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MISSION REPORT / RAPPORT DE MISSION

Ngorongoro Conservation Area (United Republic of Tanzania) (N 39)
Zone de conservation de Ngorongoro (République Unie de Tanzanie) (N 39)

01 – 06 December 2008 / 01 – 06 décembre 2008

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UNESCO World Heritage Centre - IUCN

Mission Report

***Reactive Monitoring Mission
Ngorongoro Conservation Area (United Republic of Tanzania)***

1-6 December 2008



Guy Debonnet (World Heritage Centre)

Ed Wilson (IUCN)

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LIST OF ACCRONYMS

EIA	Environmental Impact Assessment
FZS	Frankfurt Zoological Society
GMP	General Management Plan
MOU	Memorandum of Understanding
NCA	Ngorongoro Conservation Area
NCAA	Ngorongoro Conservation Area Authority
OUV	Outstanding Universal Value
SEF	Serengeti Ecosystem Forum
SoOUV	Statement of Outstanding Universal Value
TANAPA	Tanzania national Parks
TAWIRI	Tanzania Wildlife Research Institute
WD	Wildlife Division

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EXECUTIVE SUMMARY

In 2007, a joint World Heritage Centre / IUCN mission visited Ngorongoro Conservation Area (NCA) and World Heritage property and developed a number of recommendations to address important threats to its Outstanding Universal Value. At its 31st Session (Christchurch, 2007) the World Heritage Committee requested the State Party to implement the recommendations of the mission and requested another mission be undertaken to the property in 2008 to review their the progress in implementation. This joint UNESCO/ IUCN reactive monitoring mission visited the property from 1 to 6 December 2008. The mission reviewed the progress in the implementation of the recommendations of the 2007 monitoring mission and its findings are documented in the current report.

The mission team concludes that that, while the Outstanding Universal Value of the property has been maintained, it is under increasing pressure and NCAA is facing many important management challenges to maintain the integrity of the property.

While some progress was made on certain issues, the mission is concerned that many of the recommendations of the 2007 mission are not yet fully implemented and in some cases, decisions have been made going against the recommendations.

The mission considers that the most important conservation challenge for the property are to achieve the two main management objectives as stated in the 2006 General Management Plan: “to maintain a dynamic multiple land-use system, which perpetuates the historic balance of people and nature” whilst at the same time “to conserve the biodiversity and ecological integrity of the Serengeti ecosystem and Ngorongoro highlands”. The mission considers that human pressures on the ecosystem, from an increasing resident population, leading to over grazing and increasing agricultural use of the land, and from increasing tourism pressures are already affecting the integrity of the property and threatening its Outstanding Universal Value. Urgent action is therefore needed to address both issues.

To address the tourism pressure issue, it is important that all eight recommendations of the EIA on traffic congestion in the crater are implemented urgently. The World Heritage Centre and IUCN believe that visitor pressure in the crater can only be managed by putting a clear maximum limit on the number of vehicles allowed in the crater per day (proposed at 100 in the EIA). A transparent reservation system should also be put in place. The measures should be framed as part of an overall tourism strategy for the property to guide the further development of the tourism industry, prioritizing the quality of the tourism experience, not the quantity of visitors and tourism facilities. The mission recommends that this strategy is developed for the entire Serengeti Ecosystem in conjunction with Tanzania National Parks, as part of the recently signed Memorandum of Understanding.

The mission team recommends that the issue of the population pressure has to be addressed based on the ecological carrying capacity of the system and taking into account the needs of the Maasai communities. They reiterate the recommendation of the 2007 mission to carry out a comprehensive scientific study on the carrying capacity of the property and the impacts of the resident populations. Based on the results of this study a dialogue should be started between NCAA, Maasai community leaders and other stakeholders to develop a joint strategy to address this issue, including the issue of increasing agricultural use in the property. The mission anticipates that if this issue is not

addressed urgently and if the current degradation patterns are not stopped, the Outstanding Universal Value of the property will be jeopardised.

1. BACKGROUND TO THE MISSION

The Ngorongoro Conservation Area (NCA) was inscribed on the World Heritage List in 1979 under criteria (vii), (viii), (ix) and (x).

The property is contiguous with the Serengeti National Park (1,476,300 ha), also inscribed on the World Heritage List, the Maswa Game Reserve (220,000 ha) and the Loliondo Game Controlled Area (400,000 ha). Together they constitute the Serengeti ecosystem. The main feature of the property is the Ngorongoro Crater, the largest unbroken caldera in the world, which is home to a population of some 25,000 large animals, largely ungulates alongside the highest density of mammalian predators in Africa. This spectacular concentration of wildlife in a stunning setting constitutes one of the greatest natural wonders of the planet. The area also includes the Empakaai Crater, Laetoli and Olduvai Gorge, famous for their geology and associated palaeontological studies. The variations in climate, landforms and altitude have resulted in several overlapping ecosystems and distinct habitats, with short grass plains, water catching highland forests, scrub heath, montane long grasslands and high open moorlands.

NCA has an important resident population of Maasai, nomadic cattle herders, who inhabited the Serengeti ecosystem long before the protected areas were created. To accommodate these populations, the Conservation Area was created as a multiple use area, equivalent to IUCN category VI (Managed Resource Protected Area).

Since 1999, the World Heritage Committee has noted ongoing threats to the integrity and values of the property from road works, illegal agricultural encroachment, invasive species (in 2001) and concerns surrounding vehicular traffic (since 2002).

At its 30th session (Vilnius, 2006), the World Heritage Committee expressed its concern regarding a number of issues in the property, in particular: (a) the issue of local communities within the property and the associated impacts of cultivation, (b) problems of road developments and traffic congestion, (c) planned lodge developments, in particular on the crater rim, (d) invasive species, (e) infrastructure development within the conservation area and (f) the lack of tourism development strategies and requested a joint monitoring mission to the property. In 2007, a joint World Heritage Centre / IUCN mission visited the property and developed a number of recommendations to address these issues. At its 31st Session (Christchurch, 2007) the World Heritage Committee requested the State Party to implement the recommendations of the 2007 mission and requested another mission be undertaken to the property in 2008 to review their progress in implementation. The State of Conservation report summarizing the conclusions of the mission, which was presented to the Committee at its 31st session, can be found in Annex A. The relevant decision 31 COM 7B.2 of the World Heritage Committee can be found in Annex B.

The joint World Heritage Centre / IUCN mission visited the property from 1-6 December 2008. The main objective of the mission was to review the status of implementation of the recommendations of the 2007 mission. The Mission Team comprised Guy Debonnet, of the UNESCO World Heritage Centre, and Ed Wilson, a consultant representing IUCN. The detailed mission schedule together with the list of people met by the mission team can be found in Annex C. The mission team reviewed the progress on the implementation of the Recommendations of the 2007 Reactive Monitoring Mission in a meeting with the senior staff of the Ngorongoro Conservation Area Authority (NCAA) at the start of the current mission, as well as during the various field visits and held a very informative meeting with the leadership and members of the Maasai community.

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

The Ngorongoro Conservation Area (NCA) and the World Heritage property is managed by the Ngorongoro Conservation Area Authority (NCAA), which is an autonomous body with its own Board of Directors established under a separate ordinance. However the NCAA reports to the Ministry of Natural Resources and Tourism, which has the ultimate responsibility for this property.

The Ngorongoro Conservation Area covers 8,292 square kilometres. The NCA was established in 1959 by the NCA Ordinance No 413 of 1959 as a multiple land use area, designated to promote the conservation of natural resources, safeguard the interests of NCA indigenous residents and promote tourism. The NCA is a unique protected area in Africa where conservation of natural resources is integrated with human development. The key aims of the NCA are to: (a) conserve natural resources; (b) promote tourism; and (c) promote local communities within the conservation area. Management within the NCA is implemented in accordance with a General Management Plan, which was approved by the Board of Directors of the NCAA on 15th April 2006.

3. IDENTIFICATION AND ASSESSMENT OF THREATS TO THE STATE OF CONSERVATION OF THE PROPERTY

The threats to the State of Conservation of the property were assessed in detail by the 2007 mission and are detailed in the mission report. The 2007 mission report can be consulted on the website (<http://whc.unesco.org/en/list/39/documents/>). In accordance with its terms of reference, the current mission concentrated on reviewing the implementation of the recommendations of the 2007 mission. Progress in relation to these recommendations is assessed as follows.

3.1 Continue and complete by June 2008 the process of voluntary relocation of immigrant populations;

The total immigrant population in NCA in 2006 was estimated at 2,000 people. This figure was established through a peer assessment process, based on the assessment of languages and lifestyles. To facilitate the voluntary relocation of these populations, NCAA identified a relocation area at Olyondo Sambo, 70 km north of the property. The relocation process has included the provision of infrastructure at the relocation site, including building of a school, dispensary, police station and access road and the provision of agricultural land (2 acres per individual). At the time of the 2007 mission, it was noted that already 223 immigrants had moved voluntarily and that the process was to be completed by June 2008.

The NCAA informed the mission team that the process had unfortunately not yet been completed. So far only 150 immigrant households totalling 538 people are reported to have been relocated through a voluntary process, but NCAA were unable to determine whether these were all immigrants or a mixture of immigrants and the 64,000 resident Maasai (2007 census) who periodically move into and out of the NCA. NCAA also noted that some immigrants have left the property on their own initiative to their former villages, rather than moving to the relocation area but that no new immigration was observed into the property. The mission was therefore unable to establish a clear view on the size of the immigrant population still living in the property.

NCAA indicated that the relocation process has been hampered by a lack of willingness of the targeted populations and that it would require more time than anticipated at the time of the 2007 mission to complete the programme. Since the process was voluntary it plans to carry out an awareness campaign designed to increase the number of people registering for voluntary relocation. Additional areas available for relocation also need to be identified. They expressed hope to make “substantial progress” by 2011.

In a meeting with the mission team, Maasai representatives, stated that relocation was only partially voluntary and requested a “new and more transparent process”.

The mission team understands the complexity of this voluntarily relocation process. While the number of people targeted are relatively small (2000 people compared to the 64,000 resident Maasai population), the mission believes it is extremely important to dissuade new immigration into the property. At the same time, it is a prerequisite to address this issue before entering into a discussion on the impacts by the resident Maasai population.

The mission therefore recommends to accelerate the process of voluntary relocation of immigrant populations, lodge staff and NCAA staff to areas outside of the NCA in close collaboration with community leaders and representatives of various stakeholders.

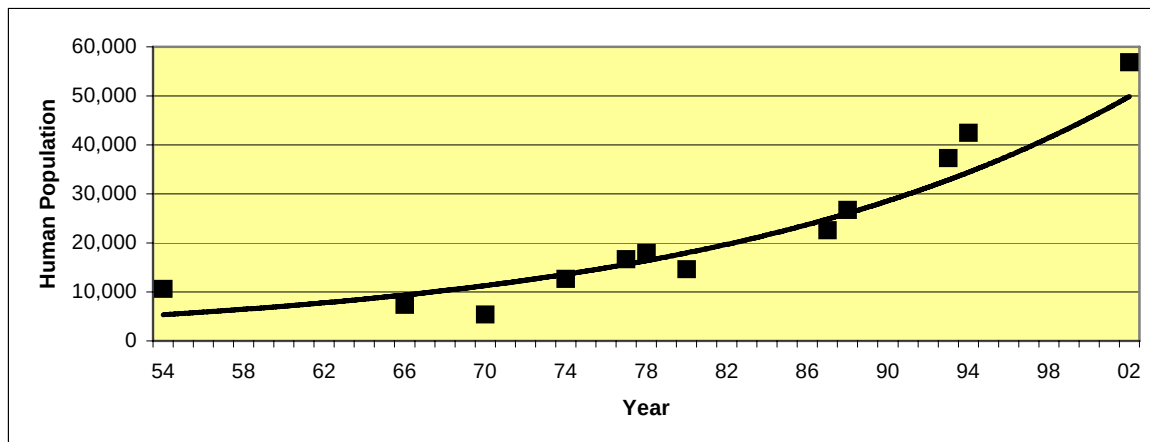
3.2 Carry out and complete by June 2008 a census and carrying capacity study, based on the needs of the Maasai population and an assessment of the ecological impacts of the populations

Since the creation of the conservation area in 1959, the resident population in NCA has continued to grow (see graph below). At the time of inscription of the property on the World Heritage List in 1979, the resident population in the property was estimated at less than 20,000 people. Based on a census conducted in 2007, the resident population is now estimated at 64,000 individuals, an increase of 4,000 compared to the 2002 census.

The resident population is mainly composed of Maasai pastoralist. Historically cattle have been the basis of their economy, livelihoods and food security and clearly there is a possible competition for grazing lands between wildlife and cattle. A carrying capacity study conducted a few years ago estimated that the total carrying capacity for large herbivores could be evaluated at 254,000 large herbivore units. Based on the present wildlife estimates and an assessed need of 8 head of cattle per individual, the carrying capacity of the NCA is estimated at 25,000 pastoralists.

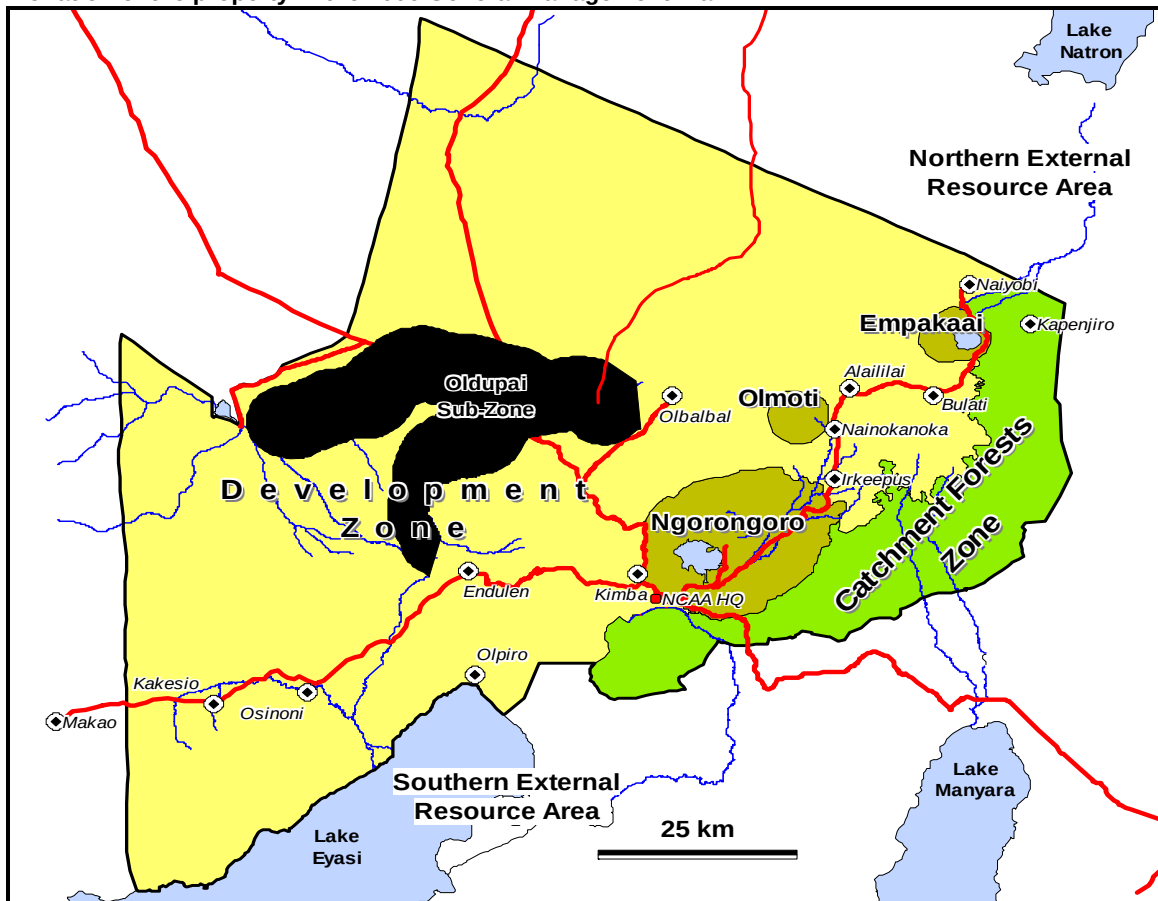
However, it is clear that this figure is contested by the Maasai community. In the document prepared for the meeting with the mission team, the Maasai community representatives challenged the concept of carrying capacity in dynamic rangeland ecosystems by stating that “according to the new rangeland studies [it is] not possible to establish [carrying capacity] in any fixed manner.” The document prepared by the Maasai community also contends that there are no signs of “significant ecological damage to the area from overuse [...] by local communities although there have been above 50,000 people in the area for decades.”

Human population growth trend in the NCA between 1954 and 2002 (2006 General Management Plan)



The GMP foresees several management zones in the property: the craters zone with Ngorongoro, Olmoti and Empakaai, the catchment forest zone and the development zone with the Olduvai subzone (see map overleaf). Grazing is allowed without restrictions in the development zone (with the exception of some areas where cattle are naturally excluded during parts of the year by the calving wildebeest). In the catchment forest zone, seasonal grazing is allowed from July to December whilst in the Olmoti and Empakaai it is allowed during early rains (July to December and February to April). This means that effectively, grazing is only prohibited on in the Ngorongoro Crater itself.

Zonation of the property in the 2006 General Management Plan



One of the main features of the property is the spectacular migrations of animals between the Serengeti plains and areas in the property. While grazing activities for the moment do not seem to impact on the annual wildebeest migration, there is recognition that grazing might impact other migration routes, such as the route between the Ngorongoro crater and Serengeti, which is used by the remaining black rhino population. Efforts are currently underway to re-open these corridors by negotiating agreements with local Maasai communities. This important work is supported by the Frankfurt Zoological Society.

In spite of the considerable population increase inside the property, it is important to note that numbers of cattle have remained more or less stable since the 1980s, resulting in a substantial decrease in livestock per capita. This is reported to be related to diseases and declining water and pasture availability. As a result, Maasai also shifted away from cattle to small ruminants, primarily goats.

While there might be some discussion on the exact livestock numbers the property can cope with, in the view of the mission team, it is clear that the carrying capacity of large parts of the property has been already surpassed. Many areas visited by the mission team are definitely overgrazed, in particular around the villages and water points.

Parallel to the decrease in numbers of livestock, there has been an increasing area of the NCA that is used for subsistence agriculture. While agriculture used to be prohibited at the time of inscription of the property, in 1992, the Government decided to temporarily lift this ban, taking into account problems with food security. Today, while cultivation remains legally prohibited in the NCA, many households have of late diversified their economic activities to include cultivation in order to compensate for decreasing livestock production. The GMP states that in 2004, Naiyobi and Kapenjiro villages depended on crop production as the second major income generating activity after livestock production. According to the GMP, agriculture is now common in the entire pastoralist development zone, which runs from the north-eastern highlands, through the woodlands between Endulen and Kakesio to the edge of the Serengeti and Sale Plains. This strip covers 4,000 sq km, 48% of the total area of NCA.

In the document prepared by the Maasai community for its meeting with the mission team, the Maasai representatives argued that "subsistence agriculture is [an] absolute necessity for the survival of people in the area."

The mission team was able to observe the increasing area of agricultural land use in the property around Endulen, Nainokanoka and Naiyobi, and even on the steep outside flanks of the Empakaai crater. The mission was also able to observe that the agricultural techniques used are very basic and result in soil erosion and a rapid degradation of the land under cultivation, creating the need for further increases in cultivated areas.

While cultivation is still regarded as an illegal activity in the property, the GMP foresees no interventions to curb it or manage it. This means that while it is officially prohibited, cultivation is in reality tolerated without restrictions in the development zone, without any measures in place to manage these pressures. Efforts have been made to ban agriculture from the catchment forest zone, and while these have been successful in a large part of the forest, the mission was able to observe large tracts of forest converted into agriculture around the Empakaai crater.

The mission team is extremely concerned by the increased numbers of resident populations and their impact on the natural resources through agriculture and overgrazing on the integrity of the property. The mission team is of the opinion that these

impacts constitute the most important and growing threat to the Outstanding Universal value of the property. While at the time of inscription, the Maasai populations living inside the property were practicing a traditional lifestyle, based on semi-nomadic pastoralism, this is no longer the case today. Populations have increased beyond the carrying capacity of the property and lifestyles have changed, with most Maasai today resident in the growing village centres in the property and with traditional pastoralism being replaced by a mixed economy based on livestock rearing (mostly small ruminants), subsistence agriculture and other commercial activities. It is clear that this trend is not sustainable. ***Therefore the mission considers that the issue of the impact of resident populations on the values of the property needs to be addressed urgently to avoid a further degradation and eventually loss of its Outstanding Universal Value.***

However, the mission team recognizes that this issue is very complicated and that no easy solution is available. It further recognizes the traditional rights of the local communities to the area and considers that a solution can only be sustainable if developed in close consultation with them. It understands that this will be a long and difficult process but considers that it is extremely urgent to start this process.

Obviously there are widely differing views concerning the carrying capacity of the NCA and the NCAA needs to proactively deal with the technical/scientific and community awareness/engagement challenges it faces with regard to the “carrying capacity” (in terms of the demands placed on the natural environment by its human, domestic livestock and wildlife populations) of the NCA and the cumulative impact of all of these populations on the Outstanding Universal Value of the property.

The mission considers that any discussion has to be based on a scientific assessment of the carrying capacity of NCA, and therefore reiterates the recommendation of the 2007 mission to carry out a scientific carrying capacity study, based on the needs of the Maasai population and an assessment of the ecological impacts of the populations. This study should take into account the above mentioned changes in lifestyle of the resident communities.

The mission recommends that based on the results of this study a dialogue should be started between NCAA, Maasai community leaders and other stakeholders to develop a joint strategy to address this issue, including the issue of increasing agricultural use in the property.

3.3 Implement the recommendations of the Environmental Impact Assessment on traffic congestion in the crater

To address the issue of vehicle congestion in the crater, NCAA has undertaken an Environmental Impact assessment (EIA) of the traffic management within the crater, which highlighted a number of important recommendations, including (1) using vehicles with a higher passenger capacity and, in particular, ensuring all vehicles entering the crater have 12 seat capacity, rather than vehicles with smaller capacity of 4 seats; (2) reducing the length of crater tours from the current full day tour to a half day tour and monitoring the time spent within the crater by time-punching machines at entry and descent points; (3) limiting vehicles to 100 in one day, and maintaining a distance of 3 km between vehicles; (4) cementing the main ascent (7 km) and descent (4 km) roads into and from the crater and upgrading certain roads within the crater itself by gravelling up to 4 inch (c. 10 cm) thickness; (5) increasing user fees for visitors to the crater itself;

(6) initiating a code of conduct, covering speed limits of 25 to 30 km/hour within the crater (to be enforced by speed cameras), prevention of off-road driving, and enforcement of minimum distances between vehicles; and (7) considering options for joint venture development where the NCAA would operate the crater tours jointly with tour operators and potentially form a company to be floated on the local stock exchange to facilitate this operation; and (8) developing alternatives to the current use of the crater, including the promotion of viewing wildlife in other areas (Olmoti and Empakaai Craters), as well as the development of nature trails within the conservation area.

So far, NCAA has raised crater fees to US\$ 200 per day per vehicle and has focussed on recommendation 8 of the EIA, namely the development of alternatives for the use of the crater: Nature trails have been developed in several parts of the property, a visitor centre is under construction and several roads are under construction to facilitate access to other visitor attractions.

However, none of the other recommendations have been implemented. According to NCAA, it was necessary to first develop the alternative options in order to make restrictions on the crater visit more acceptable to the tour operators. In the mean time, visitor numbers have continued to rise with 508,734 visitors in the 2007/2008 season, compared to 380,235 visitors in the 2006/2007 season.

NCAA Visitors and revenue from 1999 to 2007 (Source NCAA)

Year	Tanzania Resident	Non-Resident	Total	Total Revenue TZ Shilling
1999/2000	71,261	117,608	188,869	4,304,291,401
2000/2001	89,064	144,997	237,061	5,683,741,354
2001/2002	86,091	135,410	221,501	5,986,033,743
2002/2003	100,377	152,531	252,908	8,104,093,690
2003/2004	72,067	187,595	259,662	9,336,344,520
2004/2005	91,043	220,977	312,020	12,269,224,679
2005/2006	101,652	243,668	345,320	17,536,281,774
2006/2007	108,153	272,082	380,235	23,149,277,577
2007/2008	231,102	277,632	508,734	35,875,053,410

The mission is therefore extremely concerned that, despite significant increases in entry fees no progress was made on the issue of vehicle congestion in the crater. The mission considers that there are indicators that this issue is becoming a threat to the value of the NCA's tourism product and is definitely beginning to have a negative impact on the natural values of the property. To address the tourism pressure issue, it is important that all eight recommendations of the EIA on traffic congestion in the crater are implemented urgently. The mission believes that visitor pressure in the crater can only be managed by putting a clear maximum limit on the number of vehicles allowed in the crater per day (proposed at 100 in the EIA). A transparent reservation system for the main crater should also be put in place as soon as possible (probably the beginning of 2010 to allow for proper notification and planning) based on its recommended carrying

capacity, as determined by the management plan and the recommendations of the EIA relating to traffic congestion.

3.4 Freeze any new lodge development in the property, in particular on the crater rim

The 2007 Mission recommended a freeze on all new lodge development within the conservation area, particularly on the crater rim, and that the general approach in the future should be to encourage any new lodge development outside of the property, or alternatively to renovate existing lodges, such as in the case with the Rhino Lodge.

Following the recommendations, the proposal for a new lodge development on the crater rim (the Kempinski lodge) was not approved and NCAA is continuing to observe a moratorium on new lodge development on the rim. However, contrary to Decision 31COM7B.2, the State Party has not frozen all new lodge development and several lodges and tented camps are currently being planned in other parts of the property (5 to 9 depending on the source of the information). Currently the process for allocating a number of new lodge/tented camp sites is underway.

The NCAA staff indicated that the GMP does not prohibit development of new lodges within the NCA if the lodge does not conflict with the environment and the interests of local residents of the area. They also stated that the NCAA needs revenue (from additional lodges) to carry out day to day activities so as to achieve targeted goals. NCAA further noted that these proposed developments will be subject to an EIA. Already some proposals were said to have been abandoned following a negative EIA.

Representatives of the Maasai communities expressed reservations about some of the current lodge developments, which they fear will limit their access to water in certain areas and will not bring direct benefit to them. They also complained that they were not adequately consulted on these issues.

The mission notes that the recommendation on a freeze on all lodge developments in the NCAA has not been followed but agrees that some limited development of overnight infrastructure will be needed as part of the planned diversification of the tourism product. The mission is concerned that these facilities are developed without an overall tourism strategy for the property (see also following point). The mission further recommends that all new developments are carefully reviewed in view of this strategy, with particular attention placed on the potential environmental impacts. It further notes that in line with the GMP, all new tourism facilities should be developed in close consultation with local communities and allocated using an open and transparent process.

3.5 Develop a proactive tourism strategy to guide future activities in relation to tourism within the conservation area

The mission received a copy of the tourism marketing strategic plan developed in 2006 by NCAA. However, this strategic plan is mainly addressed to promoting the tourism product of the property and increasing the number of visitors to the property.

The mission considers that the current strategic plan is not responding to the main tourism management challenges facing the property. Clearly the main management issue is how to manage the increasing visitor numbers in the property without damaging its values, rather than further increasing visitor numbers. While the GMP recognizes the

issue of management of visitor pressure, and recognizes the need to maximise revenue within the Limits of Acceptable Use (LAU), there are no concrete activities foreseen in the GMP other than the diversification of the tourism product to address this issue.

The mission considers that the development of a proactive tourism strategy is urgently needed in light of the numerous tourism management issues the property is facing. The strategy should not seek to increase the visitation to the property but rather focus on managing the current visitor streams. The strategy should therefore also address the issue of traffic congestion in the crater as well as the issue of new lodge facilities. The strategy should prioritize the quality of the tourism experience, not the quantity of visitors and tourism facilities. The mission recommends that this strategy is developed for the entire Serengeti Ecosystem in conjunction with Tanzania National Parks as part of the recently signed MOU (see 3.12).

3.6 Ensure that existing lodges are best practice models in relation to environmental protection

The mission was informed that a code of conduct has been developed for the lodges, tented camps and other tourism facilities within the NCA and that a draft code of conduct for drivers, vehicles and guides has been prepared.

So far, only two lodges are reported to have completed an environmental audit, as recommended by the 2007 mission. NCAA informed the mission that efforts are underway to complete this process with the other lodges, as soon as possible.

The mission welcomes the development of a code of conduct for the lodges, tented camps and other tourism facilities within the NCA and recommends that the draft code of conduct for drivers, vehicles and guides is finalized and implemented no later than end 2009. The mission recommends to complete, by the same date, the environmental audits for all lodges and tented camps within the property.

3.7 Rationalize and improve the road network in the property, taking into account direct and indirect impacts and close and rehabilitate all existing gravel pits in the property

Progress was made in the rehabilitation of the road network. The improvement of the main road from Lodoare main gate to the Naabi gate (80 km) was completed in October 2008. The construction of the road from the view point to Empakaai is underway (currently 35 out of 75 km completed) and is scheduled to be finalized by October 2009. The road to Laetoli (6km) was completed in June 2008. The mission noted speeding on the main road, including by heavy traffic passing through the property and by NCAA vehicles.

The mission supports the recommendation of the 2007 mission to improve the road network, which will discourage off road driving and facilitate the efforts to diversify the tourism product and encourage visitors to visit some of the other places of interest such as Olmoti crater, Empakaai crater or Laetoli. However, the road improvement will inevitably increase the risks of speeding and appropriate measures should be taken to reduce speeding to avoid accidents affecting resident populations and wildlife.

The mission was informed that efforts are underway to also upgrade the tracks in the crater and potentially increase the number of tracks. NCAA hopes that this measure will facilitate the implementation of the ban on off road driving. However the proposal to increase the number of tracks in the crater is also motivated by a desire to increase the acceptable upper limit of vehicles that can be admitted to the crater, as the figure proposed by the EIA is based on an average distance of 3 km between vehicles (thus by increasing the total km of roads, it would be possible to increase the limit). At the same time, NCAA has closed a number of tracks in the crater, such as the track through the Leraï forest, as this sensitive area is also the main area for the remaining black rhino population.

The mission welcomes the upgrading of the existing tracks in the crater to avoid off road driving and fully supports the closure of tracks in sensitive areas. However, the mission has strong reservations about the proposal to increase the number of tracks in the crater in order to increase number of vehicles that can be allowed in the crater and recommends that before such a measure is taken, it is subject to an EIA.

The mission also was informed that discussions are underway to divert the main road to Musoma (currently passing through the property and crossing also the Serengeti National Park and World Heritage property) by upgrading a road going to the north of NCAA and crossing the northern part of Serengeti. While such a proposal would certainly be very beneficial to the conservation of the NCA property, it will of course be necessary to assess the environmental impacts of the proposed road, as it will still cross the Serengeti World Heritage property.

The mission inspected the new road to Laetoli, where the famous Laetoli footprints were discovered. Currently, there are proposals from the Tanzania Government to open up the Laetoli footprints (which were recovered after the discovery to preserve them), a proposal which is resisted by a number of international experts. The review of this project was not part of the terms of reference of the current mission (the mission which will review the re-nomination of the property under cultural criteria could provide advice on this). However, it was alleged that the new access road would also be of environmental concern. The current mission believes that it is not unacceptable that a road network is created in a protected area to ensure that its main features and attractions can be visited, as long as the necessary precautions are taken to ensure that the values of the area are protected as the priority. The mission therefore does not see a problem in principle with the newly constructed road, as long as appropriate measures are taken to avoid speeding (see above).

The 2007 mission recommended the closure and rehabilitation of all existing gravel/murram pits within the conservation area. The NCAA staff informed the mission that while some pits had been closed, it was not possible to close all of the pits in the area due to the fact that gravel materials are needed for regular maintenance of roads in the area. It was also noted that sourcing of road maintenance material from outside of the NCA could lead to the introduction of invasive species which are common in the agricultural areas around the property. During the mission, the team observed that there had been significant further development of the murram pit on the crater rim in an ecologically sensitive area below Sopa Lodge, despite the recommendation of the 2007 mission that it be closed. The pit is currently in use for the rehabilitation of the road to Empakaai.

The mission acknowledged that it might be necessary to maintain some gravel/murram pits within the NCA but considers that there should be EIAs carried out on all existing and future pits. It recommends to prioritize the development and implementation of a plan for sourcing road building materials from areas with a minimal impact on the natural values of the property. The mission notes that the gravel pit on the crater rim near Sopa lodge is definitely damaging the values of the property and should be closed immediately.

3.8 Continue existing programmes for control of invasive species, in particular to eradicate *Azolla filiculoides*

NCAA is continuing the existing control programmes on invasive species through controlled burning and other measures. *Azolla filiculoides* (water fern) remains the main threat, as it has infested the fresh water bodies in the crater. For the moment, manual removal remains the only strategy to address this. A workshop on the management of invasive species was organized in 2008 to raise awareness of this threat.

The mission reiterates the recommendation of the 2007 mission to continue the existing programmes for the control of invasive species and in particular emphasis should now be placed on the eradication of *Azolla filiculoides* from all fresh-water bodies within the crater and the conservation area.

3.9 Complete as quickly as possible the programme to relocate NCA and lodge staff as well as other major infrastructure outside the property

During the 2007 mission, NCAA announced that the entire process of relocating the 360 families of NCAA employees would be completed by June 2008. So far, only four blocks of flats (six family units per block) have been finalized, which can accommodate 24 families and another four blocks are being constructed during 2009. Eventually the NCAA expects to build a total of 52 blocks of flats (312 family units) outside of the NCA . NCAA now states that the process might be completed by 2012, if it can ensure the necessary funding.

No progress was made on the relocation of lodge staff. Moreover, the mission team found that a new office complex for NCAA was built on the crater rim, in total contradiction with the above mentioned recommendation. No EIA was submitted to the World Heritage Centre or made available to the mission team. When the mission team asked about the decision making process associated with construction of the office complex, the NCAA staff indicated that it had been a political decision to build the NCAA headquarters at the site of the existing offices rather than outside of the NCA.

The mission was informed that there is a lot of resistance against the relocation of staff and infrastructure, not only by the people directly concerned but also by local decision makers, as it is perceived as a first step towards the relocation of the communities living in the property.

The mission expresses strong concern about the limited progress on this important recommendation and strongly regrets that a major new office complex for the NCAA has been built within the core area of the NCA. It recommends that the NCAA increases its efforts to achieve the relocation within the newly proposed

time horizon of 2012. It further requests the NCAA to submit to the World Heritage Centre the approved EIA for the new office complex.

3.10 Explore alternatives to limit or remove cattle grazing in the crater

NCAA reported to the mission that, while cattle grazing is no longer allowed in the crater, salt licks are still allowed for the cattle of a limited number of families. NCAA has taken measures to provide the Maasai with other salt resources and also constructed artificial dams in two villages to ensure water availability during the dry season. While they report that the number of people and cattle going into the crater has diminished, the practice is still happening as it is considered to be strongly anchored culturally. The mission noted that cattle tracks are clearly visible on the crater slopes and result in erosion.

The mission supports the efforts by the NCAA to develop, in consultation with pastoral communities, salt licks and water sources outside of the main crater in order to discourage access of cattle to the crater and to reduce impact of cattle on the fragile slopes and floor of the main crater.

3.11 Explore and implement a range of innovative financing mechanisms

The ability of the NCAA to generate and retain its own revenue provides it with a unique opportunity in terms of African protected areas to respond effectively to the wide range of management challenges it faces. The income of the NCAA has risen dramatically in recent years as visitor numbers have increased and fees for entry and other uses in the property (additional fees for entry into the main crater, camping, hiking, filming, etc.). Faced with this increasing income, NCAA developed an investment policy in 2006. For 2007/2008, the total revenue of NCAA was reported to amount to more than 35 Billion Tanzania Shilling (equivalent to c.USD 28 million), a doubling since 2005/2006 (see also table under 3.3). Total expenditure was reported USD c. 22.8 million and the after tax profit of USD 3.9 million. The mission team requested detailed information on how the income earned was allocated however, no details were provided. According to the information provided, the after-tax profit is utilized for the purchase of road equipment, vehicles, capital construction, etc.

Several stakeholders, including leaders of the Maasai community complained to the mission of a lack of transparency in the financial management of the NCA.

The mission recommends that, as a public entity, NCAA should make its accounts public so that the many stakeholders in the property can see how the Authority is using the resources earned for the management of the property.

In addition, the mission recommends the NCAA, resident populations and the State Party to develop benefit-sharing mechanisms that encourage a sense of ownership of, and responsibility for, the conservation and sustainable use of the property's natural resources.

3.12 Develop a high level technical forum between NCAA, TANAPA and the Wildlife Department to ensure better management of the Ngorongoro-Serengeti ecosystem

Following this recommendation, a “Serengeti Ecosystem Forum” (SEF) was established between the management authorities of the Serengeti National Park (managed by TANAPA), NCA and the adjoining game reserves (managed by the Wildlife Division), together with other stakeholders such as the Frankfurt Zoological Society. The Memorandum of Understanding was signed in August 2008, however, no regular meetings have taken place since.

The mission team welcomes the establishment of the Serengeti Environmental Forum and recommends that, through this Forum, an overall management vision for the ecosystem is developed, taking into account the conservation of the Outstanding Universal Value of both the Ngorongoro and Serengeti World Heritage properties.

3.13 Other issues

3.13.1 Participation of the local communities in the management of the property

As mentioned before, at the request of the mission team, a meeting was organized with representatives of the Maasai community. The meeting was very well attended, including the Member of Parliament for the region, members of the Pastoral Council, traditional leaders from different parts of NCA, representatives from the youth and women, as well as by NGO representatives. On behalf of the Maasai, the Member of Parliament presented the mission team with a two page Memorandum, highlighting 10 different points to the mission, including questions related to participation in the NCAA board, benefit sharing, land tenure issues and questions regarding carrying capacity, cultivation in NCA and relocation already highlighted in other parts of the report. Participants in the meeting indicated that they considered the mechanisms and processes included in the General Management Plan with regard to the involvement of resident communities in the management of the property are not being actively pursued by NCAA management.

During the meeting, the mission clarified some misunderstandings on the inscription of the area as a World Heritage property and the role of the mission and of the World Heritage Centre and IUCN. The mission team had a long and frank dialogue with the representatives of the Maasai community and listened to the concerns and remarks submitted.

The mission team also clarified that for the moment, NCA is only inscribed on the World Heritage List for its natural values as nominated by the State Party, but noted that the Government of Tanzania is currently working on a re-nomination under cultural criteria. This nomination was submitted by the State Party on 1 February 2009 and will be reviewed by the Committee at its 34th session in 2010. The mission was surprised to learn that the representatives of the Maasai were not aware of this nomination.

The mission is concerned at the growing tension evident between NCAA and the resident Maasai communities that became evident during the meeting. The mission recommends that NCAA prioritize the initiation of a dialogue with resident communities to ensure their active participation in the decision-making processes and governance of the property. It encourages the NCAA, resident populations

and the State Party to develop benefit sharing mechanisms that encourage a sense of ownership of, and responsibility for, the conservation and sustainable use of the NCA's natural resources. The Maasai communities themselves need to accept and take responsibility for the implementation of the GMP's management objectives with regard to their land use within the NCA.

The mission believes that the State Party could facilitate this process by making substantive appointments to NCAA leadership positions that have remained unfilled for lengthy periods of time. UNESCO, IUCN and other organizations with expertise in participatory planning process should also provide technical support to the various Tanzanian stakeholders in their efforts to improve the management and sustainable use of the property.

3.13.2 Optical Cable Route

The mission team was also requested to investigate reports on a potential optical cable route. NCAA confirmed the existence of the project but noted that the EIA had concluded that the proposed work on the laying of the cable to be acceptable as it will follow the existing road and after the work the environment would be restored to original condition. Once the cable was in place there should be a positive visual impact since there would no longer be a need for lines above ground.

4. ASSESSMENT OF THE STATE OF CONSERVATION OF THE PROPERTY

Ngorongoro Conservation Area was inscribed on the World Heritage List in 1979 under all natural criteria (vii), (viii), (ix) and (x). However no detailed Statement of Significance was adopted which clearly stated the values for which NCA was being inscribed under these criteria. This is the case for most of the properties inscribed in the early days of the Convention. Currently the Committee has started a process, as part of the new periodic reporting cycle, to develop retrospectively "Statements of Outstanding Universal Value (SoOUV)" for all properties inscribed on the World Heritage List.

While no SoOUV currently exists, the mission considers that the main reasons for inscription of this property are :

(vii): The stunning landscape of Ngorongoro Crater combined with its spectacular concentration of wildlife is one of the greatest natural wonders of the planet. Spectacular wildebeest numbers (1.7 million animals) pass through the property as part of the annual migration of wildebeest across the Serengeti ecosystem and calve in its short grass. This constitutes a truly superb natural phenomenon.

(viii): Ngorongoro crater is the largest unbroken caldera in the world. The crater, together with the Olmoti and Empakaai craters are part of the western rift valley, whose volcanism dates back to the late Mesozoic / early Tertiary periods and is famous for its geology. The property also includes Laetoli and Olduvai Gorge, which contain an important palaeontological record related to human evolution.

(ix): The variations in climate, landforms and altitude have resulted in several overlapping ecosystems and distinct habitats, with short grass plains, water catching highland forests, scrub heath, montane long grass plains and high open moorlands. The property is part of the Serengeti ecosystem, one of the last intact ecosystems in the world which harbours large and spectacular animal migrations.

(x): Ngorongoro Crater is home to a population of some 25,000 large animals, largely ungulates, alongside the highest density of mammalian predators in Africa as well as one of the largest animal migrations on earth, including 1.7 Million wildebeest, 260,000 zebra and 470,000 gazelle. The property also harbours other endangered species, such as the Black Rhino and 500 species of birds.

The mission recommends that the State Party, in consultation with the World Heritage Centre and Advisory Bodies, develops a draft Statement of Outstanding Universal Value including the conditions of integrity to further clarify the Outstanding Universal value of the property. This SoOUV which will facilitate and provide guidance to the World Heritage Committee in future decisions on the State of Conservation of the property.

While the mission is of the opinion that currently, the above mentioned values of the property are maintained, they are definitely under increasing pressure. In particular the integrity of the property is increasingly affected by a diverse number of threats, including through increasingly unsustainable land use practices by the growing resident population, which is affecting increasing areas of the property, and also through increased pressure from unsustainable tourism.

These threats and challenges were also acknowledged by the 2007 mission, which at the time concluded that NCAA had initiated a number of specific actions to respond to

these challenges, many of which were scheduled to be implemented in the financial year 2007/2008.

The current mission concludes that only limited progress has been made with the implementation of many of these measures. In particular, no progress was made in addressing the impacts of the resident populations or the issue of tourism pressure, identified by the mission as the two main drivers of the degradation of the Outstanding Universal Value of the property. The mission therefore considers that if these issues are not addressed urgently and if the current degradation patterns are not stopped, the Outstanding Universal Value of the property will be jeopardised.

5. CONCLUSIONS AND RECOMMENDATIONS

The mission commends Ngorongoro Conservation Area Authority (NCAA) and the Government of Tanzania for the progress made in the implementation of some of the recommendations of the 2007 mission but notes with concern that significant issues have not been resolved and unfortunately some of the decisions/actions of the NCAA since the 2007 mission have been counter to the spirit of the mission's recommendations.

On the basis of the information gathered during the mission, the mission concludes that the Outstanding Universal Value of the Property is increasingly threatened by the impact of resident human populations and unsustainable land use practices linked to subsistence agriculture and tourism. The mission therefore considers that if these issues are not addressed urgently and if the current degradation patterns are not stopped, the Outstanding Universal Value of the property will be jeopardised.

The following are the main conclusions and recommendations of the mission:

1. The mission recommends accelerating the process of voluntary relocation of immigrant populations, lodge staff and NCAA staff to areas outside of the NCA in close collaboration with community leaders and representatives of various stakeholders.
2. The mission considers that the issue of the impact of resident populations on the values of the property needs to be addressed urgently to avoid a further degradation and eventually loss of its Outstanding Universal Value. The mission considers that any discussion has to be based on a scientific assessment of the carrying capacity of NCA, and therefore reiterates the recommendation of the 2007 mission to carry out a scientific carrying capacity study, based on the needs of the Maasai population and an assessment of the ecological impacts of the populations. This study should take into account the above mentioned changes in lifestyle of the resident communities. The mission recommends that based on the results of this study a dialogue should be started between NCAA, Maasai community leaders and other stakeholders to develop a joint strategy to address this issue, including the issue of increasing agricultural use in the property.
3. The mission is extremely concerned that despite significant increases in entry fees no progress was made on the issue of vehicle congestion in the crater. The mission considers that there are indicators that this issue is becoming a threat to the value of the NCA's tourism product and is definitely beginning to have a negative impact on the natural values of the property. To address the tourism

pressure issue, it is important that all 8 recommendations of the EIA on traffic congestion in the crater are implemented urgently. The mission considers that visitor pressure in the crater can only be managed by putting a clear maximum limit on the number of vehicles allowed in the crater per day (proposed at 100 in the EIA). A transparent reservation system for the main crater should also be put in place as soon as possible (probably the beginning of 2010 to allow for proper notification and planning) based on its recommended carrying capacity, as determined by the management plan and the recommendations of the EIA relating to traffic congestion.

4. The mission notes that the recommendation on a freeze on all lodge developments in the NCAA has not been followed, but agrees that some limited development of overnight infrastructure will be needed as part of the planned diversification of the tourism product. The mission is concerned that these facilities are to be developed without an overall tourism strategy for the property (see also following point). The mission further recommends that all new developments are carefully reviewed in view of this strategy, with particular attention placed on the potential environmental impacts. It further notes that in line with the GMP, all new tourism facilities should be developed in close consultation with local communities and allocated using an open and transparent process.
5. The mission considers that the development of a proactive tourism strategy is urgently required in light of the numerous tourism management issues the property is facing. The strategy should not seek to increase the visitation to the property but rather focus on managing the current visitor streams. The strategy should therefore also address the issue of traffic congestion in the crater as well as the issue of new lodge facilities. The strategy should prioritize the quality of the tourism experience, not the quantity of visitors and tourism facilities. The mission recommends that this strategy is developed for the entire Serengeti Ecosystem in conjunction with Tanzania National Parks as part of the recently signed MOU .
6. The mission welcomes the development of a code of conduct for the lodges, tented camps and other tourism facilities within the NCA and recommends that the draft code of conduct for drivers, vehicles and guides is finalized and implemented no later than end 2009. The mission recommends to complete by the same date the environmental audits for all lodges and tented camps within the property.
7. The mission supports the recommendation of the 2008 mission to improve the road network, which will discourage off road driving and facilitate the efforts to diversify the tourism product and encourage visitors to visit some of the other places of interest such as Olmoti crater, Empakaai crater or Laetoli. However, the road improvement will inevitably increase the risks of speeding and appropriate measures should be taken to reduce speeding to avoid accidents affecting resident populations and wildlife. The mission welcomes the upgrading of tracks in the crater to avoid off road driving and fully supports the closure of tracks in sensitive areas. However, the mission has strong reservations about the proposal to increase the number of tracks in the crater in order to increase number of vehicles that can be allowed in the crater and recommends that before such a measure is taken, it is subject to an EIA..
8. The mission reiterates the recommendation of the 2007 mission to continue the existing programmes for the control of invasive species and in particular emphasis

should now be placed on the eradication of *Azolla filiculoides* from all fresh-water bodies within the crater and the conservation area.

9. The mission acknowledges that it might be necessary to maintain some gravel/murram pits within the NCA but recommends that there should be EIAs carried out on all existing and future gravel/murram pits. The mission recommends to prioritize the development and implementation of a plan for sourcing road building materials from areas with a minimal impact on the natural values of the property. The mission notes that the gravel pit on the crater rim near Sopa lodge, is definitely damaging the values of the property and should be closed immediately.
10. The mission expresses strong concern about the limited progress on the important recommendation to relocate NCA and lodge staff, as well as major infrastructure outside the property. The mission strongly regrets that a major new office complex for the NCAA has been built within the core area of the NCA. It recommends that the NCAA increases its efforts to achieve the relocation within the newly proposed time horizon of 2012. It further requests the NCAA to submit to the World Heritage Centre the approved EIA for the new office complex.
11. The mission supports the efforts by the NCAA to develop, in consultation with pastoral communities, salt licks and water sources outside of the main crater in order to discourage access of cattle to the crater and to reduce impact of cattle on the fragile slopes and floor of the main crater.
12. The mission considers that, as a public entity, NCAA should make its accounts public so that the many stakeholders in the property can see how the Authority is using the resources earned for the management of the property.
13. In addition, the mission recommends the NCAA, resident populations and the State Party to develop benefit-sharing mechanisms that encourage a sense of ownership of, and responsibility for, the conservation and sustainable use of the property's natural resources.
14. The mission welcomes the establishment of the Serengeti Ecosystem Forum and recommends that, through this Forum, an overall management vision for the ecosystem is developed, taking into account the conservation of the Outstanding Universal Value of both the Ngorongoro and Serengeti World Heritage properties.
15. The mission is concerned with the growing tension evident between NCAA and the resident Maasai communities. The mission recommends that NCAA prioritize the initiation of a dialogue with resident communities to ensure their active participation in the decision-making processes and governance of the property. It encourages the NCAA, resident populations and the State Party to develop benefit sharing mechanisms that encourage a sense of ownership of, and responsibility for, the conservation and sustainable use of the NCA's natural resources. The Maasai communities themselves need to accept and take responsibility for the implementation of the GMP's management objectives with regard to land use within the NCA. The mission considers that the State Party could facilitate this process by making substantive appointments to NCAA leadership positions that have remained unfilled for lengthy periods of time. UNESCO, IUCN and other organizations with expertise in participatory planning processes should also provide technical support the various Tanzanian stakeholders in their efforts to improve the management and sustainable use of the property.

16. The mission recommends that the State Party, in consultation with the World Heritage Centre and Advisory Bodies, develops a draft Statement of Outstanding Universal Value including the conditions of integrity to further clarify the Outstanding Universal value of the property. This SoOUV which will facilitate and provide guidance to the World Heritage Committee in future decisions on the State of Conservation of the property.

6. **ANNEXES**

Annex A - 2007 State of Conservation Report on Ngorongoro Conservation Area

Annex B - Decision of the 2007 WH Committee Ngorongoro Conservation Area.

Annex C - Agenda for the 2008 Mission and people met during the mission

Annex D – Mission Terms of Reference

Annex E – Map of Ngorongoro Conservation area and the overall Serengeti ecosystem

Annex F - Photographs

Annex A - 2007 State of Conservation Report on Ngorongoro Conservation Area

Ngorongoro Conservation Area (United Republic of Tanzania) (N 39)

Year of inscription on the World Heritage List:

1979

Criteria:

(vii) (viii) (x)

Year(s) of inscription on the List of World Heritage in Danger:

N/A

Previous Committee Decisions:

26 COM 21(b).22; 29 COM 7B.1; 30 COM 7B.2

International Assistance:

Total amount provided to the property: Technical co-operation for a scientific study of vehicle congestion in the Ngorongoro crater (2001: USD 10,000).

UNESCO Extra-budgetary Funds:

N/A

Previous monitoring missions:

IUCN mission 21-24 April 1986; World Heritage Centre-IUCN mission 28 April to 4 May 2007

Main threats identified in previous reports:

- Increased human pastoral population;
- Immigration; Poaching;
- Spread of invasive species;
- Tourism pressure;
- Encroachment and cultivation

Current conservation issues:

On 8 January 2007, the World Heritage Centre received a report from the State Party on the state of conservation of the Ngorongoro Conservation Area. The State Party reported on progress in addressing the threats to the property, in particular from tourism and encroachment. As requested by the Committee at its 30th session (Vilnius, 2006) and on the invitation of the State Party, a joint World Heritage Centre - IUCN mission visited the property from 28 April to 4 May 2007. The detailed findings and recommendations of the mission are contained in the report of the mission, which is available for reference on the website of the World Heritage Centre, and are summarised below:

Visitor management and infrastructure development:

The Mission noted that an Environmental Impact Assessment (EIA) has been completed for the proposed Kempinski Lodge, to be located on the rim of the crater. The EIA is currently (3 May 2007) with the Minister for Environment in the Vice-President's Secretariat for approval, but no final decision has been made at this stage. It is understood that the EIA has recommended that the lodge should not be built on the crater rim and that this is also the position of the Ngorongoro Conservation Area Authority (NCAA) Board. However, the hotel group is already advertising the proposed lodge. The Mission notes that this Lodge is expected to have a capacity of 120 beds, and has potential for major direct and indirect impact on the conservation area, including increased use of water, electricity and associated services like waste disposal. There is also a potential impact on visual integrity, which is particularly relevant as the property has been inscribed under criteria (vii), relating to outstanding scenic and aesthetic values. Finally the development of such a lodge would set a precedent for future additional development within the rim of the crater. In view of these factors, the Mission Team supports the position of the EIA and the NCAA Board and recommends that the Kempinski Lodge should not be approved on the rim of the crater. It is the opinion of the mission team that there may be the potential for Danger Listing of this property should the Lodge be constructed on the rim of the crater.

The General Management Plan (GMP) of the property, which was approved for implementation by the Board of the NCAA on 15 April 2006, provides for the continuation of the 4 existing lodges but no further development within the rim of the crater (500m from the crater rim), considering the limited water supply and the already existing total bed capacity of 620. It is also noted that there are proposals to renovate the existing Rhino Lodge, with the addition of an extra 20 beds, as a joint venture by the Pastoral Council and an external developer. This has been approved by the previous NCAA Board.

The NCAA has completed the Environmental Impact Assessment of the traffic management within the crater, which makes a number of recommendations, including: (1) using vehicles with a higher passenger capacity and, in particular, ensuring all vehicles have 12 seat capacity as against 4 seats currently; (2) reducing the length of crater tours from the current full-day tour to a half-day tour and monitoring the time spent in the crater by time-punching machines at entry and descent points; (3) limiting vehicles to 100 in one day (as against some 300 per day currently), and maintaining a distance of 3 km between vehicles; (4) cementing the main ascent (7 km) and descent (4 km) roads into and from the crater and upgrading certain roads within the crater itself by gravelling up to 10 cm thickness; (5) increasing user fees for visitors to the crater to US\$ 200 per vehicle; (6) initiating a code of conduct, covering speed limits of 25 to 30 km/hour within the crater (to be enforced by speed cameras), and off-road driving; (7) considering options for joint venture development where the NCAA would operate the crater tours jointly with tour operators; and (8) developing alternatives, including the promotion of viewing wildlife in other areas (Olmoti and Empakaai Craters), as well as the development of nature trails within the conservation area, a platform for wildlife viewing on the crater rim, and a visitor information centre.

The Mission Team noted two gravel pits within the property, one close to the Sopa Lodge to the east of the crater, which is currently active, and the other within the crater, which is reportedly being closed down, and these are used to source gravel for

maintenance of roads. The sourcing of gravel from outside the conservation area was reported to increase the likelihood of invasive species.

Encroachment:

The revised General Management Plan, approved in April 2006, established a new zoning plan, defining the Northern Highland Forest Reserve and the Ngorongoro Crater as the core zone where human activities are highly restricted. There are daily patrols to monitor and control illegal activities such as collecting timber and firewood.

The policy of the NCAA Board has included banning of cultivation within the conservation area, which has been phased out over a period of time, and also voluntarily relocating immigrant populations outside the conservation area. In relation to the voluntary relocation of the immigrant population, the NCAA has encouraged and facilitated this process by the provision of infrastructure outside of the conservation area (at Oldonyo Sambo, about 70 km north from the NCA boundary), including the building of a school, dispensary, police station, and a road from the conservation area, and the provision of land (around 2 acres per individual) for cultivation. As at April, 2007, 223 out of a total of 1,725 immigrants have moved out voluntarily, and the balance is waiting for infrastructure outside the conservation area to be completed. The resettlement will reportedly be finalised after the infrastructure development is completed (by June 2008). In relation to the Maasai population the carrying capacity of the property will be assessed in terms of the current and future numbers of Maasai that the area can sustain. The study will also address issues such as how to increase productivity through, for example, introducing improved breeds of cattle. This study will be undertaken in close consultation with the Maasai population and District Authorities adjacent to the conservation area. The NCAA is currently (May 2007) in the process of identifying a suitable consultant to undertake this carrying capacity study.

The Mission Team noted some soil erosion associated with cattle access into the crater. Access for cattle grazing has been a traditional right granted to the Maasai people for an agreed number of Bomas (Maasai settlements) and is valued, particularly for access to "salt licks" on the floor of the crater and also as a source of water in the dry season. This right of access is recognized within the General Management Plan and is mainly used by the villages closest to the crater. The NCAA have provided alternative sources of salt to the Maasai on the implicit understanding that, if the salt can be supplied separately, the Maasai will not take their cattle down into the crater or, alternatively, will go less frequently. However this is an on-going and sensitive issue and will need further attention and discussion with the Maasai to identify and implement viable alternatives. It was reported that currently some 500 cattle from 10 Bomas enter the crater each day.

In the dry season the Maasai are allowed to graze in certain parts of the northern highland forest reserve, subject to restrictions locally agreed upon by the NCAA and the Maasai. The Mission Team was advised that the NCAA has addressed illegal logging in the northern highland forest reserve. The Team over flew the northern highland forest and their conclusion is that significant erosion as a consequence of grazing was not apparent in this area. The Mission Team also noted activities to encourage alternatives to the use of timber from the northern forests, specifically by the NGO HIMAKU, based in Karatu, which is developing alternatives, more fuel efficient stoves for cooking and also alternative techniques for making bricks.

The mission team notes there is currently a major infrastructure development project to relocate the accommodation for all NCA and lodge staff from their current location within the property. The site of the relocation (Kamyn Estate) covers an area of 435 acres and is approximately 5 km from the Lodoare Gate. This relocation will involve approximately 360 NCA families (in total about 3,000 persons), and staff working within existing lodges (approximately 2,000 persons) over a 4 to 5 year period. Construction has already commenced and it is anticipated that accommodation for NCA staff will be completed by June 2008, while the lodge management will have the responsibility to develop infrastructure for their staff.

Invasive species:

The Mission Team noted that the NCA management has made major efforts to control invasive species (both alien and indigenous), particularly within the crater. Twenty (20) full time staff are currently working on the control of invasive species and this number is doubled in times of specific operations such as controlled burning. Priority areas are identified as (in descending order): crater floor; the crater rim; the northern highland forest reserve; the populated – human settlement areas; and then other areas. Priority species are identified as (in descending order): Mauritius thorn; black wattle, *Azolla filiculoides* (red water fern); eucalyptus species; Mexican poppy; and then other invasive and alien species.

Control methods have included burning, and mowing has also been applied in some areas. The development of invasive species control approaches has drawn on external experts and missions to other countries to assess control methods. The Mission Team noted that Mexican Poppy and *Datura* has been largely controlled within the crater but that the control of red water fern, which has invaded all fresh-water bodies in the crater remains a problem. The management reported that a study tour of some NCA staff to Benin will be implemented to learn the technique for control and eradication of the red water fern. Efforts are also being made to involve local communities in the control of invasive species, including through the involvement of schools in removing weeds in their local area, through the initiation of tree planting campaigns of native species, and giving free saplings of native species in exchange for alien species.

Management and resourcing:

Currently the monitoring of wildlife includes a census undertaken during wet and dry seasons each year to determine trends in wildlife population. Burnt areas are also monitored for composition of plant species.

The Mission Team noted a number of positive management activities within the crater, including the establishment of gabions to regulate water flow to ensure better management of species, habitats and the crater ecosystem. Roads are also closed-off periodically to rehabilitate overused areas.

The NCAA will reportedly purchase a helicopter in the coming financial year at a cost of 2.6 billion Tanzanian Shilling (TS) to facilitate management activities, like patrolling, fire protection, and rapid response.

The ability of the NCAA to generate and keep its own revenue is a significant factor in its success, which provides the flexibility to respond effectively to the different management challenges that are faced by the Authority. The Mission Team was advised that annual

income from tourism currently generates 60 % of the total budget for NCAA (in 2006/07 this was reported to be about 27 billion TS: USD 1 = 1260 TS), with the balance of income (12 billion TS in 2006/07) coming from investments, fines, concession fees and services provided to lodges, such as the provision of water and electricity. Expenditure is largely on the provision of services to local communities, including roads and the development of infrastructure. The NCAA is examining a range of options for innovative financing, such as the development of a corporate bond (USD 50 million) to fund activities within the conservation area.

Annex B - Decision of the 2007 World Heritage Committee on Ngorongoro Conservation Area.

31COM 7B.2 - State of conservation of World Heritage Properties - Ngorongoro Conservation Area (N39)

The World Heritage Committee,

1. Having examined Document WHC-07/31.COM/7B.Add;

2. Recalling Decision **30 COM 7B.2**, adopted at its 30th session (Vilnius, 2006);

3. Commends the State Party for measures already taken and requests the implementation of the following recommendations of the joint World Heritage Centre/IUCN monitoring mission undertaken in April-May 2007:

a) The process for encouraging voluntary relocation of the identified immigrant population to areas outside the property should be continued and completed by June 2008;.

b) The census and study of carrying capacity within the conservation area be implemented as quickly as possible, and completed by no later than June 2008, and should be based on both the needs of the Maasai population and an assessment of the ecological impact of human populations on the ecology of the Ngorongoro Conservation Area;

c) The recommendations of the Environmental Impact Assessment (EIA) relating to traffic congestion within the crater should be implemented, as quickly as possible, and their effectiveness be carefully monitored and assessed with regard to the impact on the ecology of the crater and also the impact on visitor satisfaction, which should be assessed through appropriate visitor surveys;

d) All existing gravel pits used to source material for road maintenance within the conservation area, including the one within the Ngorongoro crater, be closed and rehabilitated as soon as possible and that gravel material be sourced from outside the property, under the supervision of NCA staff to avoid the spread of invasive species;

e) A freeze on any new lodge development within the conservation area, particularly on the crater rim. As recommended by the EIA report, the proposal for a new Kempinski Lodge on the rim of the crater should not be approved, in view of its adverse impact on the outstanding universal value and integrity of the property and the potential for the property to be included in the List of World Heritage in Danger;

f) All existing Lodges within the conservation area should provide exemplary models of best practice in relation to protection and appreciation of the environment, and they should undertake an environmental audit to ensure they are conforming to and exceeding international best practice in relation to environmental management, including strategies to reduce the consumption of water and electricity;

g) Continue the existing programmes for the control of invasive species and particular emphasis should now be placed on the eradication of *Azolla filiculoides* (red water fern) from all fresh-water bodies within the crater and the conservation area;

h)The program to relocate NCA and lodge staff outside the conservation area at the Kamyn Estate site should be implemented and completed as quickly as possible, and other major infrastructure (such as the shops) should also be progressively relocated outside the conservation area;

i)A high level technical forum should be established involving staff from the NCAA, the Serengeti National Park (TANAPA), and the relevant Wildlife Management Areas (Wildlife Department) to ensure better cooperation in relation to the joint management of the Ngorongoro-Serengeti ecosystem;

4.Requests the State Party to invite a joint World Heritage Centre/IUCN monitoring mission in April 2009 to assess the state of conservation of the property, with special reference to implementing the recommendations of the 2007 mission;

5.Also requests the State Party to implement the above recommendations of the 2007 monitoring mission and to report on progress in their implementation by **1 February 2009**, for examination by the Committee at its 33rd session in 2009.

Annex C: Agenda for the 2008 mission and people met during the mission

Agenda

- 1/12 Flight from Dodoma to Ngorongoro with Cesna 182 NCAA
- Meeting with NCAA senior management to discuss progress in the implementation of the recommendations of the 2007 mission.
- 2/12 Meeting with Mr Amiyo Amiyo, manager conservation services
- Flight over NCAA with Cesna 182 NCAA to Olduvai, Ngorongoro-Serengeti boundary (short grasslands), Ndutu, Laetoli
- Meeting with Acting Conservator
- Field visit to Laetoli (by car)
- 3/12 Field visit to Ngorongoro Crater and Empakai Crater
- Meeting with Indigenous Heartland Organisation
- Meeting with Guy Marris (Frankfurt Zoological Society) and Benson Kibonde (Wildlife Division)
- 4/12 Meeting with representatives of Maasai Council
- Flight over NCAA with Cesna 182 of Frankfurt Zoological Society (Empakai, forest reserve) continuing to Arusha
- Meeting with representatives tourism industry (???)
- Meeting with representative TANAPA and TAWIRI
- Evening flight to Dar-es-Salam
- 5/12 Meeting with representatives Tanzania Petroleum Development Cooperation
- Debriefing at Office Wildlife Division with senior staff Wildlife Division, NCAA, Division of Antiquities
- Debriefing meeting at Ministry Natural Resources
- Meeting with Tim Clarke, ambassador European Union
- Meeting with David Hoyle, WWF
- Departure Guy Debonnet
- 6/12 Departure of Ed Wilson

People Met During Mission

Mr Donatius Kabamba, Director of Antiquities and (Acting) Permanent Secretary, MNRT

B. M. Murunya, (Acting) Conservator, NCAA;

Bruno O.P. Kawasange, Director, Conservation, Community Development, NCAA;

Lazaro Mariki, Director, Tourism Services, NCAA

Bernard Murunya, Director, Operations, NCAA

Amiyo T. Amiyo, Manager Conservation Services, NCAA ;

Boniface Tumbu, Tourism Services Manager, NCAA ;

Victor Runyoro, Manager, Ecological Monitoring, NCAA

Vincent Mbirika, Manager, Public Relations, NCAA

Mackiros R. M., Manager, Human Resources and Administration, NCAA

Capt. Michael Masota, Chief Pilot, NCAA

Donatus Gadiye, Zonal Coordinator Ngorongoro Crater, NCAA;

Dkole Tetete, Member of Parliament, Ngotoxa

Polycarp Nkuyumba, Divisional Officer, Local Government

Satumini Berere, Ward Executive Officer, Local Government

Mosses Ndiyaine, Indigenous Heartland Organisation

Lazaro Saitoti, Indigenous Heartland Organisation

Masai Pastoral Council, Chairperson, members and traditional leaders

Erasmus Tarimo, Director, Wildlife Division

Eliwasa Maro, Principal Conservator, Division of Antiquities

Tim Curtis, Culture Specialist, UNESCO, Tanzania Office

Guy Marris, Technical Advisor, Frankfurt Zoological Society

Inyasi Lejera, TANAPA

Simon Mduma, (Acting) Director General, TAWIRI (with Senior staff)

Dr. H. Sosovele, WWF

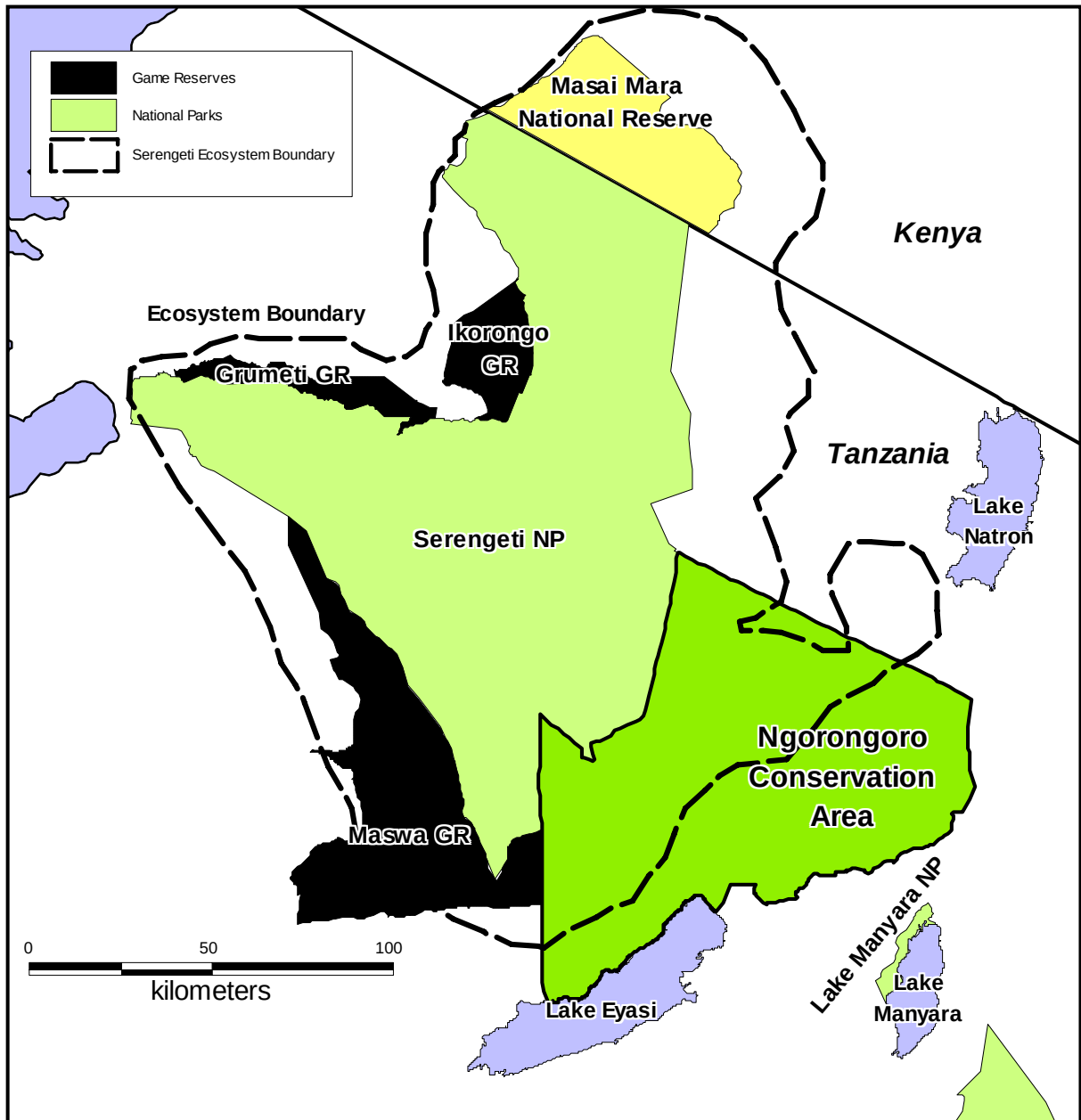
Annex D: Mission Terms of Reference

Undertake the joint UNESCO-WHC / IUCN Reactive Monitoring Mission from 1 - 6 December to the **Ngorongoro Conservation Area** World Heritage property in United Republic of Tanzania. The mission should:

- (i) Assess the state of conservation of this property and the factors affecting the Outstanding Universal Value of the property, in particular the status of the ecosystem and key/endangered wildlife populations and the causes of the reported declines in their populations;
- (ii) Assess the status of threats to the OUV of the property particularly those identified in previous reports including:
 - a) Increased human pastoral population;
 - b) Immigration; Poaching;
 - c) Spread of invasive species;
 - d) Tourism pressure;
 - e) Encroachment and cultivation
 - f) Infrastructure development
 - g) Management structure and resources
- (iii) Assess progress in implementing the recommendations of the joint UNESCO/ IUCN mission carried out in May 2007 (see Annex A);
- (iv) Hold consultations with the Tanzanian authorities and relevant stakeholders to examine and evaluate the progress made since the last World Heritage Committee with the requested EIA on for traffic congestion management and other tourism infrastructure (see Decision 30 COM 7B.2 Annex B-C);
- (v) Review with the Tanzanian authorities and stakeholders the status of voluntary relocation of immigrant populations and others outside the boundary of the property;
- (vi) Review tourism management and progress towards best practices within the property;
- (vii) Review the Ngorongoro Management Plan;
- (viii) Investigate reports of potential optical cable route and any other developments through the property; and review relevant plans, maps and Environmental Impact Assessments;
- (ix) On the basis of the foregoing findings, make recommendations to the Government of Tanzania and the World Heritage Committee for a better conservation and management of the property;
- (x) Prepare a mission report on the findings and recommendations of this Monitoring Mission following the attached format (see Annex E), and submit it to the UNESCO World Heritage Centre and IUCN Headquarters by 1 February 2009 at the latest in an electronic version. This report

should be prepared jointly with the other World Heritage Centre and Advisory Body participants involved in the mission, with the IUCN expert focusing on the natural values of the property. IUCN representatives to the mission will originate the first draft of mission reports, unless other arrangements are agreed at the time of the mission.

Annex E Map of Ngorongoro Conservation Area and the overall Serengeti ecosystem



Source: General Management Plan

Annex F: Photographs



View of the main Ngorongoro Crater from the crater rim.



Aerial view of new NCAA headquarters complex adjacent to the main crater.



Black Rhino on floor of main crater.



New NCAA headquarters building.



Empakaai Crater on the north-eastern boundary of NCA.



Watercourses affected by the invasive alien water fern, *Azolla filiculoides*.



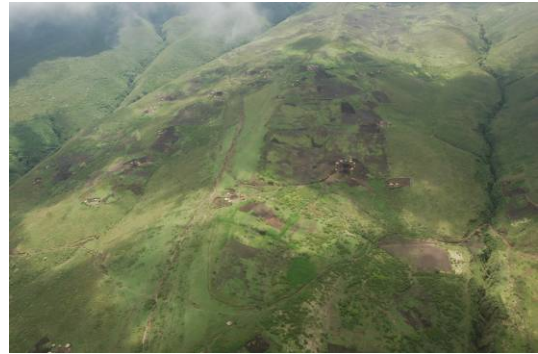
Murrum pit on the rim of the main crater below Sopa Lodge with significant impact on the property.



Intensive agricultural development inside the northern boundary of the property.



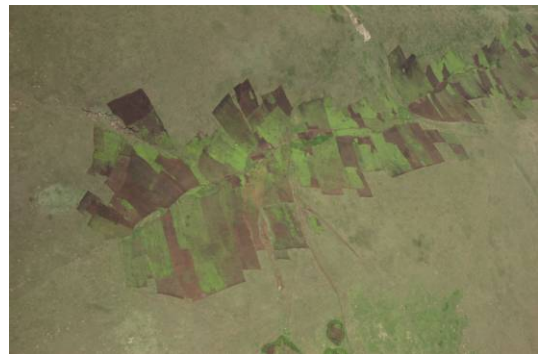
Maasai watchman at the murrum pit on the main crater rim.



Erosion on steep slopes within the northern boundary of the property, caused by agricultural use.



Aerial view of the boundary of the property showing the sharp contrast between the northern forest reserve and the adjoining settlements.



Intensive agricultural use within the property, with a mix of cropping of mainly wheat and maize.