United Nations
Educational, Scientific and
Cultural Organization

Organisation
des Nations Unies
pour l'éducation,
la science et la culture

World Heritage **36 COM**
Patrimoine mondial

Distribution limited / limitée **Paris, 11 June/11 juin 2012**
Original: English

**UNITED NATIONS EDUCATIONAL,
SCIENTIFIC AND CULTURAL ORGANIZATION**

**ORGANISATION DES NATIONS UNIES
POUR L'EDUCATION, LA SCIENCE ET LA CULTURE**

CONVENTION CONCERNING THE PROTECTION OF THE WORLD CULTURAL AND NATURAL HERITAGE

CONVENTION CONCERNANT LA PROTECTION DU PATRIMOINE MONDIAL, CULTUREL ET NATUREL

WORLD HERITAGE COMMITTEE / COMITE DU PATRIMOINE MONDIAL

Thirty-sixth session / Trente-sixième session

**Saint Petersburg, Russian Federation / Saint Pétersbourg, Fédération de Russie
24 June – 6 July 2012 / 24 juin – 6 juillet 2012**

Item 7 of the Provisional Agenda: State of conservation of properties inscribed on the World Heritage List and/or on the List of World Heritage in Danger.

Point 7 de l'Ordre du jour provisoire: Etat de conservation de biens inscrits sur la Liste du patrimoine mondial et/ou sur la Liste du patrimoine mondial en péril

MISSION REPORT / RAPPORT DE MISSION

Lake Turkana National Parks (Kenya) (N801bis)/ Parcs nationaux du Lac Turkana (Kenya) (N 801bis)

14-22 March 2012/14-22 mars 2012

This mission report should be read in conjunction with Document:
Ce rapport de mission doit être lu conjointement avec le document suivant:

WHC 12/36. COM/7B.Add

UNESCO World Heritage Center - IUCN

MISSION REPORT
Reactive Monitoring Mission to Lake Turkana National Parks (Kenya)
14 – 22 March 2012

South Island National Park (Photo Guy Debonnet)

Guy Debonnet (UNESCO World Heritage Centre)

Goran Gugić (IUCN expert)

May 2012

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

The mission team would like to thank the Government of Kenya for its kind invitation, hospitality and assistance throughout the duration of the mission. The team is grateful to the Permanent Secretary, Ministry of Natural Resources and Tourism, and the General Director of National Museums of Kenya and the Director of Kenya Wildlife Service and their staff, for their support throughout the mission. The team would like to thank in particular Dr. Hassan Wario of National Museums of Kenya and Dr. James Njogu of Kenya Wildlife Service, who organized the mission and accompanied the mission team throughout. Special thanks also to field staff of the Kobi Fora field station and of Sibiloi National Park, who worked tirelessly to make the field mission a success. The mission would also like to thank Dr Sean Avery, who took the time to present and discuss with the mission team the findings of the assessment of the hydrological impacts of the Omo Basin on Lake Turkana water levels and fisheries he conducted for the African Development Bank and shared his knowledge of the issues with the mission team.

EXECUTIVE SUMMARY AND RECOMMENDATIONS

The Lake Turkana National Parks World Heritage site is constituted of Sibiloi National Park, the South Island and the Central Island National Parks, covering a total area of 161,485 hectares located within the Lake Turkana basin whose total surface area is 7 million ha. The property was inscribed on the World Heritage List in 1997 as Sibiloi / Central Island National Parks on the basis of natural criteria (viii) and (x).

At its 35th session, the World Heritage Committee requested the States Parties of Ethiopia and Kenya to invite a joint World Heritage Centre / IUCN reactive monitoring mission to review the impacts of the Gibe III dam on the Outstanding Universal Value (OUV) of the property. At the invitation of the Kenyan authorities a joint World Heritage Centre/IUCN monitoring mission was undertaken from 14 to 22 March 2012, which visited the property had discussions with various stakeholders and the Kenyan authorities, including a meeting with Prime Minister. The mission only visited Kenya and at the time of preparation of this report, no invitation has been received from the State Party of Ethiopia.

The mission looked at the following key conservation issues:

Impact of the GIBE III dam and related issues

The mission noted that the EIA submitted by Ethiopia does not assess any impacts beyond the Ethiopian territory and did not consider possible impacts on Lake Turkana. The documented public consultation process also did not include affected populations in Kenya. The mission further notes that the EIA only considers the impacts of the dam as a standalone project, and does not include any reference to other related planned or on-going projects, such as downstream agricultural development projects which will use the water for irrigation. These irrigation projects are made possible because the dam will ensure a steady and constant flow of water in the Omo River, compared to the natural seasonal variation pattern currently in place. The mission notes that while a report of the State Party of Ethiopia asserts that irrigation development is not part of the Gibe III project, a sugar cane development is already being implemented, with infrastructure including irrigation canals currently under construction. Two additional dams are also already planned downstream of the Gibe III dam. At the time of preparation of this report, the official website of the Ethiopian electricity cooperation reports that construction of Gibe III is more than 50% completed.

In preparation of the mission, IUCN commissioned an independent review of the potential hydrological impacts of the proposed Gibe III dam on the Outstanding Universal Value of Lake Turkana National Parks, prepared by Hydro-ecology Consulting Ltd, which looked at the different documents and studies currently available. Based on this review and its own review of the Environmental Impact Assessments submitted by the State Party of Ethiopia as well as other assessments which have been done, the mission believes that the potential cumulative impacts on Lake Turkana of the Gibe III dam and the other related developments would be significant:

- Modeling shows that over the expected three years period of filling of the GIBE III reservoir lake water levels will be reduced significantly from 1.65 to 4 m above natural fluctuation levels. After filling is complete and if no water would be extracted from the Omo river downstream of the dam, normal river flow volumes would return to the lake, but it could take 12 years for the lake to return to its equilibrium level. Thus the impact of filling may last 15 years in total. The drop in water levels will move the shoreline of the lake significantly, particularly in the northern part of the lake where 2 components of the property are located

(estimated at 2-3 km minimum at a drop of 1.65 m). This significant drop in lake levels could result in increased salinity and in likely impacts on wildlife which depends on the riparian flood plains and wetland habitats along the lake's shore for food and breeding as well as on fish stocks as a result of the drying out of major fish spawning areas, such as Ferguson's Gulf and the delta of the Omo River).

- The current seasonal nature of inflows from the Omo River means that Lake Turkana water level naturally rises and falls. The dam will result in a loss of this seasonality in water inflow into the lake and is predicted to dampen the magnitude of this variation significantly (from 1.20 m down to 0.80 m) following dam construction. This constitutes a major change to both the riparian and lake ecosystems and the Omo River delta and is predicted to have important impact on fish stocks and wildlife species which depend on the floodplains of the Omo River and the wetlands along the lake's shore.
- The drop in lake water levels will likely be long term due to the expected fall of seasonal oscillations mentioned above and the cumulative impact of irrigation projects on the Omo River downstream of the dam. As mentioned above, a sugarcane development is already under construction and there are plans to convert 278,000 ha of land along the river to sugar plantations and other agricultural developments using irrigation. The African Development Bank study cites the Omo-Gibe basin master plan in which irrigation developments by 2024 would use 16% of the basin's water and calculates this would lead to a reduction in lake level of 8.4 m. This is a significant hydrological change to the lake.
- Gibe III is part of a system of dams which will impact the water inflow into Lake Turkana: Gibe I and Gibe II dams are already in operation upstream of Gibe III, although Gibe II is under repair due to a tunnel collapse. A dam also exists on the Turkwel River, which also flows into Lake Turkana. On the Omo River, Gibe IV and V are also planned, but few details of their design and operation are available. Simulations show that the cumulative impact of increasing the surface area of all the reservoirs will reduce the volume because of increased evaporation. Each reservoir will need to be filled, so reduced flow inputs to Lake Turkana and further reduction in seasonal variations in flow might continue for a much longer period than 15 years.

The mission therefore concluded based on the information available through the mission in Kenya that the potential and ascertained cumulative impacts of the GIBE III dam and related developments are highly likely to impact the Outstanding Universal Value of the property.

During the meeting with the Prime Minister, the mission was informed that the Government of Ethiopia had assured the Government of Kenya that the Gibe III dam would not have a long term impact on the water level of Lake Turkana, but that they had not been informed about the related irrigation projects and other developments. The Kenya National Environment Management Authority (NEMA) also informed the mission that they had never received a copy of the Gibe III EIA and that they were not aware of any environmental impact assessment which was done to assess the downstream impacts of the dam in Kenya, including on Lake Turkana. The mission also notes the very serious negative impacts that the dam and related projects are likely to have on the livelihoods of local communities living around Lake Turkana.

Oil exploration

The mission was informed that several oil exploration blocks have been attributed which cover Lake Turkana, including some parts of the property. The mission was further informed that the company to whom these blocks have been attributed, Tullow Oil, received the authorisation for oil exploration activities in all these blocks based on an EIA, which has not been submitted to the World Heritage Centre. The mission was

provided with a copy of the exploration licence for one of the blocks which overlaps with SNP and noted that the licence includes a provision that the company must collaborate with the management authority of SNP, Kenya Wildlife Service (KWS), to ensure the protection of the World Heritage property. The mission was further informed that neither KWS nor National Museums of Kenya (NMK), which is in charge of managing the fossils sites in the property, had been informed before the licence was attributed.

Representatives of Tullow Oil clarified to the mission team that for the moment only aerial seismic surveys have been undertaken and that seismic operations on the ground are currently planned and starting on the western shore only and the lake itself and therefore avoid the property. They also stated that further ground surveys on the eastern shore, where SNP is located, may not be necessary.

Impacts of the larger development vision for Northern Kenya

The mission notes that as part of its 2030 development vision, the government of Kenya in cooperation with of the governments of Ethiopia, and South Sudan is planning a larger development which includes the Lamu Port Initiative, the planned Lamu Port Sudan Ethiopia Transport Corridor (LAPSET) and related developments (roads, railway, pipeline, power lines, wind farms, resorts, etc.). The mission considers that these projects will cause major changes in northern Kenya, and that the cumulative impacts could affect the property. The mission recommends that a Strategic Environmental Assessment (SEA) is undertaken which takes into account Lake Turkana and other potentially affected World Heritage properties.

Wildlife populations and pressure from poaching and livestock grazing

While the mission had no access to data on wildlife populations, it noted from observations during the field visit that wildlife populations seem to be impoverished and concentrated in the most secure areas of the property. This indicates also that poaching pressure is an important threat to the property. Certain flagship species such as reticulated giraffe and Grevy's zebra are reported to have disappeared from the property. The mission further noted fishing activities within the borders of the World Heritage property.

The mission was informed that at the time of creating the park, local pastoralists were guaranteed grazing and watering rights in the case of drought. The mission notes that grazing is currently permanently affecting the entire northern part of the park, resulting in overgrazing, trampling and an increase in shrub vegetation.

The mission concluded that livestock grazing, poaching and fishing activities are important management issues that need to be urgently addressed and need to be reflected in the new management plan. Consideration should also be given to the reintroduction of species which have disappeared, such as the reticulated giraffe and the Grevy's zebra.

Management issues

The mission acknowledges the challenges of managing the property due to its remoteness. The mission emphasizes the importance of involving local stakeholders, particularly pastoralists and fishermen and notes that NMK's knowledge regarding the cultural heritage of pastoralist communities. It considers that an increase in institutional cooperation between NMK and KWS would be important not only to address the many practical challenges, but also to ensure better protection of both fossil sites and wildlife and to address conservation issues and improve cooperation with local communities. The mission encourages KWS to ensure a permanent presence both in SINP, as well as in the northern part of SNP.

The mission was informed that a new management plan is under preparation and considers this an excellent opportunity to develop strategies to address main threats and management issues of the property. They note that it is important that the management plan is developed by the two management agencies KWS and NMK and addresses all three components of the property.

The mission concludes that the potential and ascertained cumulative impacts of the GIBE III dam and related developments are highly likely to impact the Outstanding Universal Value of the property and therefore considers that the property should be inscribed on the List of World Heritage in Danger, in accordance with paragraph 180 (b) of the Operational Guidelines.

The mission considers that the State Parties of Kenya and Ethiopia should urgently address together the question of the impacts on the Property of the Gibe III dam and related developments, and that a Strategic Environmental Assessment (SEA) should be conducted urgently to assess cumulative impacts of all developments impacting on the Omo river basin, Lake Turkana and the World Heritage site in order to identify appropriate corrective measures to ensure that the water level in Lake Turkana as well as a level of seasonal variation will be maintained which is sufficient to maintain the Outstanding Universal Value of the Property.

The mission further recalls the position of the World Heritage Committee that oil exploration is not in accordance with the World Heritage status and considers that the State Party of Kenya should urgently clarify the provision of the EIA licence on the protection of the World Heritage property, to ensure that no exploration can take place within the property, including the lake, when it would come to oil exploitation. They recommend that Tullow Oil subscribes to the no-go commitment already supported by ICMM and Shell.

The mission notes the significant impacts of poaching, fishing and livestock grazing on the property and considers that these issues that need to be addressed urgently and need to be reflected in the new management plan. They recommend that the following measures are taken to address these issues:

a) Conduct a detailed census of key wildlife species to establish their status and develop a baseline to monitor their recovery;

b) Strengthen the efficiency of law enforcement and surveillance based on the results of the MIST monitoring system which is being introduced in the property;

c) Establish permanent presence of Kenya Wildlife Service staff in the northern part of Sibiloi National Park as well as on Central and South Island National Parks;

d) Increase the rotation period for the Biodiversity Officer and the Community Warden to at least three years, given the vital importance of these posts in building long-term sustainable relations with local communities and in ensuring systematic monitoring within the property;

e) Develop in close consultation with representatives of the local pastoralist communities a strategy to diminish grazing pressure in the property, including by identifying grazing areas outside the property and provide them with access to water; and

f) Consider with the reintroduction of the Reticulated Giraffe and the use of Giraffe and Nile Crocodile as flagship species in the communication process with local communities.

The mission also requests Kenya Wildlife Service and National Museums of Kenya to ensure that the new management plan addresses all 3 components of the property and covers both the biodiversity and paleontological values in accordance to the Convention, and to submit the draft management plan to the World Heritage Centre for review.

The mission further recommends that a reflection is begun on re-designing the property, to include a larger portion of the lake as well as important fossil sites currently outside the property and to consider re-nominating the property under cultural criteria, as an important site for human evolution.

ACRONYMS

BR	Biosphere Reserve
CINP	Central Island National Park
DRSRS	Department of Aerial Surveys and Remote Sensing
EEPCO	Ethiopian Electric Power Cooperation
EIA	Environmental Impact Assessment
EIA/EA	Environmental Impact Assessment and Audit Regulations
EIB	European Investment Bank
EMCA	Environmental Management and Coordination Act
EMU	Environment Management Unit
ESIA	Environmental and Social Impact Assessment
EWCA	Ethiopian Wildlife Conservation Authority
ICBC	Industrial and Commercial Bank of China
ICOMOS	International Council on Monuments and Sites
ICMM	International Council on Mining and Metals
IUCN	International Union for Conservation of Nature
KWS	Kenya Wildlife Service
LAPSET	Lamu Port-Southern Sudan-Ethiopia Transport Project
MAB	UNESCO Program “Man and Biosphere”
MP	Management Plan
NEMA	National Environment Management Authority
NBI	Nile Basin Initiative
NBSF	Nile Basin Sustainability Framework
Nile-COM	Nile Basin Council of Ministers of Water
Nile-SEC	Secretariat of the Nile Basin Initiative
NMK	National Museums of Kenya
OUV	Outstanding Universal Value
SEA	Strategic Environmental Assessment
SINP	South Island National Park
SNP	Sibiloi National Park
SOUV	Statement of Outstanding Universal Value
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WHC	UNESCO World Heritage Centre
WHS	World Heritage Site

1 BACKGROUND TO THE MISSION

Lake Turkana National Parks are constituted of Sibiloi National Park (SNP), South Island National Park (SINP) and Central Island National Park (CINP), covering a total area of 161,485 hectares located within the Lake Turkana basin.

Figure 1: Location of Lake Turkana and the three components of the World Heritage Site (source: www.africannaturalheritage.org)

The property was inscribed on the World Heritage List in 1997 as Sibiloi / Central Island National Parks on the basis of natural criteria (viii) and (x) for is geology and fossil record from the Pliocene and Holocene periods as well as presence of recent geological process represented by volcanic erosional and sedimentary land forms, its importance in terms of biodiversity, based on its unique and diverse habitats resulting from ecological changes over time inhabited by diverse fauna with a unique desert lake ecosystem, an abundant birdlife and one of Africa's most important breeding areas for the Nile crocodile.

In its evaluation, IUCN noted that wildlife populations had been decreasing, that during the dry season many thousands of domestic stock were grazing in the park displacing the already low wildlife populations, but that grazing did not affect the portion of the park where the fossil deposits were located. IUCN recommended encouraging the Government of Kenya to implement a project which would provide a stronger management structure and alternative water and grazing opportunities outside the park boundaries for local pastoralists as well as the completion of the management plan.

In 2001, the Committee approved an extension of property, including an additional 3900 ha of South Island National Park and the renaming of the site **Lake Turkana National Parks**. The total size of the site increased from 157,585ha to 161,485ha. Similar to Sibiloi/Central Island, South Island National Park is a breeding ground for crocodile, hippopotamus and a range of venomous snakes and one of Kenya's

Important Bird Areas (IBA) as defined by BirdLife International as a key stopover point for palearctic migrant waterbirds. In the proposed statement of significance it was stated that the Central and South Islands are volcanic islands inhabited by large congregations of the Greater Flamingo and the Nile crocodile (estimated at 14,000). The nomination also notes the importance of the lake in terms of fish biodiversity waters surrounding the Park support 47 species of fish, 7 of which are endemic to the lake. With the nomination file the State party provided also a Provisional Integrated Management Plan 2001 – 2005 and the Committee strongly encouraged the Kenyan authorities to complete the management plan for the three parks as an integrated unit.

It is important to note that originally the property was also nominated under cultural criteria for its „well documented record of human physical and cultural evolution of the last 4 million years", without specifying the proposed criteria. At the time of inscription in 1997, the Committee noted that a comparative study of fossil hominid sites by ICOMOS had been completed and giving highest importance to Koobi Fora. The Committee, however, decided to defer the nomination under cultural criteria to allow the State Party to clearly delineate the cultural part of this nomination, which does not concern the same area as the natural part. The 2001 extension request also proposed inscription of the site under cultural heritage and specified cultural criteria (iii) and (iv), but the Committee took no further decision on this proposal.

In March 2011, the World Heritage Centre and IUCN received information on a major hydroelectric dam project (GIBE III) on the Omo River in Ethiopia that is likely to affect both Lake Turkana, situated downstream in neighbouring Kenya, and the cultural landscape of the Lower Omo Valley in Ethiopia. Based on these reports, the World Heritage Centre presented a report on the State of Conservation of the property to the 35th session of the World Heritage Committee[1]. In its Decision 35 COM 7B.3 (annex 1) the World Heritage Committee requested the States Parties of Ethiopia and Kenya to invite a joint World Heritage Centre / IUCN reactive monitoring mission to review the impacts of the Gibe III dam on the Outstanding Universal Value (OUV) of the property.

At the invitation of the State Party of Kenya, a joint World Heritage Centre / IUCN reactive monitoring mission to the property took place from 14 to 22 March 2012. As no invitation had been received from the State Party of Ethiopia, the mission did not visit Ethiopia. The mission looked into the impacts of the Gibe III dam and related developments and also assessed the overall state of conservation of the property and other factors affecting its OUV, in particular upstream irrigation plans, oil exploration, major declines in wildlife populations and cattle encroachment within the parks.

The mission team was comprised of Mr. Guy Debonnet of the UNESCO World Heritage Centre and Mr. Goran Gugić of IUCN and was accompanied by a delegation composed of representatives of Kenya Wildlife Service (KWS) and National Museums of Kenya (NMK). The mission team met with the Permanent Secretary of the Ministry of State for National Heritage and Culture at the start and the end of the mission and also with representatives of the Ministry of Foreign Affairs, Ministry of Energy, the Director General of the National Environment Management Authority (NEMA), the Director General of NMK as well as the Director of KWS. The mission team was able to meet with Prime Minister at the end of the mission. Three meetings were held with various stakeholders, one at KWS headquarters in Nairobi, and two close to the property at Ileret and Loiyangalani. Experts of Tullow Oil informed the mission team about the company's ongoing activities on oil exploration around Lake Turkana during a meeting at the company's office in Nairobi.

[1] More details are provided under 3.1

Based at Koobi Fora the mission team visited the park's headquarters at Alia Bay, the fossil sites and petrified forest, the Kokai area in the north, and the central part of Sibiloi National Park (SNP) between Koobi Fora and Derate as well as South Island National Park (SINP) by helicopter on the return to Nairobi. The mission was not able to visit Central Island National Park (CINP).

The terms of reference of the mission, its itinerary and programme and list of the people met can be found in annex 2 and 3 to this report.

2 NATIONAL POLICY FOR THE PRESERVATION AND MANAGEMENT OF THE WORLD HERITAGE PROPERTY

The property enjoys the highest level of legal protection under Kenyan legislation by both the Kenya Wildlife Act as well as the Antiquities and Monument Act, currently the National Museums and Heritage Act of 2006.

The property is managed by Kenya Wildlife Service (KWS), with National Museums of Kenya (NMK) in charge of the management of the fossil sites. KWS, a government parastatal established by Wildlife Conservation and Management (Amendment) Act of 1989 owns the Turkana National Parks. SNP was established on 7 August 1973[2]. Central Island was established on 26 January 1983[3]. The South Island National Park was established on 26 January 1983[4]. All above mentioned boundary plans pursue the principle of extension of the park boundaries 1 km from the topographic shoreline into the lake. This reading is also true for the boundaries of the World Heritage site.

The mission was informed that at the time of creation of SNP, an agreement was concluded with the local authorities to give certain user rights to the local communities[5], in particular access rights for the local inhabitants of the surrounding areas to graze and water stock „in case of difficulties" and for access rights to the County Council to the Lake shores to undertake „any sort of activity which may benefit the Council" (see annex 4). The concern expressed by the World Heritage Committee at the time of inscription on illegal grazing by large herds of domestic livestock in the property has to be read under the above mentioned agreement.

In the context of this report it is necessary to point to the provisions of the Wildlife Act[6]) concerning prospecting and mining in national parks: „*Subject to any rights lawfully acquired before the relevant date, and notwithstanding anything contained in any other written law, no person shall search for, attempt to win or win any minerals in, or remove any minerals from, a national Park except with the written consent of the Minister given after consultation with the Minister for the time being responsible for Mines, and in accordance with any conditions which the Minister may impose in relation to that consent*."

[2] Legal Notice No. 160 and Boundary Plan No. 204/47
[3] Gazette Notice No. 18 and Boundary Plan 204/53
[4] Gazette Notice No. 12, Boundary Plan No. 204/54
[5] Minutes 3/70 and 44/70 of an extraordinary meeting of the Marsabit County Council held on 23 March 1970
[6] CAP. 376, Part III, Article 10., Paragraph (1)

In terms of the World Heritage Convention, it is also important to note that the new Constitution of Kenya foresees that any treaty or Convention signed by Kenya is part of the Kenya law.

The practice of Environmental Impact Assessment is governed by the Environmental Management and Coordination Act (EMCA)[7], and the Environmental Impact Assessment and Audit Regulations (EIA/EA)[8]. The competent authority is the National Environment Management Authority (NEMA). EMCA requires that during the EIA process a proponent shall, in consultation with NEMA, seek views of persons who may be affected by the project or activity through posters, newspaper, radio and hold at least three public meetings with the affected parties and communities. NEMA may, after being satisfied as to the adequacy of the EIA issue an EIA license on such terms and conditions as may be appropriate and necessary to facilitate sustainable development and sound environmental management[9].

It is important to note that the northern tip of Lake Turkana and the Omo river delta which feeds into the lake as well as a large part of the Lake Turkana drainage basin is situated in Ethiopia. The mission was informed that there are no specific agreements in place between Kenya and Ethiopia for the management of the Lake Turkana basin. However, both Kenya and Ethiopia are part of the Nile Basin Initiative (NBI), an inter-governmental organization dedicated to equitable and sustainable management and development of the shared water resources of the Nile Basin. While the Turkana basin is technically not part of the Nile Basin, the mission notes that NBI represents an appropriate tool when it comes to transboundary and multilateral issues related to water management as those mentioned in this report and that in the framework of NBI, a number of tools have been developed which could also be used for the management of the Turkana basin. For example, the 2011 Nile Basin Sustainability Framework (NBSF) promotes the consideration of the transboundary dimension in riparian states' approaches to water resources management and provides guidelines for transboundary EIAs.

Although the SINP is one of Kenya's IBA and although the lake is the largest desert lake in the world, no portion of Lake Turkana has been declared a Ramsar site. The mission was not able to clearly confirm the statement of the 2001 IUCN evaluation that South Island National Park is a part of Mount Kulal Biosphere Reserve which extends over the southern part of Lake Turkana[10].

[7] 1999 No8 of 1999, Part VI
[8] Legal Notice No.121 of 2003
[9] EMCA, 1999, Article 63
[10] From the map provided with by the UNESCO MAB Secretariat, the transitional zone of the biosphere reserve extends to the lake shore only and SINP is not indicated to be part of that zone. According to information given by the MAB Secretariate the MAB national committee is working on a new zonation of Mount Kulal Biosphere Reserve.

3 IDENTIFICATION AND ASSESSMENT OF CONSERVATION AND MANAGEMENT ISSUES

The reactive monitoring mission assessed the potential impacts of a number of threats on the Outstanding Universal Value (OUV) of the property. These include the impacts of the Gibe III dam and related developments, oil exploration in and around the property, impacts of the LAPSET project and impacts of grazing and poaching. The general management effectiveness of the Property was also evaluated.

3.1 IMPACTS OF THE GIBE III DAM AND RELATED DEVELOPMENT PROJECTS

3.1.1 Background

In July 2010 the World Heritage Centre was informed that Lake Turkana faces significant threats to its environmental health due to the ongoing construction of a large dam being built upstream, the Gibe III Dam in Ethiopia and that additionally large-scale irrigation works in the basin have the potential to permanently reduce the inflow of water into the lake. This information included a letter of concern from NGOs, and a draft report entitled '*Assessment of Hydrological Impacts of Ethiopia's Omo Basin on Kenya's Lake Turkana Water Levels'* prepared for the African Development Bank.

In a letter dated 11 March 2011 addressed to the State Party of Ethiopia, the World Heritage Centre expressed its concern about this proposed construction, and requested additional details on the Gibe III dam project as well as a copy of its Environmental Impact Assessment (EIA). The State Party of Kenya was also informed. On 27 April 2011, the State Party of Ethiopia responded to the World Heritage Centre stating that impact assessments have been conducted taking into account the potential impacts of the project in relation to the World Heritage Convention, and that precautionary measures have been put in place, and will continue to be implemented, to avert potential adverse effects. However, no relevant documents, such as the requested EIA, were provided in conjunction with the State Party letter, and no information on the precautionary measures was provided.

At its 35th session, the World Heritage Committee expressed its utmost concern about the proposed construction of the GIBE III dam on the Omo River in Ethiopia and its likely impacts on Lake Turkana, considering reports that the dam is likely to significantly alter Lake's fragile hydrological regime, and threaten its aquatic species and associated biological systems. It noted that this development may pose an imminent danger to the property's Outstanding Universal Value, in line with Paragraph 180(b) (ii) of the *Operational Guidelines*. It requested the State Parties of Kenya and Ethiopia to submit to the World Heritage Centre a report on the course of action taken in response to this decision and to invite a joint World Heritage Centre / IUCN reactive monitoring mission with a view to considering at its 36th session in 2012 the possible inscription of the property on the List of World Heritage in Danger (see also Decision 35COM7B.3 in annex 1).

On 31 January 2012, a report was submitted by the State Party of Kenya in response to this decision, in which the State Party expressed its concern about the potential impacts of the Gibe III dam on the property and noted that it is of the opinion that no adequate scientific proof has been provided by the State Party of Ethiopia that adequate mitigation measures have been taken. The report further noted that this has to be addressed urgently to avoid irreversible damage to the property and that since

the issue is of transboundary nature a solution has to be found together with the State Party of Ethiopia.

At the same date, a report was also received from the State Party of Ethiopia, in which it noted that the Gibe III dam will not result in consumptive use of water, and hence water levels in Lake Turkana will return to normal once the dam reservoir is filled. It noted that irrigation development is not part of the Gibe III project. It concluded that all environmental impact assessments carried out indicate that the Gibe III dam will not have significant impacts on the environment and therefore that it will not suspend the construction of the dam as was requested by the World Heritage Committee. The State Party also transmitted electronic copies of two Environmental and Social Impact Assessments (ESIA), including the additional study on downstream impacts.

According to information gathered by the mission, the construction of the Gibe III dam is in progress. Construction work on the Dam started in 2006 and at the time of preparation of this report, the official website of the Ethiopian electricity cooperation reports the construction of Gibe III is more than 50% complete[11] and will be completed and commissioned in 2013. The dam crest will be 250m high. The dam will have 10 turbines generating 187 MW of electricity from each turbine. The electricity generated will be fed into the Ethiopian power grid with the intention of exporting surplus power to the neighbouring countries including Kenya, Sudan, Djibouti, Egypt, Somaliland and Somalia.

The mission notes that in August and July of 2010, the African Development Bank, the World Bank and the European Investment Bank withdrew their funding considerations for the Gibe III dam. At the same time, the Industrial and Commercial Bank of China (ICBC) and the Exim Bank of China reportedly approved financing covering a major portion of the dam's cost.

3.1.2 *Lake Turkana - a very particular desert lake ecosystem*

Lake Turkana is the largest desert lake in the world and the fourth largest lake of Africa. Because of its blue-green colour, linked to the presence of Algae the lake is also called the Jade Sea. The Lake Turkana catchment area is 130,860 km^2 in both Ethiopia and Kenya. The lake is sustained by the inflows of Ethiopia's Omo River, which alone provides 85 to 90% of the lake inflow. Evaporation rates of the lake are more than ten times the rainfall, and a volume equivalent to the entire annual Omo River flow is evaporated annually. This means that the lake acts as an evaporation pond and that the entire Omo river inflow is returned to the atmosphere through evaporation. Water is retained in the lake for only about 13 years, leaving behind the minerals carried into the lake by the rivers. The lake water is slightly saline with high electrical conductivity, but the levels of salinity are very much lower than they might be. The present salinity levels are equivalent to a lake only 600 years old. Hence, the salts are being removed through other processes, and at a considerable rate. It has been proposed that the salt loss is a consequence of sediment / water interactions which indicates the importance of an intact delta ecosystem with natural geomorpholigical and ecological processes.

The Omo river and delta, with its fresh water and suspended sediments from the Ethiopian highlands, is a stark contrast to the lake, offering the opportunity to local people to cultivate / irrigate along the banks in an otherwise barren and desolate area.

[11] See the official website of the Gibe III project (http://www.gibe3.com.et/) which includes also copies of the ESIA

It is evident that the Omo River and its delta in particular influences the ecology of the lake in several respects, as the river carries salts, minerals and essential nutrients into the lake. Sediment deposition rates are important. The sediments create a delta zone and are also distributed throughout the lake by currents. The delta provides protection for spawning fishes and larvae and is also an important area for resident and migrant bird populations.

The Omo river flow patterns varies through the year, and control the cyclical rise and fall in lake level, which causes inundation and recession of the littoral zones of the shore margins. These profound seasonal changes arise in the period August to October. The inflowing flood periods change the prevailing lake currents and circulation patterns. The flood influxes stimulate the migration of spawning fish into the Omo River. Within the main lake, fish breeding also tends to be greatest during flood periods. This is due to the sediment-rich waters, which extend south right through the central sector of the lake. The floods dilute the lake water and lower the salinity levels in northern parts of the lake in particular. The sediment plume reduces visibility and fish tend to move to the lake surface and to the shore. The influx of nutrients during the flood season initiates changes in the algal population, and the margins of the lake inundate. As the lake level rises typically up to 300 mm per month, starting from July, the inundated margins in flat areas of the lake such as at Ferguson's Gulf and SNP can extend many hundreds of meters. The shoreline terrestrial vegetation provides refuge habitat for fish when inundated. These inundated plains together with the delta harbour a vegetation of macrophytes[12] such as *Typha australis* and *Sporobolus sp.*. The shoreline terrestrial vegetation provides refuge habitat for fish when inundated. The inundation areas are also important for the abundant birdlife, including palearctic migrants and provide important grazing grounds for the large herbivore populations in SNP. They are also used by local pastoralist communities for grazing. If the shoreline areas are heavily grazed, this will reduce the refuge and potential breeding success. On the other hand, the presence of livestock adds nutrients. Studies demonstrated that falling lake levels between 1972 and the late 1980s reduced biomass and resulted in 70% reduction in the endemic zooplankton based open water pelagic fish communities in Lake Turkana.

3.1.3 Environmental (and Social) Impact Assessments and Related Documents

As mentioned above, the State Party of Ethiopia submitted in November 2011 a copy of the two ESIA it has conducted, commissioned by the Ethiopian Electrical Power Cooperation (EEPCO): the Gibe III Hydroelectrical Project Environmental and Social Impact Assessment (ESIA) prepared by CESI of Italy, in association with MDI Consulting Engineers of Ethiopia finalised in January 2009 and the Gibe III Hydroelectrical Project Additional Study on Downstream Impacts conducted by Agriconsulting of Italy in association with MDI of January 2009 which looks at the expected potential impacts and necessary mitigation measures on that the downstream natural and social environment[13].

The mission notes that both ESIAs were completed in 2009, while construction work on the dam started in 2006, which is clearly not in line with established best practice on ESIA and shows that a zero scenario (not building the dam) was never considered. The mission further notes that there has been wide

[12] A macrophyte is an aquatic plant that grows in or near water and is either emergent, submergent, or floating. In lakes macrophytes provide cover for fish and substrate for aquatic invertebrates, produce oxygen, and act as food for some fish and wildlife.
[13] As mentioned these are available on the Gibe III website http://www.gibe3.com.et/Environmental.htm

international criticism about the quality of the EIA studies undertaken and on the poor public consultation which took place, which reportedly only included part of the affected populations. The mission was informed that because of inadequacy in the procedures of the EIA process the World Bank and other donors decided not to provide funding for the project.

The mission further notes that the ESIAs submitted by the State Party of Ethiopia do not assess any impacts beyond the Ethiopian territory and do not consider possible impacts on the whole of Lake Turkana. It therefore is not adequate in terms of assessing the potential impacts on the Outstanding Universal Value of the Property. In addition, the documented public consultation process also did not include affected populations in Kenya.

A number of other assessments and studies also were done to further investigate possible impacts of the Gibe III hydropower project. These reports were not submitted to the World Heritage Centre by the State Party of Ethiopia or the State Party of Kenya but the mission was able to get copies through other sources.

At the request of the government of Ethiopia, the European Investment Bank (EIB) was considering a possible support to the GIBE III Project. Prior to any decision, the EIB appointed Sogreah Consultants to conduct an independent review of the existing environmental and social impact assessment documentation and to address issues not or insufficiently covered in the studies. The Environmental & Social Independent Review Consultant (ESIR) in its final report «Independent Review and Studies regarding the Environmental and Social Impact Assessment on the GIBE III Hydropower Project» of May 2010 (further referred to as the EIB review) expressed a major concern regarding the absence of detailed baseline information related to the hydrological and hydraulic behaviour of the Lower Omo system particularly in the delta region and to the socio-economic system developed in the delta particularly in relation to water management. The report also is limited to impacts in Ethiopia and while it provides some predictions on the decrease in water levels in Lake Turkana, it does not provide a detailed assessment of the environmental and social impacts on the Lake ecosystem and neighbouring communities.

The African Development Bank (AfDB) also commissioned a report to guide its decision making on providing funding for the Gibe III dam project. A report on «Assessment of the hydrological impacts of Ethiopia's Omo Basin on Kenya's Lake Turkana Water levels and fisheries, was finalised by Dr. Sean Avery in November 2010[14] (further referred to as the AfDB assessment). This report is also focusing on Kenyan territory and presents a thoroughly researched review of all the data previously published in connection with Lake Turkana's hydrology and fisheries, a hydrological modelling of impacts of lake levels during impounding and lake level variations once the dam is fully operational and looks at impacts on fisheries. The report also tries to estimate impacts of planned downstream irrigation projects as well as cumulative impacts of other proposed dam projects. While it is definitely the most complete and comprehensive report in terms of impacts of the dam and related developments on Lake Turkana, the assessment is not an ESIA and a public consultation process has not been carried out. The assessment refers to the presence of a World Heritage site but does not provide specific information on the possible impacts on the OUV of the property.

[14] Available at http://www.afdb.org/fileadmin/uploads/afdb/Documents/Compliance-Review/REPORT_NOV_2010_S_AVERY_TURKANA_Small_file.pdf

The mission notes that following these two additional assessments both the AfDB and EIB and as mentioned above, decided to withdraw their funding support to the dam construction project in August and July 2010, although it did not receive information whether the assessments were at the basis of this decision.

The mission was informed that the Ministry for Energy of Kenya has signed an agreement with the Government of Ethiopia to purchase power from the Gibe III dam once it is operational. Therefore, the construction of a high voltage power line connecting the Ethiopian and Kenyan grids is foreseen, the so-called Eastern Africa Inter Connector Project. The mission received information that for the part of the power line in Ethiopia, EEPCO prepared the ESIA for the Transmission line project. For the part of the powerline in Kenya, the mission was informed by the Kenya Electricity Transmission Company (KETRACO) that the powerline would not pass close to the lake and that an ESIA was under preparation. The mission notes the direct connection of the powerline project with the Gibe III dam project. This connection was acknowledged to the mission team by officials of the Ministry for Energy and KETRACO, who informed the mission that because of this linkage, it commissioned its own ESIA which was undertaken by Panafcon Ltd to assess the potential impacts of Gibe III may induce on the environment and the communities living in the downstream area of the proposed dam specifically Lake Turkana and its surroundings[15]: The mission was not provided with a copy of this report but was able to consult a copy from other sources. The report points to certain weaknesses of the other ESIA commissioned by the Government of Ethiopia and points to important potential environmental and social impacts of the dam filling and operation, a.o. on the aquatic environment without taking into consideration the irrigation projects which would increase the magnitude of the impacts. The report does not consider specifically impacts on the national parks which are part of the World Heritage sites. The report mentions that some public consultations were undertaken during the ESIA, involving communities living on the Lake Turkana shores and “relevant public institutions”. However, NMK and KWS staff participating in the monitoring mission noted that their institutions had not been consulted.

The mission also received information that several bilateral and multilateral development banks including the World Bank, African Development Bank and the French Development Agency (AFD) are currently considering proving financial support to the construction of the power line. The mission notes that some of these agencies have earlier refused funding for the dam project, a.o. based on environmental concerns or on weaknesses of the ESIA process for the dam and therefore it seems contradictory that they are willing to provide support to the power line, given that the power line is constructed to transport power produced by Gibe III.

The mission was also informed by NEMA that neither the KETRACO ESIA, nor any other of the above mentioned ESIA or assessments been submitted to them, in spite of their role as the responsible authority for approving ESIA in Kenya. NEMA staff expressed concern that the downstream impacts of the dam in Kenya had not been assessed and noted that a transboundary impact assessment should be conducted. They mentioned that in the framework of the NBI, guidelines had been developed for transboundary impact assessments of dams and that these had been approved by both Kenya and Ethiopia. They further informed the mission that they had informed the Kenya Ministry of Foreign Affairs of these concerns via the Ministry for Environment.

[15] Draft Final Report “The Eastern Africa Inter Connector Project – Consultancy Services for Carrying out Environmental and Social Impact Assessment of Proposed GIBE III Hydroelectric Power Project: Downstream of GIBE III: Kenyan Perspective of December 2011.

The mission concludes that in spite of the different ESIA and assessments that have been undertaken on the GIBE III dam project, no adequate ESIA was done on its transboundary impacts, in particular on Lake Turkana, nor on the potential impacts on the Outstanding Universal Value of the Property.

In preparation to the mission, IUCN commissioned an independent review of the potential hydrological impacts of the proposed GIBE III dam on the Outstanding Universal Value of Lake Turkana National Parks, prepared Hydro-ecology Consulting Ltd, which looked at the ESIAs submitted by the State Party of Ethiopia as well as the above mentioned assessment of hydrological impacts prepared for the AfDB and different documents and studies currently available.

3.1.4 *Direct impact of GIBE III Dam on Lake Turkana and on the OUV of the Property*

As mentioned above, the available ESIA and assessments do not look at the impacts on the OUV of the property. Nevertheless, the mission tried to draw conclusions, based on the review commissioned by IUCN and its own review of the available documents.

The different documents estimate that the reservoir of Gibe III dam will be 151 km long holding approximately 12 billion cubic metres of water when filled. It was mentioned before that the Omo river constitutes 85 - 90% of the water inflow into Lake Turkana and hence any consumptive use of water within the Omo Basin can only result in the shrinking of Lake Turkana. The water volume that will be stored in the Gibe III dam corresponds roughly to the amount of water Lake Turkana is receiving during an entire year and is equivalent to the water volume stored in the two upper meters. During the filling of the Gibe III dam reservoir, water will be subtracted from the Omo river system, resulting in a fall of the Lake Turkana water levels. The fall of water levels will obviously depend on the time used to fill the dam, but modelling shows that during a three year filling period, water levels will be reduced significantly by 1.65 m to 4 m superimposed upon the natural fluctuation of the level.

However, once the dam is filled, water amounts released will on an annual basis again equal the normal annual flow of the river and so the level of Lake Turkana water levels will gradually return to its original state. The different models show that this return to the equilibrium position will take in the order of 12 to 15 years in case that no other developments changing the water regime will take place.

The mission notes that this means that at least for 15 years, water levels of Lake Turkana will be significantly lowered as a result of dam impounding.

Lowering water levels will result in a retreat of the shore line of the lake. The importance of this shoreline retreat will depend on the gradients of the lake shore. The southern area of Lake Turkana has high land gradient compared with the northern part with the Omo Delta area and around SNP which has low gradient (see Figure 2). More recession will occur in areas with low gradient. Due to the low gradient in the northern part of Lake Turkana including large parts of the shoreline of SNP, a decrease of lake level by 1,65 m (the minimum decrease which is estimated in the different studies) will potentially cause retreat of shoreline the lake by 2-3 km, while this will be as low as 66.4 m in the southern part of Lake Turkana including SINP.

The mission notes that the World Heritage property stretches 1 km into the lake from the shoreline. The mission therefore concludes that during the dam impounding, a substantial portion of the lake currently included in the World

Heritage site, in particular the shore with its related wetland habitats of SNP, will dry up.

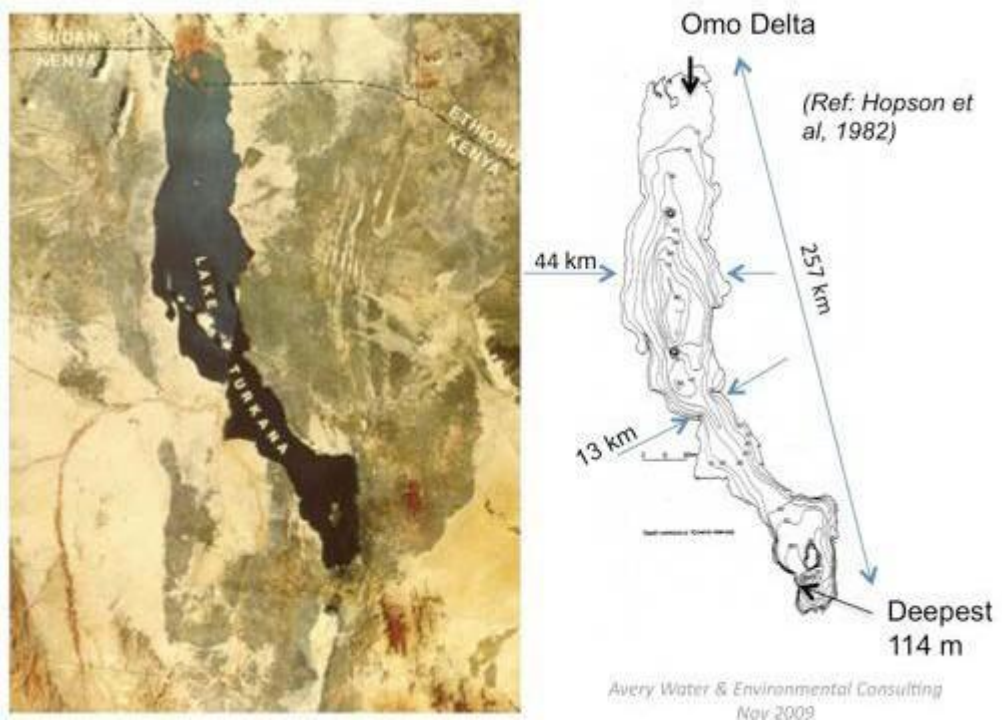

Figure 2: Lake Turkana – Bathymetric Contour Plot *(Source: Ferguson & Harbott, 1982[16])*
Note: The "shoreline" is the 1972 lake water level, i.e. Zero level datum adopted at that time = 365.4 masl. The lake level in late 2010 was slightly lower than 1972 (about 363 masl)

Both the AfDB assessment and the KETRACO ESIA point to the fact that the decrease in lake levels during the dam impounding could have important impacts on aquatic biodiversity in the lake. Any volume reduction reduces fisheries habitat volume and hence available biomass and will also result in an increase in salinity through the concentration of salts. Especially in the areas with a low gradient, the distribution of aquatic macrophytes and therefore the floodplains will probably be seriously affected. As mentioned before, it is important to note that these macrophytes play an important role as they provide cover for fish and substrate for aquatic invertebrates, produce oxygen, and act as food for some fish and wildlife. In Lake Turkana it is known that these submerged vegetation zones are crucial as fish breeding areas and are important for water birds, including the Palearctic migrants. The floodplains are also important habitat for a large part of the large herbivore population living in SNP, who depend on them for food in this arid dryland environment.

One of the most important breeding areas in Lake Turkana is Ferguson's Gulf, located on the western shore. A reduction in level greater than 3.1m below the 1972 Zero datum would leave the gulf dry and is likely to have an important impact on fish populations.

[16] Ferguson A.J.D., Harbott B.J. (1982). Geographical, physical and chemical aspects of Lake Turkana. Vol.1, Chapter 1, A Report on the Findings of the Lake Turkana Project, 1972-75, funded by the Government of Kenya and the Ministry of Overseas Development, London, Overseas Development Administration, London.

Reducing the inflow of freshwater into the lake will also increase salinity levels. Already salinity levels of the lake are very high, but the existing mammal and fish species seem to have a high tolerance. However, it is not known how they will react to even higher salinity levels[17].

The reduced water flow in the Omo river will also affect the Omo river delta, as recession of the lake will mean that the delta will not be flooded effectively, impacting fish spawning and bird populations. It will also reduce the natural ecological and geomorphological processes of the delta ecosystem.

Given the importance of the delta and the floodplain areas as grazing areas for livestock, it can also be expected that grazing pressure inside SNP will increase even more. As mentioned above, increasing grazing pressure on the remaining floodplains will also negatively impact fishstocks. Some people also predict that reduced grazing opportunity will lead to greater conflicts between the different pastoralist tribes.

When Gibe III is operational and without additional water abstraction, the overall long-term runoff should remain more or less equal as before, since no water is withdrawn from the reservoir. However, while the long-term average level of Lake Turkana is not affected by hydropower generation and should return to normal 12 to 15 years after the dam starts to be filled, there will be a profound permanent change in the seasonal flood dynamics and the seasonal fluctuations of the lake level. The dam will create a regulated flow and seasonal differences between high and low water levels of the lake are expected to be reduced from 1.2 to 0.8 m. The importance of the seasonal floods for the ecology of the lake was mentioned earlier. The flood pulse is vital for bringing organic matter and nutrients into the lake, particularly nitrogen which is a limiting factor for its primary production. Floods are also reducing the salinity which seems an important stimulant for fish spawning. Seasonal flooding of the Omo river delta and of the floodplains is crucial for fish and bird populations, but also to sustain large herbivore populations and also to provide vital grazing areas for livestock. The regulation of the Omo river flow is therefore predicted to be detrimental to the ecology of the lake. Contrary to the lake level decrease linked to the dam filling, ***the reduction of seasonal variations will be permanent*** and lead to a permanent loss of wetland habitats particularly in the shallow northern part of the lake where SNP is situated.

To counter this problem, dam developer EEPCO is proposing in the ESIA an artificial environmental flood flows during 10 days in August/September. This artificial environmental flood will reduce the electricity output. However, all other studies and assessments (EIB review, AfDB assessment and KETRACO ESIA) conclude that the proposed artificial flood is not significant as it concerns less than 1 % of the total yearly volume and hence will not contribute significantly to maintaining the natural dynamics of the delta and the lake. More studies will be needed to quantify the exact impacts on the ecology and to identify an appropriate mitigation plan to retain the seasonal variations which are crucial for the lake ecology. However, increasing the time and volume of artificial floods will result in less electricity generation and have an impact on the economic performance of the dam.

Based on the above, the mission concludes that the Gibe III dam will likely have a direct significant impact on the OUV of the property. The dam impounding will

[17] The lake water quality does not meet the standards required for human consumption nor for the use by livestock in particular because of high levels of fluoride. However, lake water is used by local pastoralists for domestic and livestock use because of necessity. Increased salinity levels would increase the significant health risks associated with this practice.

result in a significant drop in water levels in Lake Turkana for a period of 12 to 15 years, resulting in the retreat of the lake shore beyond the boundaries of the property in SNP and in a permanent alteration of the seasonal flood dynamics and seasonal variations of lake levels. These changes are likely to seriously impact the ecology of the lake, the fish and bird populations and the populations of large herbivores which are depending on the floodplains, and therefore have a direct impact on the values which justified the inscription of the property under criterion (x).

3.1.5 Impacts of irrigation projects linked to the Gibe III dam project.

While the Gibe III dam itself will not be water consumptive, it will cause a leveled discharge in comparison with the current situation, without any seasonal variations. This will make it possible to develop irrigation schemes downstream the dam, replacing the current rain fed and flood agricultural systems. Although the State Party report of Ethiopia asserts that irrigation development is not part of the Gibe III project, Ethiopia has a clear policy vision to develop irrigated agriculture in the Omo river basin, which has been indeed developed with the assistance of several agencies including the World Bank and FAO since the nineties. The two ESIA submitted by the State Party note that one of the benefits of the dam project is that it will be possible to develop irrigated agriculture and states that „ *... water abstraction from the Omo river will probably increase in the low-flow years, due to both the regulated flow of the river encouraging further development of public and private permanent intake facilities for dry-season irrigated farming*". The Omo-Gibe Basin Integrated Development Master Plan of 1996 presents a projected irrigation development of the Omo Basin to 2024 of 74,300 ha. To develop this surface, the master plan estimates water abstraction will require 16% of the water resources of the Omo river. More recent assessments of potential irrigated area are conflicting. In the ESIA, CESI suggested an irrigation area 50% larger (CESI SpA, 2009, 153,000 ha), whereas the EIB review derived a "suitable" area of 79,000 ha, similar to the Master Plan. Earlier reports by World Bank and FAO cited even prospective irrigation areas of 445,320 ha, with an irrigation requirement of 25% of the annual Omo river flow.

The question is what the impacts of these additional substractions will be on the Lake Turkana water levels. The ESIA on downstream impacts states that this abstraction will be „negligible compared to the annual flows" but presents no calculations to justify this statement. However the 1996 master plan projects abstractions amounting to 16% of the annual Omo river discharge. Based on projected water abstraction of 16 % of the 1996 Master Plan, the AfDB assessment calculated the impacts the proposed irrigation schemes on the Lake Turkana water level and concluded that the 2024 projection would result in a ***permanent 8,4 m drop of the Lake Turkana water level*** compared to the 1972 zero datum.

However, there could be long-term prospect for much larger abstraction from the Omo than was considered in the Master Plan. Already important industrial agriculture projects are currently under development downstream of the Gibe dam. These include the KURAZ Sugar Development project by the state owned Ethiopian Sugar Cooperation downstream of planned GIBE V with the construction of three sugar blocks (figure 3):

- the KURAZ Block 1 under construction (82,600 ha), partly in Omo National Park
- the KURAZ Block 2 (81,200 ha), partly in Omo National Park
- the KURAZ Block 3 (81,300 ha)

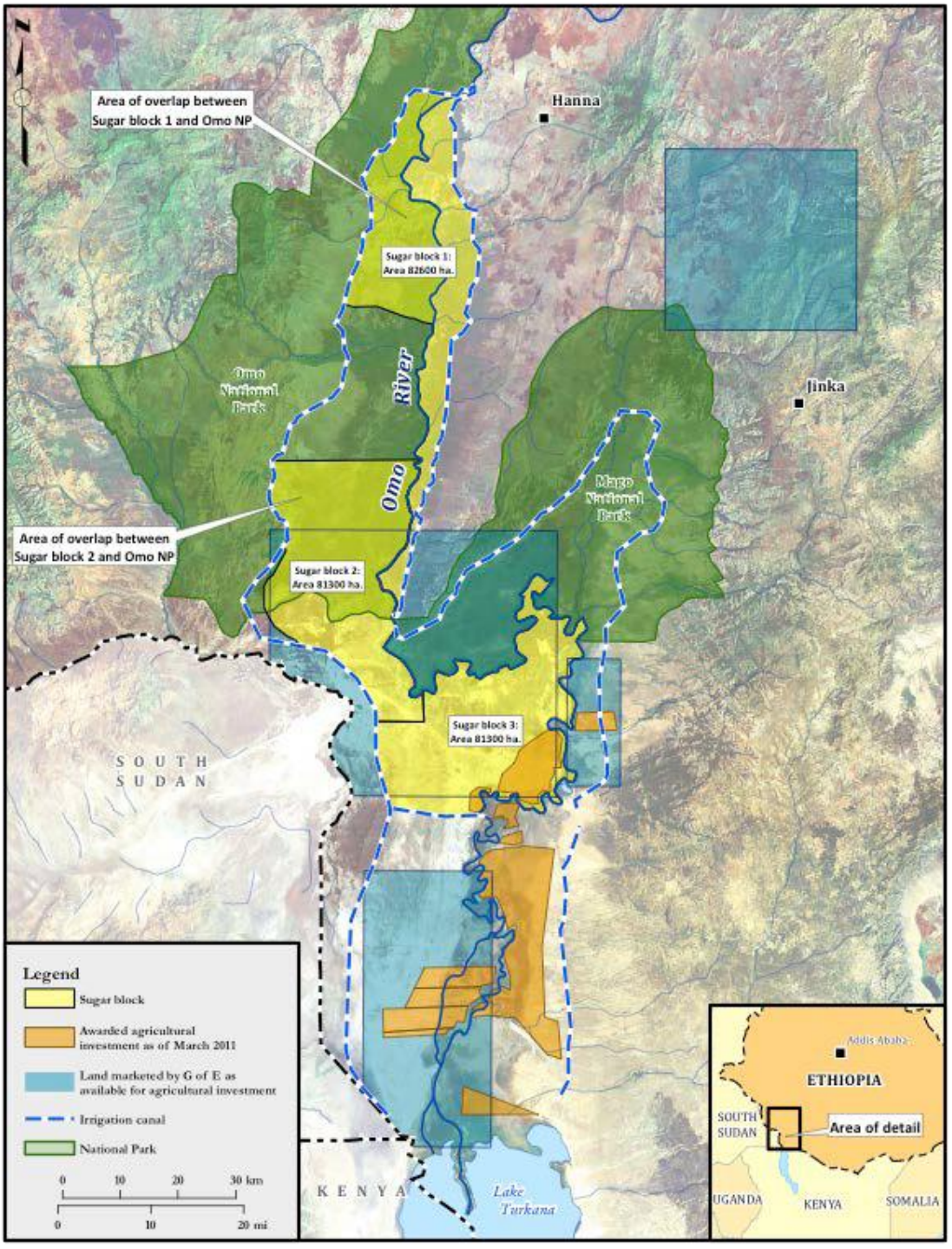

Figure 3: Planned irrigated agricultural developments in the lower Omo valley

The report of September 2009 of the Ethiopian Wildlife Conservation Authority (EWCA) "Existing Challenges: Plantation Development versus Wildlife Conservation in the Omo-Tama-Mago Complex" mentions that the project comprises the construction of six sugar factories, sugar cane plantations, housing units, village, canals and roads, that about 150.000 ha[18] of natural land will be converted to sugar cane plantations as well

[18] However the 3 Kuraz blocks total more than 245,000 ha.

as the construction of about 250 km long canal on both sides of the Omo river. Sugar cane is known as a crop needing high quantities of water. According to reports in the Ethiopian media, the Kuraz sugar development is already underway with infrastructure including irrigation canals already under construction and the plantation of the first 6,000 ha launched in April this year[19].

Further agricultural developments are also reported to be planned. The EWCA documents mentions a 33,000 ha "Mago Farm", planned inside Mago National Park. According to the Oakland Institute[20], a policy think tank looking into land deals in Africa, a further 15 land concessions totaling 150,000 ha have been awarded since 2008 in South Omo for agricultural projects, mainly for cotton with a further 89,000 ha still available in the federal land bank. This would bring the total of area earmarked for agricultural development to 445,500 ha, a figure close to the figure cited in the original FAO and World Bank studies. ***If this entire potential is realized, the water abstraction from the Omo River could well reach 25% to 30%, which could result in a drop in lake levels of more than 20 meters.***

The mission notes that the State Party of Ethiopia did not submit an ESIA for any of the projects for irrigated agricultural development which are planned and already underway. As mentioned these impacts are not considered in the ESIA on downstream impacts of the Gibe III dam, which was submitted by the State Party.

The mission notes that in spite of the statement in the State Party report that irrigation development is not part of the Gibe III dam project, detailed plans for these developments exist and a large scale sugar development by the Ethiopia Sugar Cooperation is reported to be already underway. These developments will inevitably result in important water abstractions from the Omo river and in a significant and permanent drop of the lake Turkana water levels.

3.1.6 Further hydroelectric dam developments on the Omo river

The Gibe III dam is part of a larger development scheme of hydropower generation on the Omo river and therefore has to be assessed within a cascade of schemes along the Omo river.

These are:

- the existing GIBE I dam (184 MW)
- the existing GIBE II dam (420 MW)
- the Gojeb and Halele / Werabesa hydropower schemes - foreseen upstream of GIBE III
- the GIBE III dam under construction (1870 MW)
- the planned GIBE IV dam (1472 MW)
- the planned GIBE V dam (560 MW)

A dam also exists on the Turkwel River in Kenya, which also flows into Lake Turkana that has already heavily impacted the former delta of this river.

[19] The mission was informed by people that the Kuraz block II would include the Lower Omo Valley World Heritage site, a cultural property which is included in Omo National Park, but was not able to verify this information.

[20] See http://www.oaklandinstitute.org/land-deals-africa-ethiopia

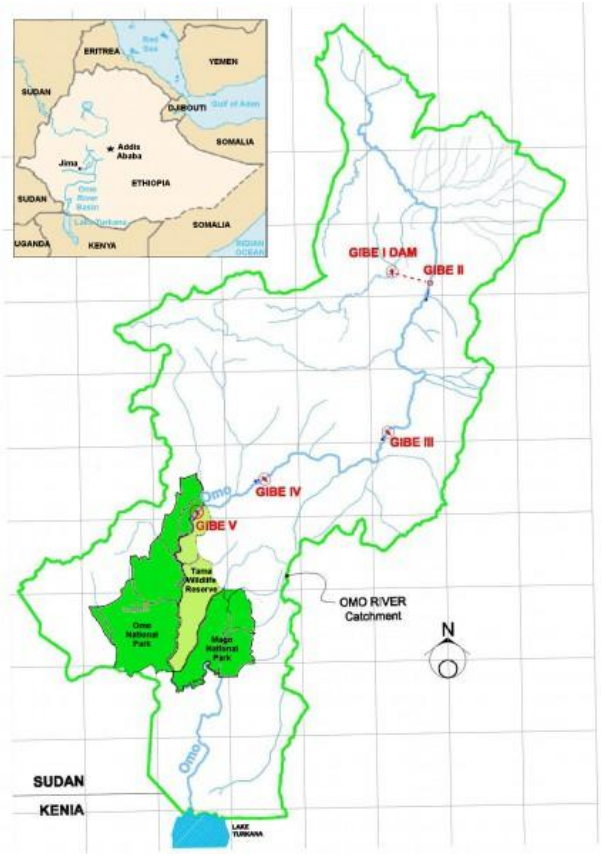

Figure 4: Sequence of Dams planned on the Omo river

This system of dams will cumulatively impact the water inflow into Lake Turkana: Gibe I and Gibe II dams are already in operation upstream of Gibe III, although Gibe II is under repair due to a tunnel collapse. On the Omo River, Gibe IV and V are also planned, but few details of their design and operation are available. Simulations show that the cumulative impact of increasing the surface area of all the reservoirs could reduce the volume because of increased evaporation. Each reservoir will need to be filled, so reduced flow inputs to Lake Turkana and further reduction in seasonal variations in flow might continue for a much longer period than 15 years.

The mission notes that the planned system of dams will result in a cumulative impact on Lake Turkana, which is currently not assessed as each dam project is looked at in isolation.

3.1.6 Impacts on local communities

The mission participated in two stakeholder meetings in Ileret and Loyangalani, with local officials and representatives of local communities. During these meetings, local community representatives expressed their frustration on the lack of information on the Gibe dam project and its impacts and the lack of consultation. They expressed fear that impacts on water levels of Lake Turkana could threaten their livelihoods. They particularly mentioned their dependence on the lake for fishing, grazing areas and even drinking water. They voiced their anger that the Government of Kenya had neglected their interests and had given more priority to electricity than to their livelihoods. They pointed out that as a result of these impacts tensions between different tribal groups could rise. They voiced their opposition to the dam project which they considered is a threat to their survival.

The mission notes that while this issue is outside the Terms of Reference of the present mission, several NGO have pointed to the potential detrimental impacts of the dam and related large scale agricultural development projects on the livelihoods of local communities and in particular indigenous people.

3.1.7 Conclusion

The mission concludes that based on the information available the potential and ascertained cumulative impacts of the GIBE III dam and related developments are highly likely to impact the Outstanding Universal Value of the property and that the conditions for inscribing the property on the List of World Heritage in Danger are met.

During the meeting with the Prime Minister of Kenya, the mission was informed that the Government of Ethiopia had assured the Government of Kenya that the GIBE III dam would not have a long term impact on the water level of Lake Turkana but that they had not been informed about the related irrigation projects.

.

The mission considers that the State Party of Kenya needs to urgently address the issue of cumulative impacts of GIBE III and related developments on Lake Turkana on a bilateral basis with the State Party of Ethiopia. It further considers that a Strategic Environmental Assessment should be conducted urgently to assess cumulative impacts of all developments impacting on Omo river basin in order to make strategic choices on the management of water in the basin and to identify appropriate corrective measures to ensure that the water level in Lake Turkana as well as seasonal oscillations will be maintained to a level which is sufficient to maintain the OUV of the Property. The mission also notes the aggravating impacts the dam and related projects are likely to have on the livelihood of local communities living around Lake Turkana.

3.2 OIL EXPLORATION AND EXPLOITATION

In 2011 the World Heritage Centre received information that oil exploration concessions had been attributed to Tullow Oil all around Lake Turkana, also covering the property. On 21 July 2011 the Director of the World Heritage Centre sent a letter to the State Party to request the official position of the Kenyan authorities on this issue and any relevant documents, such as a conducted independent ESIA, for examination by IUCN. No reply was received on this letter.

The mission team met with representatives of the Ministry for Energy, Tullow Oil and NEMA and was able to get more information on the current status of the oil exploration.

The mission was informed that several oil exploration blocks (Figure 5) have been attributed in Kenya which are related to Lake Turkana and the World Heritage Property[21] as follows:

- Block 10BA covers the western shore, the lake with CINP and the eastern shore with a large portion of SNP

[21] The mission also notes that block 12A seems to include Lake Bogoria National Park, which is part of the Rift Valley Lakes World Heritage site, while the South Omo block in Ethiopia might also overlap with the Lower Omo Valley World Heritage site in Ethiopia.

- Block 10BB covers the south-western, southern and south-eastern shore of Lake Turkana including SINP
- Block 10A east of Block 10BA covers still the eastern edge of SNP.

In addition Tullow informed the mission that they also acquired an exploration block north of the lake on the Ethiopian side (the South Omo Block).

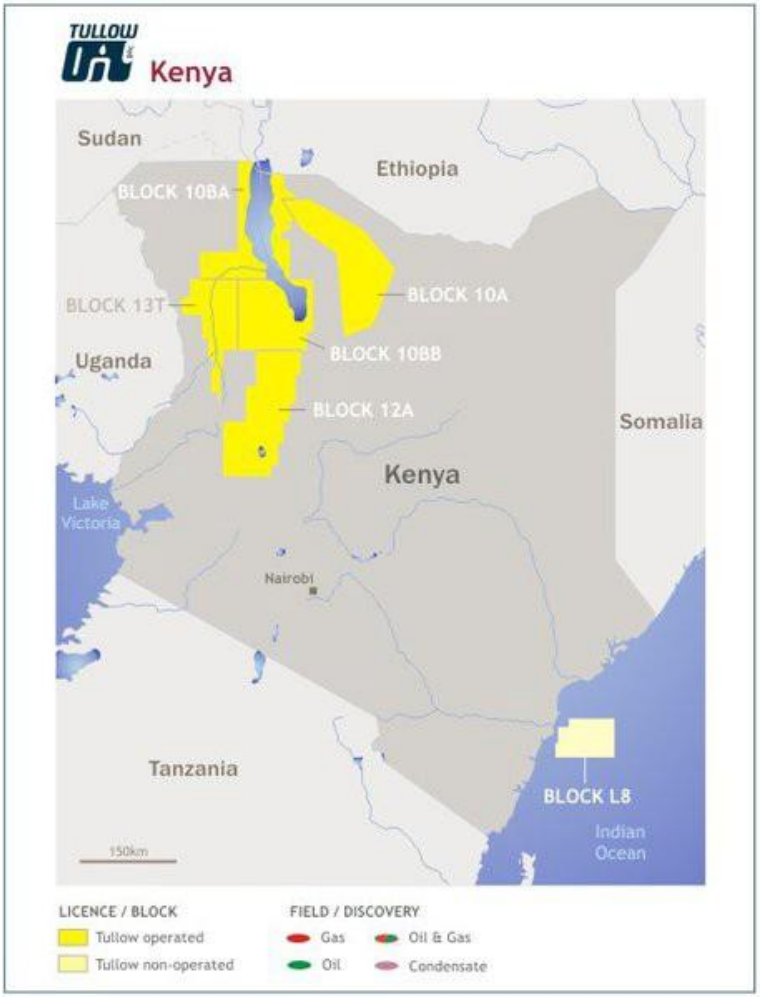

Figure 5: License Blocks of Tullow Oil plc in Kenya

The mission was further informed by NEMA that Tullow Oil, received the authorisation for seismic exploration activities in all these blocks based on EIAs, which have not been submitted to the World Heritage Centre. The mission requested copies of the EIA but has not received them by the time of writing of this report.

The mission was provided by NEMA with a copy of the exploration licence for block 10BA which overlap with SNP and notes that the licence includes a provision that the company needs to collaborate with KWS as the management authority of SNP to ensure protection of the World Heritage property[22]. The mission was further informed that neither KWS nor NMK, which is in charge of managing the fossils sites in the property, had been informed before the licence was attributed. It is important to note

[22] The exact text of provision 2.3 of exploration conditions is: "the proponent shall work in close collaboration with the Kenya Wildlife Service to ensure protection of World Heritage Centre". This is confusing and should be clarified.

that as mentioned in chapter 2, the Wildlife Act clearly stipulates that explicit consent from the Minister in charge of wildlife is necessary to do prospecting in a National Park. In this particular case, according to the information given to the mission, this consent does not appear to have been given. In addition, the case law of the World Heritage Convention clearly opposes oil exploration inside World Heritage sites and the Kenya Constitution foresees that all Conventions are automatically part of the Kenya law.

The mission therefore concludes that the provision mentioned above which is included in the EIA license should be clarified to more clearly state that oil exploration activities should not take place in the part of the oil exploration blocks situated inside the World Heritage property.

Representatives of Tullow Oil clarified to the mission team that for the moment only aerial seismic surveys have been done over block 10BA and that ground seismic operations are currently planned and starting only on the western shore and in the lake and therefore avoid both parts of the serial property CINP and SNP located in this block. Tullow Oil representatives also stated that further ground surveys on the eastern shore, where SNP is located, are currently not foreseen and might not be necessary. Nevertheless, they confirmed while they are currently not envisaged, there is a planning of seismic operations within SNP mainly for Block 10BA and to a lesser extent Block 10A.

The mission was further informed that the current licence only provides for seismic exploration activities. In case the seismic would produce positive results, drilling of several exploratory wells could be foreseen[23], but this would necessitate a new licence, subject to a new EIA. The mission was further informed that for the seismic ground surveys which had just started on the western shore, Tullow Oil was collaborating closely with NMK staff and NMK is being involved in the planning process where the seismic ground survey touches fossil sites. The mission was explained the methodology which was used for the seismic ground survey and the precautions taken to minimize impacts on the vegetation and to avoid fossil sites. Tullow Oil also explained the methodology which will be used on the lake and noted that while there are no data on the impacts of this methodology in lake ecosystems, it has also been used in sensitive marine areas.

The mission is concerned about the statement of representatives of Tullow Oil that in case oil exploration activities produced positive results, it is possible that oil drilling could happen in the lake itself. The mission notes that a portion of the lake itself is part of the property and considers that oil exploitation in the lake itself could have a negative impact on the property, particularly on essential wetland habitats along the shore. The mission also notes that it needs to be taken into account that the lake is situated in a seismic active area and that possible security issues in the area need to be considered.

The mission reiterates the position of the World Heritage Committee that oil exploration is not in accordance with the World Heritage status and takes note of the fact that so far no oil exploration activities have taken place within the property itself. It further considers that the State Party should urgently clarify the provision of the EIA licence on the protection of the World Heritage property, to ensure that no exploration can take place within the property. The mission notes

[23] On 26 March, shortly after the mission, Tullow announced an oil find at the Ngamia 1 exploratory well in the 10BB exploration block. This well is situated at considerable distance from the lake and the property.

the precautions taken by the State Party and Tullow Oil to avoid impacts of the current seismic survey work on important fossil sites outside the property.

The mission recommends that Tullow Oil on a voluntary basis subscribes to the 'no go commitment" not to explore or exploit oil or minerals in World Heritage properties, as previously done by the International Council on Mining and Metals[24] and Shell[25].

The mission further notes that in case oil is found outside the World Heritage property, it will be important to consider potential impacts of its exploitation on the OUV of the property in the EIA process. This would be in particular important if the oil would be situated under Lake Turkana. These considerations should also concern potential related infrastructure such as oil pipelines.

3.3 THE LAMU PORT INITIATIVE (LAPSET)

The mission was informed that as part of its 2030 development vision, the State Party of Kenya in cooperation with the State Parties of Ethiopia, and South Sudan is planning a larger development which includes the Lamu Port Initiative, the planned economic corridor Lamu Port South Sudan Ethiopia Transport Corridor (LAPSSET) and related developments (roads, railway, pipeline, power lines, wind farms, resorts)[26].

The mission considers that these projects will cause major changes in Northern Kenya, and that the cumulative impacts could affect the property and recommends that a Strategic Environmental Assessment is undertaken which takes into account the Lake Turkana and the other World Heritage sites effected by the development vision.

3.4 WILDLIFE POPULATIONS, POACHING AND FISHING

Historical data show that there has been a process of erosion of species present in the basin of Lake Turkana over the last 100 years. Reports from early explorers indicate that this area was once inhabited by large herds of elephants, rhinoceros and buffalo. However today, these animals have all vanished from the area. At the time of inscription, the IUCN evaluation also noted that wildlife populations were low in SNP and observed a decline in the number of Flamingo at CINP.

In addition to this historical trend of decline probably linked to poaching and hunting, wildlife populations have also been impacted by periods of drought, which result in increased mortality of livestock and wildlife.

In spite of numerous requests the mission was not provided with any recent data on wildlife numbers, and so it is difficult to get a clear idea of recent wildlife trends. The only data which were available to the mission are the data in the 2002 – 2007 Central Island and Sibiloi National Parks Management Plan, which mostly date back to before the time of inscription. The management plan provides data of aerial surveys of SNP carried out between 1978 and 1997, in which a total of fourteen wildlife species have

[24] The ICMM position paper on World Heritage can be downloaded at http://www.icmm.com/page/1672/iucn-icmm-dialogue

[25] See http://www.shell.com/home/content/environment_society/environment/biodiversity/protected_areas/

[26] See http://republicofkenya.org/economy/infrastructure/

been identified (Table 1). Only five wildlife species (Grant's Gazelle, Gerenuk, Oryx, Ostrich and Grevy Zebra)) were consistently sighted during all the six aerial surveys carried out between 1978 and 1997 by the Department of Aerial Surveys and Remote Sensing (DRSRS) in the Ministry of Environment and Natural Resources. Two species (Tiang – endangered subspecies of topi and Burchell Zebra) were sighted five times and one animal species (Giraffe) was sighted three times. The Lesser Kudu was sighted twice while Eland, Impala, Hippopotamus, Hyena and Reedbuck were sighted only once. The plan notes that there has been a gradual decline in numbers of Grant gazelles and Grevy Zebra over the eleven-year period, while those of Gerenuks, Ostrich, Burchell's zebra and Lesser Kudu have remained steady and tiang numbers have increased over the same period. The management plan also notes a decline in large carnivores which are reported to have dwindled because of the intensive human activities in the area.

Table 1: Change in wildlife numbers from 1978 to 1997

Species Names	July 1978	Feb 1981	Oct. 1987	Sept 1990	Sept 1993	Aug 1997
Grants Gazelle	10,263	3,580	6,808	7,873	6,909	6,754
Gerenuk	2,350	966	1,403	1,758	2,629	2,912
Oryx	7.794	3,580	1,863	3,202	3,660	7,622
Grevy Zebra	1,487	738	1,311	708	1,392	557
Ostrich	2,498	454	782	2,073	979	2,230
Tiang	118		2,921	7,847	5,259	6,444
Burchell Zebra	327	644		4,540	360	495
Giraffe	297	94	46			1,053
Lesser Kudu		75			51	
Eland			207			
Impala			1,035			
Hippo						61
Hyena				26		
Reedbuck				26		

Source: DRSRS (1997) quoted in the 2002 – 2007 management plan

It is remarkable that the 1997 data report the presence of 1,053 giraffe. The giraffe subspecies in northern Kenya is the reticulated giraffe (*Giraffa camelopardalis reticulata*) which is of cultural importance to the pastoralist communities but heavily hunted, in particular for its skin. According to park staff, the species is now extinct in SNP (though a healthy population is still present in Marsabit National Park).

At the time of inscription, the important population of Nile crocodiles in Lake Turkana and the property was also noted, quoting that an estimate in 1981 that the lake's population comprises some 14,000 animals. The 2002-2007 Management Plan does not provide any figures on this matter and again no recent data were made available to the mission.

The mission was informed by various stakeholders that wildlife populations including crocodiles have indeed decreased significantly since the time of inscription. Certain flagship species like reticulated giraffe and Grevy's zebra are reported to have disappeared from the property. Competition with livestock is reported to be very important (see also 3.5) and according to some stakeholders pastoralists who commonly carry heavy weapons are also engaged in wildlife poaching. Park rangers noted that pastoralists do not engage in systematic poaching but sometimes kill wildlife

while practicing target shooting. Crocodiles are reportedly heavily persecuted by fishermen, who destroy nesting sites, including on SINP and CINP.

While the mission had no access to data on wildlife populations, it noted from observations during the field visit, that wildlife populations seem indeed to be impoverished and concentrated in the most secure areas of the property simultaneously being the wetland habitats along the shore between Koobi Fora camp and SNP headquarters at Alia Bay in particular indicating how essential those habitats are for wildlife. They consider that poaching pressure seems to be an important threat to the property.

The high diversity of the fish population of the lake is also an important justification of the OUV of the property. It needs to be noted that at the exception of the indigenous Elmolo people, a small community living on the southern lake shore, traditionally pastoralist communities were not engaged in fishing activities. However, as a result of drought and famine, some have reverted to fishing over the last decade, in particular among the Turkana living on the western shore of the lake.

The mission was informed that there is a two-kilometre fishing exclusion zone around the lakeshore in SNP, CINP and SINP to protect fish and crocodile breeding grounds. Although these areas are being protected by KWS, the extent of the exclusion zone is not marked thus making it difficult for fishermen to know when they have entered it. It also makes it difficult for KWS staff to determine when the fishermen have entered the zone. The mission further notes that there is no permanent KWS presence on neither SINP nor CINP[27] but according to information provided to the mission, both national parks are regularly patrolled by KWS staff. Nevertheless, it is clear that these areas cannot be effectively protected anymore by their remoteness and difficult access only and that without a permanent presence it is difficult to patrol these areas efficiently. During its visit to SINP, the mission team noted the presence of several fishing boats, while fishermen were drying their catch on the island.

The mission was informed that KWS has now adopted MIST (Management Information System) as the standardized monitoring system for its protected area system and just completed the training to start the introduction in the property. The mission considers this is a very positive development, as MIST will provide a clear view of the patrol effort and coverage in the property and will provide data on illegal activities. This information will help to guide decision making to strengthen efficiency of law enforcement and surveillance activities.

The mission concludes that the wildlife populations which contribute to the justification of the inscription of the property under criterion (x) seem to be eroding, though as a result of the lack of data it is impossible to know the exact status of these populations. The mission therefore notes that a wildlife census, including also the Nile crocodile, should be undertaken to establish the status of the OUV.

The mission further concludes that poaching of wildlife and illegal fishing are obviously serious conservation issues in the site that need to be addressed urgently and need to be reflected in the new management plan (see also 3.6 and 3.7). To improve law enforcement, the mission recommends that KWS establishes a permanent presence in the affected areas of the property, in particular the northern part of SNP, in CINP and SINP and strengthens the

[27] The islands have no freshwater, making it logistically challenging to establish such a presence.

efficiency of law enforcement and surveillance based on the results of the MIST monitoring system which is being introduced in the property.

The mission considers that wildlife species that have disappeared such as Grevy's Zebra and Reticulated Giraffe could be reintroduced from other protected areas in Kenya and notes that KWS has the necessary experience to conduct such an operation. However, the mission notes that any reintroduction can only be successful if the factors which led to the disappearance of the species are been addressed. Given the cultural importance of the Reticulated Giraffe it would also be important to involve local pastoralist communities closely. They consider that a successful recovery in SNP and effective protection of Nile Crocodile would indicate not only integrity of the ecosystem of the property but also successful communication, education and cooperation amongst KWS and NMK staff as well as local pastoralists and fishermen.

3.5 PASTORALISM AND GRAZING ISSUES

Marsabit District, within which SNP is located, had a population of about 159,000 people in 2009 (compared to 117,800 people in 1999). About 85% of the district's population derives their livelihood from nomadic pastoralism. The main livestock kept include: camels, sheep, goats and cattle. These livestock provide milk, hides, skin and meat. No figures are available for the Marsabit district, but figures for the Turkana district indicate that the total livestock populations exceed the carrying capacity of the rangelands and it is likely that the situation is similar in Marsabit.

The mission was informed that for cattle pasturing the Omo delta plays a key role, proving grazing opportunities during the dry season, and that in that context there is obviously lively communication amongst the Daasanach community on both sides of the state boundary in the north of SNP where this community lives. To the East and South-east the area is occupied by the Gabra and Turkana communities while the Elmolo communities are to the South. The Daasanach and Gabra are predominantly nomadic pastoralists who depend on livestock as their main source of livelihood. The Turkana depend on both nomadic pastoralism and increasingly on fishing as their main source of livelihood while the Elmolo are predominantly dependent on fishing. All communities are to a large extent dependent on external food aid. Water from Lake Turkana and pastures along its shores are resources that are shared by all these communities. During the dry season, these resources, especially water and pasture, are normally in short supply leading to conflicts and skirmishes among the different communities.

Cattle rustling is also very common in the area and often leads to skirmishes. There are a lot of illegal arms in the hands of pastoralists. These are used for protection against cattle rustlers from other tribes. This exacerbates the security situation in the area. The mission was informed of the recent efforts of SNP staff to mediate amongst the pastoralists communities and acknowledges that SNP serves now as neutral ground for conflict resolution between different groups of pastoralists.

The mission notes the concerns of the Daasanach community expressed at the stakeholders' meeting at Ileret that a shrinking of the lake might cause even more conflicts amongst Dassanach and Turkana as it will be easier to pass the lake. The mission further notes the loss of valuable grazing grounds in the Omo delta could also further increase competition over grazing areas in SNP amongst the different communities.

The mission was informed that at the time of creating the park a corridor was established along Kimere river allowing local pastoralists to water their livestock but notes that currently grazing is not limited to this corridor but affects the entire northern part of the park particularly between Ileret and Koobi Fora camp, resulting in overgrazing, trampling and an increase in shrub vegetation. The mission notes that the only area which seems not affected by the grazing is the southern part in the immediate vicinity of the park headquarters. The mission was informed by stakeholders that in certain periods of the year, large numbers of livestock invade the park in search of pasture and water, resulting in competition with wildlife and that herdsmen, who often possess illegal arms, often engage in poaching of wildlife for food and cut woody vegetation to construct cattle *bomas*. The mission also notes that overgrazing of shoreline vegetation leads to shoreline degradation, which also impacts on fish breeding[28].

While pointing out that at the time of creation of SNP, local inhabitants of the surrounding areas were allowed to graze and water their stock in the entire area of SNP "in case of difficulties" (see also chapter 2), KWS staff recognize the conservation challenges of the permanent presence of livestock in the property. The mission was informed that recently KWS appointed a community warden in SNP, who had started to have discussions with representatives of pastoralist communities. As a first result of these discussions, the mission was informed that KWS was mapping out suitable grazing areas outside SNP, which could present an alternative to the pastoralist communities if access to water could be provided, for example by drilling boreholes.

The mission notes that already at the time of inscription, the World Heritage Committee expressed its concern on the grazing issue and IUCN recommended implement a project which would provide an alternative water and grazing opportunities outside the park boundaries for local pastoralists. The mission notes that several activities were foreseen in the 2002 – 2007 management plan (see also 3.4) but so have not been implemented.

The mission concludes that livestock grazing is an important conservation and management issue. While at the time of creation of SNP, grazing and watering rights were given to the local people in case of difficulties and while a certain corridor was agreed, today grazing seems widespread across almost the entire national park and throughout the year. The mission welcomes that recently a community warden was appointed by KWS who started discussions with the pastoralist communities on how to address this issue. The mission considers that as part of the process of developing the new management plan, a strategy to diminish grazing pressure in the property should be developed in close consultation with representatives of the local pastoralist communities, including by identifying grazing areas outside the property and providing them with access to water.

[28] The AfDB assessment cites reports that the Ferguson Gulf's most successful fishing season followed the removal of livestock from the area. The absence of livestock allowed the shoreline vegetation to flourish, and when inundated by rising lake level accompanying the Omo floods, the vegetation provided an ideal habitat for fish fry to flourish.

3.6 MANAGEMENT ISSUES

3.6.1 Management arrangements, staffing and budgets

All three National Parks which are part of the property are managed by KWS. SNP staff is based at the park headquarters in Alia bay. SINP is also managed by the SNP Chief Warden but some staff are based at Loyangalani, closer to SINP. The mission was explained that CINP is managed is managed by KWS park staff administratively separated from SNP. The fossil sites are managed by NMK, who has a permanently manned field station at Koobi Fora.

The extreme remoteness of the three National Parks creates serious logistical challenges. Regular supplies are brought in by plane and KWS has a plane based at Marsabit National Park. No figures were provided to the mission on the park budget. With no water available on the islands, there is no permanent presence in SINP and CINP. Both sites are patrolled by boat by the teams based on the shore, but weather conditions can make navigating the lake quite rough. Patrols are therefore dependent on weather conditions and not really effective in terms of conservation. In SNP, all KWS field staff is based at Alia Bay. While they have access to vehicles, distances to the northern part of the park are considerable and so the northern part is less patrolled. A KWS ranger camp existed in the north before at Kokoi but it has been abandoned. The mission did not receive figures on staffing, but some data of foreseen staffing are included in the management plan. These include a senior warden assisted by two wardens, one platoon of rangers and some staff in charge of community wildlife service and biodiversity. However the plan notes that many of these posts are not filled, and this still seems the case, though a community warden was appointed recently and platoon staff is fully in place. The mission notes a high rotation rate amongst KWS staff a result of the harsh living conditions and the lack of schooling facilities. The wardens on average serve for one or two years in SNP only.

NMK has a skeleton staff at Kobi Fora with a vehicle, but more staff are present when research activities are taking place. While KWS and NMK staff cooperate, surprisingly there is no formal collaboration agreement in place. Given the smaller scale of the Koobi Fora station, logistical challenges are even higher for NMK.

The mission acknowledges the challenges of managing the property due to its remoteness. It considers that an increase in institutional cooperation between NMK and KWS would be important not only to address the many practical challenges but also to ensure a better protection of both the fossil sites and the wildlife. In this context the mission emphasizes the importance of the involvement of local stakeholders, particularly of pastoralists and fishermen. Thus, the mission welcomes the recent initiative of KWS to provide a community warden as an appropriate structure to improve cooperation with and amongst local pastoralists and fishermen. It further notes that NMK knowledge on cultural heritage could help KWS to manage pastoralist issues and is crucial in the elaboration of the new management plan.

The mission notes the need to improve surveillance activities by ensuring an increased (and if possible permanent) presence on SINP, CINP and in the northern part of SNP by re-establishing the Kokoi ranger camp. The mission considers that the stability of some crucial positions like the Biodiversity Officer or Community Warden should be improved to be able to build on sustainable relations with local communities and to ensure systematic monitoring in the property.

3.6.2 Management of the fossil sites

The NMK Koobi Fora station was originally a research station, from where Richard Leakey conducted his research. The station is run by NMK and continues this research function, in cooperation with national and international universities and also is used as a field school, but is not undertaking surveillance activities in the fossil sites. In addition, the Turkana Basin Institute set up Richard Leakey runs two other research facilities in Ileret and Turkwel outside the property but in cooperation with NMK[29].

Koobi Fora also has a small museum with replicas from some of the important fossils which were found, with the originals stored at the Nairobi museum. However interpretation could be improved a lot, for example there is no explanation why the site has justified World Heritage inscription under criterion (viii). NMK maintains a database of all fossil sites in the property. Most sites have been buried after the excavations finished. Many of the important sites are also outside the property (see also chapter 4). Some of the well known fossil sites (crocodile site, tortoise site, elephant site) can be visited and are protected through buildings although there are still some challenges (erosion, bird chopping). Interpretation in these sites is minimal. Other sites are not protected or partly protected (such as the footprint site visited by the mission near Ileret, outside the property). This means that some sites are vulnerable to trampling by cattle. Some sites are so rich in fossils that fossils can be found scattered around and could easily be taken away by visitors. The mission believes that as if there will be more visitors in future, there is a need to reflect on the current management approach.

The mission notes that efforts are needed to improve site interpretation and the protection of key fossil sites.

3.6.3 Management planning

The mission was provided with a Management Plan for the planning period of 2002 to 2007. As there is no more recent version, this document seems to be in force. The mission was informed that a new management plan is under preparation.

The Management Plan covers only SNP and CINP. but appears to be the first operational five-year management plan for the area[30]. The management plan was apparently prepared by a consultant company, using an integrated approach, involving all key stakeholders including NMK. The plan seeks to achieve a three-pronged goal of environmental conservation, prehistorical/cultural preservation and sustainable development.

Park zoning is a strategy proposed in this document for optimal utilisation and conservation of the parks:

The utility zone comprises the Park headquarters with a radius of 1km, the Koobi Fora research and museum camps and Karsa Gate and the proposed gate in the north of the park. A small area of the Central Island will also be designated for fishermen's use.
The developed tourist zone comprises the areas with road circuits and the camping sites as well as shoreline areas. The zone will have a limited number of tourist facilities whose structural and aesthetic qualities are to be subjected to Environmental Impact Assessment (EIA) and as much as possible blend with the surroundings.

[29] See http://www.turkanabasin.org/
[30] Although in the evaluation of the extension proposal IUCN mentions a Management Plan for the period 2001 – 2005.

The wilderness zone occupies the northern part of the Sibiloi Park including the area around Koikai up to the Park boundaries. Also most of the Central Island should be zoned as wilderness zone save for the campsite and the fishermen shelter areas.
The conservation zone comprises all areas with valleys, the Flamingo Crater Lake in Central Island and the fragile fossils sites of the Sibiloi Park.
The closed zone includes the excavated and identified fossil sites. The zone will be closed to tourist and only research/excavation activities will be allowed. The management objective is to protect these areas from any human impact.
The buffer zone includes the areas that adjoin SNP and the aquatic section of 2-km surrounding CINP.

In the context of zoning the document mentions also the World Heritage Site boundary but without any «hard-wired» management objectives.

The plan further mentions a two-kilometre fishing exclusion zone around the lakeshore in SNP and CINP to protect fish and crocodile breeding grounds.

A crosscutting objective of the plan is the promotion of tourism and research in the area. In line with the foregoing, the plan seeks to facilitate alternative community based income generating activities that are in harmony with conservation and preservation of the parks. Finally, the plan outlines the monitoring and evaluation systems, as well as budget estimates, to guide activity implementation. The cash flow projections indicate an accumulated budget deficit of US$ 1.37 million over the plan period, which will need external sourcing.

While the importance of the site in terms of fossils is recognized, the management plan foresees no concrete management actions to conserve these sites. The mission notes that the management plan states that «Sibiloi National Park has been designated as a World Heritage Site because of its cultural properties of outstanding universal value.» This is of course not correct and the management plan does not clearly refer to the natural criteria under which the site was inscribed. Furthermore the mission notes that neither the management goal nor the objectives or the monitoring proposed reflect the World Heritage status of the site.

Finally, the mission notes most components of the plan never seem to have been implemented. The zoning seems never to have been put into place and most of the activities do not seem to have been implemented.

The mission concludes that the existing management plan seems to have been poorly implemented and notes that a new management plan is currently under preparation. The mission therefore recommends elaborating a management plan for the entire serial World Heritage site based on the Statement of OUV and the justification under criteria (viii) and (x). The mission considers that it is very important to have this new management plan jointly developed between KWS and NMK. The mission further considers that the process of developing the new management plan is an excellent opportunity to develop strategies to address main threats and management issues of the property. The mission further notes the importance of ensuring effective the implementation of the plan once it is elaborated and to foresee a regular evaluation of this implementation.

4 ASSESSMENT OF THE STATE OF CONSERVATION OF THE PROPERTY

As part of the periodic reporting exercise, a Statement of Outstanding Universal Value (SOUV) was approved for Lake Turkana National Parks at the 35 session of the World Heritage Committee. The SOUV can be found in annex 5.

4.1 STATE OF CONSERVATION OF THE OUV

The mission notes that while the conservation and management of the fossil sites can be further improved, the geology and fossil record, which justified its inscription under criterion (viii) are intact. The assessment of criterion (x) is more complicated. It is clear that the erosion of biodiversity values had already started before the time of inscription, and several species had been lost at that time. No recent data are available, but wildlife populations seem to be diminishing and at least two species seem to have disappeared since the time of inscription (Grevy's zebra and Reticulated giraffe). The status of the crocodile population in the property is also unclear.

With the information provided the mission considers, it is difficult to do a precise evaluation of the current status of the OUV and therefore recommends that a wildlife census, including also Nile crocodile, should be undertaken to establish the status of the OUV.

At the same time and as explained in detail in 3.1, the mission considers that based on the available information, the potential cumulative impacts on Lake Turkana of the Gibe II dam and the other related developments will be significant. During the filling of the dam, water levels will be reduced significantly and it is expected to take 15 years for the lake to return to its equilibrium level. Further dams are planned on the Omo River, which will extend the drop of water levels in time. Additional water abstraction from the Omo river for irrigation projects, some of which are already under construction, will further exacerbate the problem and lead to a permanent significant drop of water levels. The dam will further result in a loss of the seasonality in water inflow into the lake and is predicted to dampen the magnitude of the annual variation in lake levels significantly.

These impacts are predicted to have serious direct and indirect impacts on the OUV of the property. Falling lake levels will mean that the lake will recede beyond the boundaries of SNP (and potentially CINP) and lead to the loss of wetlands. Falling lake levels will also impact the floodplains in the property, which are crucial for fish breeding, crocodiles, water birds (including the palearctic migrants) and for the survival of some of the large mammal species. Increased salinity could also impact on wildlife. Changes in the seasonality of floods will constitute a major change to both the riparian and lake ecosystems and is predicted to have important impact on fish stocks and wildlife species which depend on the wetlands along the lake's shore.

Impacts will go beyond the areas included in the property and affect other areas, which are outside the property but ecologically very important for its integrity. Falling lake levels could dry out major fish spawning areas such as Ferguson's Gulf and the delta of the Omo river. Changes in the water regime of the Omo river will have a significant impact on the ecological and geomorphological processes of the ecosystem of the delta and the mission considers that a reduction of the productivity and surface of the delta will have a significant negative impact on the property, particularly on SNP. In

addition, loss of grazing areas in particular in the Omo delta will probably result in a further increase of grazing pressure within the property.

The mission therefore concludes that the potential and ascertained cumulative impacts of the GIBE III dam and related developments are highly likely to impact the OUV of the property and that therefore the conditions for inscribing the property on the List of World Heritage in Danger are met.

4.2 OTHER INTEGRITY ISSUES

The mission notes that the World Heritage site as currently designed faces some other challenges in terms of integrity for both criteria:

In terms of criterion (viii) many of the important fossil sites are outside the current World Heritage site and scattered on the western shore and to the north of the property. The mission was not able to review this issue in detail, but there are indications that the current design of the property does not ensure that the integrity requirements of paragraph 93 of the *Operational Guidelines* (OG) is fulfilled.

The situation is even more obvious with the conditions for integrity for criterion (x) as detailed in paragraph 95 of the *OG*: areas crucial for the lake's biodiversity are located outside the property. This is first and foremost true for the lake itself, as currently only 1 km of the lake along the shoreline of SNP and around CINP and SINP is included in the property. In general it would be important that a larger portion of the lake surface can be included in the property. In particular, areas which are recognized for their importance as spawning areas for fish, such as Ferguson's Gulf should be considered for inclusion into the property. The delta of the Omo river is also essential in ensuring the integrity of the property as it is the largest and most important entrance of freshwater and nutrients into Lake Turkana creating an intact delta ecosystem of high productivity important for fish spawning, waterfowl feeding and nesting, grazing of wild herbivores and ecological processes of the lake ecosystem.

The mission therefore recommends that a reflection should be started on the redesign of the property to include potential areas which could further strengthen the justification of criterion (viii) and (x) and the integrity of the property.

4.3 CULTURAL VALUES OF POTENTIAL OUV

As mentioned in the introduction, the property is believed to also have OUV under cultural criteria for its well documented record of human physical and cultural evolution of the last 4 million years, but at the time of inscription the Committee decided to defer the inscription as a cultural site to allow the State Party to clearly delineate the cultural part of this nomination. However, the State Party never brought back a new nomination as a cultural property.

Therefore the mission recommends that as part of the proposed redesign mentioned above, a re-nomination under cultural criteria is also envisaged as an important site for human evolution.

5 CONCLUSION AND RECOMMENDATIONS

The mission concludes that the potential and ascertained cumulative impacts of the GIBE III dam and related developments are highly likely to impact the Outstanding Universal Value of the property and therefore considers that the property should be inscribed on the List of World Heritage in Danger, in accordance with paragraph 180 (b) of the Operational Guidelines.

The mission considers that the State Parties of Kenya and Ethiopia should urgently address together the question of the impacts on the Property of the Gibe III dam and related developments, and that a SEA should be urgently conducted to assess the cumulative impacts of all developments impacting on the Omo river basin, Lake Turkana and the World Heritage site in order to identify appropriate corrective measures to ensure that the water level in Lake Turkana, as well as its seasonal variation, will be maintained at a level which is sufficient to maintain the OUV of the Property.

The mission further recalls the position of the World Heritage Committee that oil exploration is not in accordance with the World Heritage status and considers that the State Party of Kenya should urgently clarify the provision of the EIA license for ground seismic explorations on the protection of the World Heritage property, to ensure that no exploration can take place within the property. They recommend that Tullow Oil subscribes to the no-go commitment already supported by ICMM and Shell.

The mission notes the significant impacts of poaching, fishing and livestock grazing on the property and considers that these issues need to be addressed urgently and need to be reflected in the new management plan. They recommend that the following measures are taken to address these issues:

1. Conduct a detailed census of key wildlife species to establish their status and develop a baseline to monitor their recovery;
2. Strengthen the efficiency of law enforcement and surveillance based on the results of the MIST monitoring system which is being introduced in the property;
3. Establish permanent presence of KWS staff in the northern part of Sibiloi National Park, as well as on Central and South Island National Parks;
4. Increase the rotation period for the Biodiversity Officer and the Community Warden to at least three years, given the vital importance of these posts in building long-term sustainable relations with local communities and in ensuring systematic monitoring within the property;
5. Develop in close consultation with representatives of the local pastoralist communities a strategy to reduce grazing pressure in the property, by identifying grazing areas outside the property and providing them with access to water;
6. Consider with the reintroduction of the Reticulated giraffe and Grevy's zebra and the use of Giraffe and Nile Crocodile as flagship species in the communication process with local communities;

The mission also requests KWS and NMK to ensure that the new management plan addresses all 3 components of the property and covers both the biodiversity and

paleontological values in accordance to the Convention and to submit the draft management plan to the World Heritage Centre for review.

The mission further recommends that a reflection is begun on re-designing the property, to include a larger portion of the lake as well as important fossil sites currently outside the property and to consider re-nominating the property under cultural criteria, as an important site for human evolution.

6 ANNEXES

6.1 Decision 35COM 7B.3 on Lake Turkana National Parks

6.2 Terms of Reference of the mission

6.3 Itinerary and list of people met

6.4 Minutes of 1970 Marsabit County Council Meeting

6.5 Statement of OUV of Lake Turkana National Parks

6.6 Photographs

Annex 6.1
Decision 35COM 7B.3 on Lake Turkana National Parks

The World Heritage Committee,

1. Having examined Document WHC-11/35.COM/7B.Add,
2. Expresses its utmost concern about the proposed construction of the GIBE III dam on the Omo River in Ethiopia and its likely impacts on Lake Turkana, which is located downstream in neighboring Kenya and draws almost 90% of its inflow from the above river;
3. Takes note of the African Development Bank's April 2010 study of the GIBE III proposal, "Assessment of Hydrological Impacts of Ethiopia's Omo Basin on Kenya's Lake Turkana Water Levels", which concludes that the construction and operation of the dam is likely to result in a significant drop in the Lake's water levels, cessation of the current seasonal flooding pattern, losses of nutrient and mineral-rich sediments due to the upstream reservoir, rising salinity and the disruption of the lake's chemical balance, among other impacts that have yet to be quantified;
4. Considers that the GIBE III dam is likely to significantly alter Lake Turkana's fragile hydrological regime, and threaten its aquatic species and associated biological systems, which are the basis of its inscription on the List of World Heritage under criterion (x), and that this development may pose an imminent danger to the property's Outstanding Universal Value, in line with Paragraph 180(b) (ii) of the *Operational Guidelines*;
5. Urges the State Party of Ethiopia to immediately halt all construction on the GIBE III dam in line with Article 6 of the Convention requiring State Parties not to take any deliberate measures which might damage directly or indirectly the cultural and natural heritage located on the territory of another State Party, and to submit all assessments for this proposal to the World Heritage Centre, in line with Paragraph 172 of the *Operational Guidelines*;
6. Also expresses its concern about the potential cumulative impacts of the proposed GIBE IV and GIBE V dams and large-scale irrigation plans on the property's Outstanding Universal Value, and requests the State Party of Ethiopia to submit assessments for all proposed dams and associated irrigation plans on the Omo River;
7. Also requests the States Parties of Kenya and Ethiopia to invite a joint World Heritage Centre/IUCN reactive monitoring mission to review the impacts of the GIBE III dam on the Outstanding Universal Value of Lake Turkana, and to provide detailed information on plans for other hydro-electric developments and associated large-scale irrigation in the Omo region;
8. Encourages all financial institutions supporting the GIBE III dam to put on hold their financial support until the World Heritage Committee reviews this issue at its 36th session in 2012, and to take account of the Committee's decisions when deciding whether to provide such funding;
9. Further requests the States Parties of Ethiopia and Kenya to submit to the World Heritage Centre, by 1 February 2012, a report on the course of action taken in response to this decision for examination by the World Heritage Committee at its 36th session in 2012, with a view to considering, in the case of confirmation of the ascertained or potential danger to Outstanding Universal Value in light of the mission's review of the likely impacts of the GIBE III dam on Lake Turkana, the possible inscription of the property on the List of World Heritage in Danger.

Annex 6.2

Terms of Reference of the mission

Lake Turkana National Parks are constituted of Sibiloi National Park, the South Island and the Central Island National Parks, covering a total area of 161,485 hectares located within the Lake Turkana basin whose total surface area is 7 million ha. The Property was inscribed on the World Heritage List in 1997, under criteria (viii) for is geology and fossil record from the Pliocene and Holocene periods as well as presence of recent geological process represented by volcanic erosional and sedimentary land forms and under criterion (x) for its diverse habitats resulting from ecological changes over time inhabited by diverse fauna.

At its 35 session, the World Heritage Committee expressed its utmost concern about the proposed construction of the GIBE III dam on the Omo River in Ethiopia and its likely impacts on Lake Turkana, considering that the dam is likely to significantly alter Lake's fragile hydrological regime, and threaten its aquatic species and associated biological systems. It noted that this development may pose an imminent danger to the property's Outstanding Universal Value, in line with Paragraph 180(b) (ii) of the *Operational Guidelines* and requested the States Parties of Kenya and Ethiopia to invite a joint World Heritage Centre/IUCN reactive monitoring mission. (Decision 35COM 7B.3, in annex).

The objective of the monitoring mission is to evaluate the impacts of the GIBE III dam on the Outstanding Universal Value (OUV) of Lake Turkana National Parks, as requested by the Committee at its 35th session (). The mission will also assess the overall state of conservation of the property and other factors affecting its OUV, in particular upstream irrigation plans, oil and gas concessions and exploration, major declines in wildlife populations and cattle encroachment within the parks.

In particular, the mission should address the following key issues:

1. Review the direct, secondary and cumulative impacts of the GIBE III dam, as well as other existing and planned dams such as GIBE I, II, IV and V and large scale irrigation plans in the Omo region, and determine whether these activities constitute a potential danger to the property's OUV, taking into account proposed mitigation measures.
2. Clarify the status of oil and gas concessions and exploration within the property, and the likely impact of these activities on the parks' OUV in the light of the Committee's 'no go' policy on oil and gas developments within World Heritage properties.
3. Review based on available data the status of wildlife populations, poaching and the level of cattle encroachment within the parks.
4. Review the management effectiveness of the different components of the property (Sibiloi, Central, and South Island National Parks), in particular the existence and implementation of management plans, available staffing and budgets of the management authority and their capacity to effectively conserve the Outstanding Universal Value of the property.

The following documents should be submitted by the State Parties of Ethiopia and Kenya to the World Heritage Centre by end November 2011 to enable the mission team to prepare for the mission:

a. All existing assessments for the GIBE III dam and other hydro-electric developments on the Omo River, including GIBE IV and V, as well as any plans or assessments for large-scale irrigation in the Omo region, in line with

paragraph 172 of the *Operational Guidelines*. Maps of the location of proposed dams and irrigation projects should also be provided.

b. Maps of any oil and gas concessions and exploration activity within or adjacent to the property, together with details on the terms of these concessions, including any prior environmental assessments for exploration activities.
c. Any recent and past wildlife surveys, data on poaching and on the level of cattle encroachment within the parks.
d. The most recent management plans/ management effectiveness assessments for the property's component sites, including details on staffing and budgets.

The mission team should be able to conduct the necessary field visits to the property to make these assessments. It is important to note that since the area where the property is situated is currently classified Phase IV in on the UN security scale, certain security considerations have to be taken into account in the organization of the mission. The State Party is therefore requested to contact the UNESCO World Heritage Centre in this respect.

The mission team should further hold consultations with the Kenyan and Ethiopian authorities at federal and state levels, as well as with a range of relevant stakeholders, including researchers, conservation NGOs, dam specialists, oil and gas industry representatives, and key community groups.

Based on the results of the above-mentioned assessment and discussions with the State Party representatives, the mission team will develop recommendations to the Government of Ethiopia, Kenya and the World Heritage Committee to conserve the OUV of the property and improve its conservation and management.

The mission team will prepare a concise mission report on the findings and recommendations of the reactive monitoring mission following the standard format (IUCN to lead). A first draft should be submitted to the IUCN World Heritage Programme no later than six weeks following the mission.

Annex 6.3
Itinerary and list of people met

14 March	
	Arrival of UNESCO/IUCN delegation to Nairobi Pick up in the airport Accommodation in the hotel in Nairobi
15 March	
	Meeting with Director General National Museums of Kenya and NMK staff Meeting with the Permanent Secretary of the Ministry for National Heritage Meeting at the Ministry for Energy Meeting at the Ministry of Foreign Affairs Meeting at UNESCO National Commission Technical meeting with the oil company Tullow Night in Nairobi
16 March	
	Technical meeting at the National Environmental Management Agency (NEMA) on the EIA for Gibe and the oil explorations Meeting with the Director of Kenya Wildlife Service Stakeholders meeting with Tullow, Ministries, experts, IUCN, NMK staff, KWS staff, NGO Night in Nairobi
17 March	
	Travel to Sibiloi National Park by Helicopter Meeting with acting warden Sibiloi National park at Sibiloi Park Headquarters, and with staff KWS and NMK Visit to various fossil sites Travel to Kobi For a (NMK Field station) Night in Kobi Fora
18 March	
	Visit to Kobi Fora Museum Visit to various fossil sites Walk on lake shore and Kobi For a peninsula Night in Kobi Fora
19 March	
	Visit to Sibiloi National Park (eastern and southern part) Mission team works on recommendations Night in Kobi Fora
20 March	
	Visit of the northern part of Sibiloi National Park Visit of footprint site Stakeholder meeting in Ileret Night in Kobi Fora

21 March	
	Helicopter flight from Kobi Fora along lakeshore to Loiyangalani Stakeholder meeting in Loiyangalani Visit to South Island Return to Nairobi by Helicopter Preparation of debriefing meeting
22 March	
	Breakfast meeting with Dr Richard Leakey Debriefing meeting on the mission with UNESCO, NMK and KWS staff Meeting at the Ministry of Foreign Affairs with representatives of the Ministry of Energy, Environment and Water and the Office of the President Meeting with the Prime Minister in presence of Permanent Secretary of National Heritage and Director of KWS
	Departure to Paris

6.4 Minutes of 1970 Marsabit County Council Meeting

GEH/PRP

23rd June, 1970

The Commissioner of Lands
P.O. Box 30089,
Nairobi.

Dear Sir,

Lake Rudolf National Park

Enclosed herewith please find a copy of a self-explanatory letter which has already been sent to you. The National Parks have also written to you previously on this subject, and it would now be greatly appreciated if you could let us have your confirmation that you are going ahead with the process of setting the land apart for the purpose of a National Park.

Yours faithfully,

P. M. Olindo
Director

PHO/HD

GA..22/J/Vol.I/86

Cffice of the District Co ssioner,
Eastern Province, Ma.rsa.bit,
P,O .MARS!\.BIT .

15th June, 1970

The Director,
Kenya National Parks,
P.O. Box *2.Cf76,*
NAIROBI.

REF: lAKE RUOOLF NATIONAL PAR.IC;

Enclosed please find extracts of Minutes 3/70 .31ld 44/70 a meeting held by my Council on 4/2/70 a.rtd 23/3/70 respectively concerning the setting aside of Eastern Lake Rudol-f as a National Parle.

Please ahead with the Gazettement and 'remember i.11clude tlle fojlling conditions as agreed:-

1. I.oca:Jj People will have access to •.. ater and grazing in tj,mes of difficulties.
2. Counqi]. dll. have right o-r access-tl' Lia..ke sho:qe for any development it may deem necessary for the bene its of 1-ia.rsa.bit people.

NATIONAL PARKS
GEN/PRP
JUN 1970
RECEIVED

(E. W. Maina)
Chairman,
MARSABIT COUNTY COUNCIL,
MARSABIT.

EWM/DDG.

Certified true copy of the original document

Kenya National Archives and Documentation Service
P.O. Box 49210
00100—Nairobi

21/3/2012

File Ref. No. KW/13/24

c.c.

The Permanent Secretary,
Ministry of Tourism & Wildlife,
NAIROBI.

The Provincial Commissioner,
Eastern Province,
E M B U.

The Warden,
Meru National Park,
MERU (KINA)

The Commissioner of Lands,
NAIROBI.

The Clerk,
Maraa.bit 0?unty Council,
1-f.!RS&BIT•

MJK. L.iJ?O: WCE-RUDQil NATIONAL PARK-lND GAl.fE RE5ERVE.

It "Was disclosed that there was a slight 9-is-aree.'llent when the lTational Pe.rks Warden an!i CoWtcil Representativas. i.e. Chairman E. Maina, Vice Chairman Dalache Godana. and Cr. Ibrahim Raghe a physical tour of the area.

As a result of this, a eeting t. as helc in the District Commissioner's office on 2oth March, and the folloying was agreed:-

11That the low inhabitants of the au_-rrounding areas areas of Nai?iona1 Park will be given access in that area to gr;aze a.nd water stock in case of d.!Miculties.

Secondly, that the Cotmcil should bava the r.ight to acce Js t:> the Lake shores wherever the lalce boundry is enclosed by the National Parks, and thereupon(to underltake e.ny sort of activcty which niay benift ,;the Coun f l"•

AP.lR!' OF &STEHN lAKE RDDOL!'<NATIONL GAME

The Chairman e lained that a N t nal Park Officer Mr.Jrndd.n.s who was present at the Full Cuncil Meeting was .Fdy ow to tour the area which WiS jptended for settl.llg e. part the National Game Reserve. Chairman reminded Councl that Ozi. Dalacbe. Godp.na and Cr. Ibrahim Raghe \Jere sele ed to s.ccompany the team on Council's behalf•

The Chaiman fur.t.her alloYed ¥..r. Jenkins to address th e Gouncil.

Mr..-'J'ankins gr9eted memb t He ·. ent on to say that (he area in question for th ational Game Reserwes has· been observed by recol)nissance plane and 1mfolded a ar.map for observation by douncil.

Arter discussion it w.s therel!ore resolved•-

Resolution No. U70

That the areas ms.rked on the map l:le approved and the gazettement of the area approved by Council.

In the Chair Or. E.W. 'Ha.ina
Proposed – Or. D. Goda..na
Seconder – Cr. Ge.br.rel Aboran.

This loiS a ag;reed subject to the local residents be.i.Dg given the rifbt of access to water a.nd grazing in side the Game Reserve an& also National Parle and e. clause to this ef.fect be :inserted uhen this is going to be gazetted.

Carried unanimous1y

The clerk further r-eouested the Game Warder to SUpply te Gounpil with a map with boundaries marked tHereon} the Warder agreed.

137

GEN/PRP 18th June, 1970.

Chief Conservator of Forests,
[illegible]
[illegible]
[illegible]

For the attention of J. P. W. Logie, Esq.

I enclose herewith please find a self-explanatory letter from Mr. Remnant of [illegible] Estate, dated 3[illegible], 1970, in which he recounts [illegible] of your [illegible] charge of the [illegible].

[illegible] of [illegible] is [illegible] to [illegible] is to [illegible] co-operation [illegible] to [illegible] co[illegible]serve [illegible] Us.

Perhaps you might consider getting in direct contact with Mr. Remnant, in which case we [illegible] very much appreciate a copy of your letter to him.

P. M. Olindo
Director

c.c. Mr. H. F. Remnant,
[illegible] Estate,
P.O. Box [illegible],
[illegible],
Kenya.

PMO/SG.

136

GEl1/Pi?..P 18tL June, 1970.

The Comnissioncr of ""ids,
Dep emoi LanLS,
?.O. Box 30089,
Nairobi.

for the attention of F. L. Charnley. Esq.

LAKE RUDOLF NATIONAL PARK *PlW* GAUE RESERVE

Hereunder please find an e».-tract of the Hinutes of the Harsabit County CoWlcil of an Extra Ordi.lary Meeting held on 23rd Harch, 1970, frvm which you ;.iill note that it is tilerTish of the Council by the appropriate Resoluion cited, to request the Trustees of -:nc :Ia--cio:1al Parks of Kenya to assume rcs!=Jonsibili-t;y of an araa on the east shore of Lake Rudolf commencing approximately frow Illeret woato Alia Say.

It ;.Jill ...le ea1.:ly c::pp:::>eciated, i£ on the basis of 1:his Hinute J:lo. 44/70, you viou.ld ins·titu;:e the ?rocess of setting the land apart. I have 0::1 a l)revious occasion sent to your office the approximate description of the urea i:lvolved.

Please advise us what you intand to do.

P. H. Olinde
i:lirector

"Minute 44/70. LAKE RUDOLF NATIONAL PARK AND GAME RESERVE

It Has cisclosed tnat tf:rc as a sliht di.s- azr enent ';Thn the !:atior.al ?a:::-k:;; :larden and Council F.epresentative:::;. i.e. Chairman S. ::aina, Vice Chairman Dalacna Godar.a und Cr. Ibr lim Pe made a physical tour o£ the crca.

,\s a result of tois, a mee tiog Ha3 oeld in the Disrr-ict Lol.thlissioner's office on 20th l-fa.rch, and the rollowin as aBreed:-

'Tnathe local ir.-t 1ts of the cu:::- ounding areas of National Park vril.l be iven access i:i tbat area to graze an-i Hater stock in case of difficulties.

Secondly, that the Council should have the right of access to the Lake shores \-'herever the Lake boundary iS enclosed by the National Parks, and th£=reupon to Wldertake any sort of activity .;hich !l'.ay benefit the CoWlcil'. "

PMO/SG.

Annex 6.5
Statement of OUV of Lake Turkana National Parks

Brief synthesis

Lake Turkana National Parks are constituted of Sibiloi National Park, the South Island and the Central Island National Parks, covering a total area of 161,485 hectares located within the Lake Turkana basin whose total surface area is 7 million ha. The Lake is the most saline lake in East Africa and the largest desert lake in the world, surrounded by an arid, seemingly extraterrestrial landscape that is often devoid of life. The long body of Lake Turkana drops down along the Rift Valley from the Ethiopian border, extending 249 kilometers from north to south and 44 km at its widest point with a depth of 30 meters. It is Africa's fourth largest lake, fondly called the Jade Sea because of its breathtaking color.

The property represents unique geo-morphological features with fossil deposits on sedimentary formations as well as one hundred identified archaeological and paleontological sites. There are numerous volcanic overflows with petrified forests. The existing ecological conditions provide habitats for maintaining diverse flora and fauna.

At Kobi Fora to the north of Allia Bay, extensive paleontological finds have been made, starting in 1969, with the discovery of *Paranthropus boisei*. The discovery of *Homo habilis* thereafter is evidence of the existence of a relatively intelligent hominid two million years ago and reflect the change in climate from moist forest grassland when the now petrified forest were growing to the present hot desert. The human and pre-human fossils include the remains of five species, *Australophithecus anamensis*, *Homo habilis*/*rudolfensis*, *Paranthropus boisei*, *Homo erectus* and *Homo sapiens* all found within one locality. These discoveries are important for understanding the evolutionary history of the human species.

The island parks are the breeding habitats of the Nile crocodile *Crocodylus niloticus*, the *hippopotamus amphibious* and several snake species. The lake is an important flyway passage and stopover for palaeartic migrant birds.

Criterion (viii): The geology and fossil record represents major stages of earth history including records of life represented by hominid discoveries, presence of recent geological process represented by volcanic erosional and sedimentary land forms. This property's main geological features stem from the Pliocene and Holocene periods (4million to 10,000 years old). It has been very valuable in the reconstruction of the paleo-environment of the entire Lake Turkana Basin. The Kobi Fora deposits contain pre-human, mammalian, molluscan and other fossil remains and have contributed more to the understanding of human ancestry and paleo-environment than any other site in the world.

Criterion (x): The property features diverse habitats resulting from ecological changes over time and ranging from terrestrial and aquatic, desert to grasslands and is inhabited by diverse fauna. *In situ* conservation within the protected areas includes threatened species particularly the reticulated giraffe, lions and gravy zebras and has over 350 recorded species of aquatic and terrestrial birds. The island parks are the breeding habitats of the Nile crocodile, *Crocodylus niloticus*, the *hippopotamus amphibious* and several snake species. Furthermore, the lake is an important flyway passage and stopover for palaeartic migrant birds, with the South Island Park also being designated as an important bird area under Birdlife International. The protected area around Lake Turkana provides a large and valuable laboratory for the study of plant and animal communities.

Remoteness has preserved the area as a natural wilderness. On the grassy plains yellow speargrass *Imperata cylindrica*, *Commiphora sp., Acacia tortilis*, and other acacia species predominate along with *A. elatior*, desert date *Balanites aegyptiaca* and doum palm *Hyphaene coriacea* in sparse gallery woodlands. *Salvadora persica* bush is found on Central and South Islands. The muddy bays of South Island have extensive submerged beds of *Potamogeton pectinatus* which shelter spawning fish. The principal emergent macrophytes in the seasonally exposed shallows are the grasses *Paspalidium geminatum* and *Sporobolus spicatus*.

Integrity

The property covers a total area of 161,485 ha. The area around the property is sparsely populated due to its isolated location, inadequate freshwater and national protection status. It is an important habitat for hippopotamus and the world's largest colony of crocodiles (and the largest Nile crocodile breeding ground in the world). Physical evidence through scientific studies indicate the area's continued support for habitation of flora and fauna of diverse species over millions of years to the present. In addition, volcanic eruptions and extensive lava flows, geological faulting within the Great Rift Valley, and the formation of sedimentary deposits have assured preservation of fossil remains, which are significant in understanding the history of life especially human evolution. The adjacent Mount Kulal Biosphere Reserve serves as a water shed for the Lake Turkana Basin and as a wildlife dispersal area. It thereby assures the protection of the biological and natural processes making it an important site for avian habitation and migration, particularly water birds.

The area is managed under two State Acts ensuring protection, conservation and sustainability of the environment and addressing for example. post-archaeological excavation, illegal grazing, poaching and over fishing.

Protection and management requirements

The property enjoys the highest level of legal protection by both the Kenya Wildlife Act cap 376 as well as the Antiquities and Monument Act cap 215 (currently the National Museums and Heritage Act of 2006) under Kenyan legislation. Sibiloi National Park was legally designated as a national park in 1973 whereas South and Central Islands were legally designated in 1983 and 1985 respectively. The property is co-managed by Kenya Wildlife Service (KWS) and the National Museums of Kenya (NMK).

Following the extension of the property in 2001, a first management plan was developed for the period of 2001 to 2005. The long term planning foresees the development of an integrated management plan for the area. Formalization of the existing collaboration between KWS and NMK and other stakeholders through a Memorandum of Understanding will be necessary for the successful implementation of the plan.

Challenges and potential threats have been identified: these include severe droughts, livestock encroachment into the property, impacts from climate change, poaching, siltation, receding water level, human-wildlife conflicts and poor infrastructure in the area. Mitigation measures and strategies are required for the sustainable long-term management of the property and the development of an integrated management plan taking into account reforestation, law enforcement, education and awareness-raising, alternative livelihoods, resource mobilization and appropriate forms of infrastructure development (roads, electricity, telecommunication, etc.).

Annex 6.6 Photographs

Coast line of Lake Turkana in the north of SNP

KWS headquarters of SNP at Alia Bay

Floodplains of lake Turkana in SNP

Coastal floodplains south of Koobi Fora

Fossil remains of a giant elephant species

Shelter of one of the fossil sites

Fossil remains are scattered around the landscape

Fishermen drying fish on SINP

Goats in the park

Cattle in the park

Stakeholder meeting in Loyangalani

Mission team received by the Prime Minister