaken in the property

The Physical Setting of the Lower Omo Valley World Heritage Site

The Lower Omo river valley, which is located in south west Ethiopia, is one of the well preserved wilderness regions in Africa .The Omo river, which bisects Ethiopia's largest and most inaccessible parks mainly, feeds the valley. The Omo river is an important river of southern Ethiopia. Its Course is entirely contained within the boundaries of Ethiopia, and empties in to Lake Turkana (Rudolf) on the border with Kenya. It is the principal river basin in the country; the part that the Omo basins drainages includes some part of the Western Oromia region (in the upper stream area) and large portion of (Middle & Lower Valley) of the SNNPRS. The Lower Omo region offers a mixture of fertile grasslands, terraced hillsides, and plains of fossil bearing sediments / volcanic tuff /, broad rivers and forests.

The Cultural Setting of the Site

The Lower Valley of the Omo is unlike any other place on Earth has inhabited by different ethnic groups of people in such a small area of land over many millennia. It is believed that it was the cross-roads of a wide assortment of cultures where early humans of many different ethnicities passed as they migrated to and from lands in the surroundings. There are more than 16 different languages spoken (excluding dialects). The entire Omo region is inhabited by ethno-cultural groups pertaining to two important linguistics lines Nilo-Saharan and Afro-Asiatic. The Nilo-Saharan linguistic line includes: Bume, Mursi and Surma while the Afro-Asiatic line is comprised of Karo, Banna, Bashada, Hamar, and Dizi who are Omotic and Dassenech, Erboore, Tsamako who are Eastern Cushitic. However, the main ethnic group in the Lower Omo valley region and its surroundings includes: Konso, Tsemai, Erboore, Hamer, Benna, Dassenech, Karo, Nyangatom, Mursi, Ari, Surma, Muguji and Meeniet (An inventory of Intangible cultural heritage of South Omo People ARCCH, 2009/10).

Geologically of the Lower Omo Valley,

The Omo Group is composed of four formations. These include: The Mursi Formation (4.5 to 4 million years), The Shungura Formation (3.5 to 1 million years), The Usno Formation (3.5 to 1 million years), and The Kibish Formation (possibly 100,000 years old). Among them, the most important is The Shungura Formation which is divided into 12 members (A-L) with over 1500

localities by tuffs widely distributed throughout the area- in Dassenech and Nyangatom woredas (districts). It is found on the western bank of the Omo River between the Kenyan border and the town of Kangaten. It is a single block of sediments deposited between ca. 3.6 Ma (million years ago) and 1 Ma (Boisserie *et al* 2011 in Feibel et al., 1989; Heinzelin, 1983). It is principally characterized by:

- ❖ an unparalleled temporal and spatial continuity, being the only place in the world to have continuously and accurately recorded the environmental changes and faunal evolution that accompanied the appearances of the first stone tools, of the human kind (genus *Homo*), and of the human ancestors who first colonized the world outside Africa (Suwa et al., 1996);
- ❖ the richest fossil record collected in eastern Africa, with more than 52,000 specimens collected by the IORE and preserved in the ARCCH collections² – i.e. more than the Hadar and Middle Awash collections put together (Alemseged, 1998; Bobe et al., 2002; Coppens et al., 1976);
- ❖ among the world's oldest evidences for tool making (Howell et al., 1987; Delagnes et al., 2011);
- ❖ About 250 specimens of human ancestors, including the holotype of *Australopithecus aethiopicus* (Howell & Coppens, 1976).

The Usno Formation is situated 15 km north of Kangaten, also on the western bank of the Omo, and displays deposits contemporaneous to those of the lower part of the Shungura Formation (Heinzelin, 1983, ca. 3.2 Ma). In the 1960s-1970s, it delivered an abundant fossil fauna documenting human ancestor evolution as well (Boisserie et al., 2011).

The Mursi Formation (Yellow Sands) is located further north, on the eastern bank of the Omo. It is the oldest fossil-bearing deposit known in south-western Ethiopia, dated to ca. 4 Ma and older, and has an important potential for human ancestor findings (Butzer, 1976; Feibel et al., 1989). Deposits of this age are rare in Ethiopia and elsewhere in Africa. A research permit on this formation and on the adjacent Nkalabong Formation is currently attributed to Dr. Michelle Drapeau (Boisserie et al., 2011).

The core of the Kibish Formation (Members I to III) is found on both sides of the Omo, and is renowned for its important archeological and faunal record between 200 ka and the late Pleistocene, including what may actually be the oldest representatives of our species, *Homo sapiens* (Boisserie et al 2011 in Assefa et al., 2008; Brown & Fuller, 2008; Day, 1969; Fleagle et al., 2008; Shea, 2008). It is also significant in terms of its record of recent environmental evolution. The younger part of the Kibish Formation (Member IV) covers a huge portion of the western Lower Omo Valley, from north of Mui in the Omo National Park to surroundings of the Shungura Formation, notably between this and the Nakua (also called Kuraz or Korath) Mountains. It is of Holocene age and its heritage content is improperly known. In places, it may bear important information on the earliest developments of agriculture/pastoralism in Ethiopia. The Kibish Formation is even more sensitive than the other formations to human activities, because a large proportion of its sediments are relatively light density and poorly compacted. The most recent research project on the Kibish Formation was performed by Dr. John Fleagle, who recently reapplied to ARCCH for resuming this research (Boisserie *et al* 201).

Overview of the Paleontological and Archeological sites of the Lower Omo Valley

The sites of the Lower Omo Valley are a worldwide reference for scientists and people interested in human origins for three reasons: they are a major source of information on critical steps of human and environmental evolution elsewhere poorly documented; the Omo collections provide a major comparative sample on Plio-Pleistocene faunas for all projects studying other sites in Africa and beyond; in the 1960s-1970s, the work on these sites resulted in methodological and conceptual developments that shaped the current landscape of human evolution sciences (Boisserie et al., 2011). As such, these sites equally contributed with those found in the Afar Region to set Ethiopia as one of the most important – if not the most important – place in the world for understanding human evolution.



Photo showing partial View of the Kibish formation

In 1980, the Lower Omo Valley was part of the third group of properties to include the UNESCO World Heritage List, on the basis of its paleontological and archeological

resources mainly as known through the work of the International Omo Research Expedition (IORE, 1967-1976, involving scientists from Ethiopia, France, Kenya, and USA). These resources are found in four geological formation areas (Shungura, Mursi, Usno and Kibish) (Heinzelin, 1983) being essentially located well south to the Omo National Park, in the Dassanetch woreda (Omo Rate) and the Nyangatom woreda (Kangaten).

Paleontological research in Ethiopia began in the Lower Omo Valley in 1902, when the transcontinental expedition from Red Sea to Atlantic Ocean led by Bourg de Bozas crossed the Omo River and discovered fossil remains of large vertebrates in the Omo Group sediments of the western bank of the River. The pioneer work conducted in the Lower Omo Valley (Ethiopia), however, by C. Arambourg in 1933 (Arambourg , 1943, 1947), and later on by the International Omo Research Expedition (IORE) from 1967 to 1976 (initially co-directed by F.C. Howell, C.Arambourg, Y. Coppens and from 1970 on by R.E.F. Leakey, C. Howell and Y.Coppens). These have led to the establishment of one of the best documented bio-environmental and Chronostratigraphic pilo-Pleistocene record for the study of human and faunal evolution (Coppens, 1975; Coppens and, 1976; Howell and Coppens, 1976; de Heinzelin Ed.,1983; Howell et al., 1987; Feibel et al. 1989).

Subsequent to the first discoveries made by J. Chavallion in 1969 at Omo 71(Bonnefille *et al*, 1970; Chavaillon, 1970), the archaeological research developed intensively during the later part of the project (between 1970 and 1976). During their archaeological investigations conducted by J. Chavaillon for the French team and H.V. Merrick for the American team focused on the excavation of a series of archaeological occurrences. These investigations aimed at demonstrating the chronological position of these occurrences within the formation, their anthropogenic origin and the main technical features of the recovered lithic series. These small series of artifacts placed the first appearance of the first human tools prior to 2 million years ago (Ma), some hundreds of thousand years before the previous oldest known archaeological occurrences, from Olduvai Bed I archaeological site (Leakey, 1971). Though the Omo lithic record does not form anymore the oldest lithic industry since the discovery of artifacts dated to

about 2.6 Ma in the Hadar Formation in the late 1970s (Roche and Tiercelin, 1977), it still constitutes an exceptional cultural heritage for assessing Early Pleistocene hominid behaviors.

The research which has been conducted in Lower Omo Valley has been continued yet. The Potential of the Shungura Formation to bring new information triggered the creation of a new paleo-anthropological team which is called the Omo Group Research Expedition (OGRE). This group contains scientists originating from Ethiopia, France, and the USA. It has been working in the field since 2006, led by a French Paleontologist, Boisserie, J.-R.

The Significance of the Lower Omo Valley Paleo-anthropological/Archaeological Site

As indicated above the Lower Omo Valley has four formations. The formations are over 1000 meters thick, well exposed, fossiliferous and so well dated by standard scale. The Lower Omo succession is unique for its length and continuity of sequence, the amount of fossils collected and the range of dates obtained. As several hominids are present in these strata as well as artifacts, it is also interesting to investigate how the environment changed during the period when the hominids were evolving (Coppens, 1975; Coppens and Howell, 1976; Howell and Coppens, 1976, de Heinzelin Ed. 1983; Howell et al, 1987, Feibel *et al*, 1988; Boisserie, 2008, 2010).

In general, these formations are a major source of scientific knowledge contributing to the international leadership of Ethiopia in terms of human evolution discoveries. They are also emblematic of the country commitment to protect its heritage, as they largely helped building a positive image in foreign countries, where the names Omo, Lucy, Ardi, and others are widely known. All together, they constitute a unique tool for:

- ❖ reconstructing the deep history of African biodiversity, including our ancestors;
- ❖ understanding how this history was impacted by environmental changes;
- ❖ calibrating climate evolution models aiming at reconstructing past climate changes and forecasting future ones;
- ❖ training future generations of geologists, paleontologists, and archeologists;
- ❖ possibly developing a tourism industry based on paleoanthropological resources, contributing to the economic growth of the country.

Identified Current Interventions and Expected Effects on the Lower Omo Valley Cultural Heritage Site

In recent times several development projects have been implemented in the Lower Omo Valley. Among them, the Ethiopian Sugar Development Corporation Project, which is called Kuraz Sugar project, has planned to undertake sugarcane plantation in the tentatively delineated Lower Omo Valley World Heritage Site. The implementation this sugar cane plantations on more than 100 km², involves extensive irrigation and settlement of thousands of workers. This project will have an intervention on the three fossil bearing sites. This project touches the northern most portion of the Shungura Formation, the totality of the Usno formation and most of the Kibish formation on the western bank of the Omo (Boisserie *et al*, 2011 and personal observations)

During the implementation of the project it is expected that infrastructure building and trampling will destroy fossil content, and direct removal by settlers. Depending on location, trampling of fossils and archeological localities by workers and vehicles on wide areas surrounding road location and road building material careers – according to the type of sediments, heavy loaded trucks may likely damage embedded fossils at depths of several meters. Also depending on location, significant paleoanthropological resources can be destroyed by deep excavations at road location and road building material careers. In addition, direct removal of fossils and artefacts by workers may occur. In general these are the expected threats that will appear on the Lower Omo Valley World Heritage Site Posed by the Sugar cane Plantation Project if it will be held in the core area of the formation:

- ❖ Surface fossils and artifacts are extremely sensible to mechanical actions (displacement and abrasion by water and wind, trampling by cattle, humans, and vehicles; breaking by plant roots). Even when still embedded in the sediments, they can be altered by vehicle trampling;
- ❖ Current landscapes result from a delicate equilibrium between topography and water flows generated by seasonal rains. Changes in routes and quantities of these flows can destroy this equilibrium and may lead to rapid alterations of the landscapes;

- ❖ Given the time involved in making paleontological archaeological resources accessible to humans, localities extensively exploited in the 1960s- 1970s will never again provide the same yield of scientific data, unless they are left alone for many years;
- ❖ The information borne by each fossil and each artifact tightly depends on its context (Precise location, age, type of embedding rocks, position in these rocks, spatially associated fossils and artifacts, etc.). Fossils and artifacts removed without any record of this context irremediably lose most of the scientific information they carried;
- ❖ The outcrops and their scientific contents are therefore extremely sensitive to human activities. Most past and current human activities have had insignificant impacts (pastoralist activities, involving few people and no infrastructures, never interacted much with the outcrops, largely devoid of grasses and of other resources).

Agricultural Hazards to the Project related to the geological context of the sites

Based on previous studies on these sites, the development of agriculture constitutes the most urgent threat for the conservation of the paleontological and archaeological resources in the Lower Omo Valley. In turn, the nature of the affected outcrops is actually threatening the proper development of these agricultural activities.

- ❖ Whenever topography is particularly chaotic, such as in the northern part of the Shungura Formation, the surface of land suitable for cultivation is considerably reduced by important slopes.
- ❖ Fossil-bearing outcrops and the recent sediments covering them contain significant amounts of swelling clays, or smectites (Heinzelin, 1983). In irrigation context, these clays enter cycles of expansion (irrigation phase) and shrinkage (evaporation phase). These cycles result in altering the elevation of ground on centimetric to decimetric scales, in turn causing extensive damage to crops and to infrastructures (Boisserie et al., 2011).
- ❖ Partial parts of the usno and Kibish fossil bearing formation are highly rugged and degraded topography which will not be convenient for cultivation.



Photo showing the rugged and the degraded landscape of the Usno formation which will be not convenient for cultivation

Conservation and Preservation Recommendations

Ethiopia is trying to benefit from existing resources and to generate foreign earnings for its development. Some of these resources can be developed in many different parts of the country, as it is the case for sugar plantation which will be implemented in the Lower Omo Valley paleontological and archaeological World Heritage Site. To identify the impacts this development project on Lower Omo Valley World Heritage Site, brief Heritage Impact Assessment (HIA) survey were conducted on the area. This Heritage Impact Assessment (HIA) is a study to evaluate the impact of the proposed development or site alteration will have on the cultural heritage resource(s) and to recommend an overall approach to the conservation of the resource(s). This study will be based on understanding of the significance and heritage attributes of the cultural heritage resource(s), identify any impact of the proposed development or site alteration will have on the resource(s), consider mitigation options, and recommend a

conservation strategy that best conserves the resource(s) within the context of the proposed development or site alteration.

Several steps are proposed to protect the Lower Omo valley sites. Most important on a scientific point of view, the Shungura Formation would require in this respect a full protection and the prevention of all activities threatening significant parts of its outcrops. Agriculture in the buffer zone should be possible, but only if it is not associated with heavy infrastructure building and settlements. Road building should be possible through the site, but only if confined to fossil-poor areas directed and monitored by archaeologists.

The tentatively delineated core of the Kibish Formation and Usno formation require the same kind of protection. Agricultural activities and settlements should be protected in the core zone of both formations.

It is also necessary to assess some of the nearby fossil bearing sediments which have a relatively lower density of heritage content than the others through surveys in order to establish plan for rescue operation or other conservation actions if feasible e.g. Kibish formation (Member Iv). Each significant locality in these Holocene deposits would likely have a quite limited extension (rarely more than a few hundreds of m²), and if rescue operation cannot be performed right away, it would be easy to protect them from destruction without interfering much with the concerned development project. Thus, to avoid negative impacts on some localities found outside the tentatively delineated core and buffer area of the three formations, the Corporation should consult and be guided by ARCCH and Omo Paleontological Project experts.

Since our country has ratified the World Heritage Convention, it has to take measure pursuant to article 97 of the Operational Guideline which states that respective countries should protect and preserve the cultural heritages of the world found in their country. Since the Authority for Research and Conservation of Cultural Heritage is the Federal Government entity that represents the convention, it shoulders the highest responsibility to protect the world heritages found in the country according to the Operational Guidelines of the convention article 117. Hence, in consideration of the World Heritage Convention article 172 and the negative impacts of the project mentioned above, the ARCCH urges the Ethiopian Sugar Development Corporation to

undertake its activities outside the pocket areas tentatively demarcated as Lower Omo Valley World Heritage Site (**See the map attached with this report by the Omo Group Research Expedition in 2012**).

Conclusions

To sum, so far in Lower Omo Paleontological Project Area in 1600 localities, 53,000 fossil vertebrates of 210 taxa, 250 hominid fossils (5-6 taxa) and associated with 2-3 million years old stone tools have been discovered and documented. The Lower Omo Prehistoric Site is still providing hominid, fauna and flora fossils associated with stone artifacts which have great importance to understand human biological and cultural evolution as well as the Paleo-environment of the time (Boisserie *et al* 2011). Thus the site's scientific and educational values are still very high. If the site is properly conserved and managed, the paleo-tourism potential of the site is also very immense, which in turn will benefit socially and economically the local people in particular and the country in general. Considering all these, therefore, the site should be appropriately delineated before any intervention should be take place on the three supposed formations. In addition to this, specific conservation plans should be prepared in areas where rescue or preventive archaeological work will be conducted for the facilitation of the project (like roads, etc).

References

- Arambourg C (1943) contribution a l'etude geologique et paleontologique du bassin du lac Rodolphe et de la basse vallae de l'Omo. Premiere partie: geologie. In: Arambourg C(ed) Mission Scientifique de l'Omo,1932-1933 Tome 1: geologie- anthropologie. Edition du Museun, Paris
- Arambourg C, Coppens Y (1967) Sur la decouverte, dans le Pleistocene interieur de vallee de l' Omo (Ethiopie), d'une mandibuls d' Australopithecien. Comptes Rendus de l'Academie des Sciences 265:589-590
- Boisserie et al. J-R, C.R. Palevol 7 (2008). New Paleontological Research in the Plio-Pleistocene Omo Group, Lower Omo Valley, SNNPR, Ethiopia C2008 Academie des sciences. Published by Elsevier Masson SAS
- Boisserie et al. J-R (2010) Reconstructing the African background to human expansions in Eurasia: New Research in the Shungura Formation, Ethiopia, Quaternary International 223-224 426-428
- Boisserie et al. 2011. Omo Group Research Expedition. A report submitted to the Authority for Research anmd Conservation of Cultural Heritage (ARCCH). Addis Ababa.
- Boisserie et al. 2012. Omo Group Research Expedition. A report submitted to the Authority for Research and Conservation of Cultural Heritage (ARCCH). Addis Ababa.
- Bonnefille R, Chavaillon J, Coppens Y (1970) Resultats de la Nouvelte Mission de l' Omo (3⁰ Campagne 1969). Competes Rendus de l' academie des Sciences 270 : 924-927.
- Chavaillon J- (1976) Evidence for the Technical Practices of Early Pleistocene Hominids Shungura Formations, Lower Omo Valley, Ethiopia. In: Coppens Y, Howell FC, Isaac JL, Leakey REF Eds. Earliest Man and Environments in the Lake Rudolf Basin. Chicago Press, Chicago, pp.565-573.
- Chavaillon J, Koeniguer J C. (1970) Decouverte d'un fragment de liane dans le sol oldowayen de Melka Kontoure (Ethiopie). Cr Acad. Sci., Paris, D,. 270. 1969-72. Caesalpinioxylon fossil

wood anatomy. palaeo, Leguminosae - General, fossil, Wood anatomy. Comptes Rendus de l'Académie des Sciences de Paris, Paris.

- Coopens Y, (1994) Eastside Story: The Origin of humankind. *Scientific American* 270, 5: 88-95
- Coopens Y, Chavaillon J, Beden M, (1973) Resultats de la Nouvelle Mission de l' Omo (1972). Decouverte de restes d' Hominides et d' une Industrie sur eclates. *Comptes Rendus de l' Academie des Sciences* 276: 161-164
- Coppens Y, Howell FC, (1976) Mammalian Faunas of the Omo Group: Distributional and Biostratigraphic Aspects. In : Coopens Y, Howell FC, Isaac JL, Leakey REF (Eds.) *Earliest Man and Environments in the Lake Rudolf Basin*. Chicago Press, Chicago, Pp 177-192.
- Febel CS, Brown FH, McDougall I, (1989) Stratigraphic Context of Fossil hominids From the Omo Group Deposits: Northern Turkana Basin, Kenya and Ethiopia. *American Journal of Physical Anthropology* 78 (4:595-622).
- Heinzelin JD, (1983) The Omo Group. *Archives of the International Omo Research Expedition*. Musee Royal de l' Afrique Centrale, Tervuren.
- Howell FC, Coppens Y, (1976) An Overview of Hominidae from the Omo Succession, Ethiopia. In Coppens Y, Howell FC, Isaac JL, Leakey REF, (eds.) *Earliest Man and Environments in the Lake Rudolf Basin*. Chicago Press, Chicago, PP 522-532.
- Howell FC, Haesaerts P, Heinzelin JD (1987) Depositional Environments, Archaeological Occurrences and hominids from Members E and F of the Shungura Formation (Omo Basin, Ethiopia). *Journals of Human Evolution* 16:665-700.
- Leakey MG, Spoor F, Brown FH, Gathogo PN, Klarie C, Leakey LN, McDougall I (2001) New hominin genus from eastern Africa shows diverse middle Pliocene lineages. *Nature* 410: 433-440

Merrick HV, Merrick JPS (1976) Archaeological occurrences of earlier Pleistocene age of the Shungura Formation. In: Coppens Y, Howell FC, Isaac GL, Leakey REF (eds) Earliest Man and Environments in the Lake Rudolf Basin. Chicago Press, Chicago, pp 574- 584

Roche H, & Tiercelin JJ (1977) Découverte d'une industrie lithique ancienne in situ dans la formation d'Hadar, Afar Central, Éthiopie . Comptes Rendus de l'Académie des Sciences de Paris, Paris.