DRAFT STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSMENT

(SESA) FOR AMBOSELI ECOSYSTEM MANAGEMENT PLAN 2020-2030

Amboseli Ecosystem Trust,

June, 2023

CERTIFICATION

This Draft Strategic Environmental and Social Assessment (SESA) Report for the Amboseli Ecosystem Management Plan (AEMP) 2020-2030 has been prepared under the leadership of Dr. Bernard Kaaria Irigia, NEMA Lead Expert Reg. No. 0079 of Planning and Environmental Consultancy Services (PECS) Limited, NEMA Firm Reg No 7839.

The SESA report has been prepared with reasonable skills, care and diligence in accordance with the provisions of Environmental Management and Co-ordination Act Cap 387 section 57 A, the Na tional Strategic Environmental Guidelines of 2012, the Environmental Impact Assessment and Audit Regulations of 2003 and other national and international policy Guidelines for Strategic Environmental Assessment.

We certify that the particulars given in this report are correct to the best of our knowledge.
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EXECUTIVE SUMMARY

This is an Ex-post SESA for the Amboseli Ecosystem Management Plan (AEMP) 2008-2018 and reveised as per approval condition issued by NEMA in 2014 to the current AEMP 2020-2030.

It is important to note that the approval conditions for the approval of the Strategic Environmental Assessment (SEA) of the Amboseli Ecosystem Management Plan 2008-2018 clearly required the plan owners to revise the plan after expiry in 2018. The revised 2020-2030 SESA has reviewed the compliance levels and made recommendations to guide sustainable implementation of the revised Amboseli Ecosystem Management Plan 2020-2030.

The implementation status of the AEMP drastically changed after approval and gazettement of the AEMP in 2015. The creation of the Plan Implementation Committee (PIC) eased enforcement and compliance. The absence of a strong Institution recognized by all stakeholders however, limited enforcement and compliance, but this limitation has been addressed through creation and endorsement of Amboseli Ecosystem Trust (AET) by all stakeholders. The Amboseli Ecosystem Trust (AET) has enhanced enforcement and compliance with the recommendations of the AEMP 2020-2030.

The preparation of the AEMP 2020-2030 was prepared taking cognizance of the existing Kajiado County and National Plans, Policies and Programs from initiation, development, and implementation as well as monitoring and evaluation. The AEMP 2020 and its SESA have taken into account the role of PPPs in the implementation projects as per the specific zonation plans. Where there are PPPs conflict within the Amboseli Ecosystem, mitigation measures have been suggested.

The AEMP is anchored on existing County and National Porgrams, Policies and Plans (PPPs) from initiation, development, and implementation as well as monitoring and evaluation. The AEMP has room for the role of PPPs in the implementation of projects as per the specific zonation plans.

The baseline data that guided the study included data on Geographical location, demography, climate, socio-economic data, physical and biological environment, flora and fauna, human population growth, wildlife populations, wildlife corridors and connectivity within the ecosystem and beyond.

The study involved both quantitative and qualitative data analysis, physical observations, photography, key informant interviews, stakeholder consultations, public involvement and administration of questionnaires.

The Amboseli Management Plan (2020-2030) was developed to ensure sustainable environment tal management of the ecosystem and enhance ecological conservation efforts of the Amboseli Management Plan (2008-2018), which was faced with many challenges among them including plan development process, approval mechanism, implementation and enforcement, inadequate participation and coordination. The 2020-2030 AEMP and its SEA are expected to address these challenges and ensure that they guide sustainable management of the Amboseli Ecosystem byall stakeholders.

The 2020-2030 AEMP has developed four programs and it is these programs that this SESA will focus since their actions are the impact drivers. These programs include:

(i) Community Livelihoods and Socio-economic Programme

This program aims at winning space for livestock and improving livestock and agricultural pro- duction in order to realize socio-economic aspirations of AE community within a sustainable framework**.**

(ii) Tourism Development and Management Programme

The aim of this programme is to develop high quality and sustainable tourism that optimizes benefits locally and nationally within agreed limits of acceptable use.

(iii) Natural Resource Management Programme

The aim of the programme is to ensure that the natural resource components and processesthat shape Amboseli Ecosystem are clearly understood, sustainably managed and threats to the key natural

resources processes are minimized.

(iv) Institutions and governance

The Ecosystem institutions and governance Programme is geared towards coordination of dif- ferent programs in this management plan so that it can realize its purpose of conserving the ecosystem values and resources while delivering optimum benefits to the communities and stakeholders. The AE management challenges can only be managed through a rationalized pro- cess that promotes active engagement and partnership with all key stakeholders including KWS, landowners, investors and NGOS under central leadership and coordination of the AET. The Governance Program therefore targets the stakeholders, management personnel and the sup- port services. The Noonkotiak Resource Centre will act as the headquarters for AET in its coordi- nation role and all resource monitoring activities will be undertaken at the centre (Appendix 8: Noonkatiak Community Resource and Cultural Centre -Concept Ideas).

The Strategic Environmental Assessment (SEA) or Strategic Environmental and Social Assessment (SESA) is a systematic and comprehensive process for evaluating the environmental consequences of policies, plans or programmes (PPPs) (NEMA, 2012). It is an important tool for ensuring that environmental considerations are appropriately addressedin all the PPPs and can therefore be viewed as a decision-support tool for sustainable environ- mental management at strategic levels. The major purpose of undertaking Plan SEAs is based onthe realization that not all management plans will always be formulated in a sustainable manner with some not being environmentally compliant in terms of existing environmental policies, strategic plans and international obligations. The main objective of this Strategic Environmental and Social Assessment (SESA) is therefore to scrutinize the proposed AEMP 2020-2030 programs and their actions and propose workable mitigation measures for impacts likely to be generated.

A major output of the SESA process is the Environmental and Social Management Plan (ESMP),the benchmark for the implementation of the mitigating measures, and monitoring the environmental performance of the plan.

Chapter one gives introduction and background on Kenya's biodiversity, provisions of vision 2030, sustainable utilization of natural resources and the need to review the 2008-2018 Amboseli Ecosystem Management Plan (AEMP) and subject the revised version to Strategic Environmental and Social Assessment (SESA) in order to resonate with the sustainable development aspirations of the revised plan. This chapter also outlines the role of SESA in sustainability analysis for man agement plan, objectives of the SEA, the guiding principles of SEA, SEA scope for the revised AEMP 2020-2030, rationale for undertaking SEA, Terms of Reference (TOR) and the legal contextof the SEA.

Chapter two outlines the approach and methodology for SEA and its tools, while **chapter three** Analyses policy, legal, regulatory and institutional frameworks.

The EIA techniques and methodologies applied for this study have been adapted and refined from various methodologies and case studies used for projects elsewhere without losing sight and focus on the unique conditions and settings of the area. In carrying out the SEA the key tool for the identification of existing impacts was through discussions with the proponents, stake- holders and observations from site visits. Brainstorming among the study team members after careful review of the proposed program actions also aided in the identification of impacts. Im- pacts were identified by characterizing the impact causes and effects and their consequences onthe physical, biological and the human environment.

Analysis and evaluation of adverse impacts was deemed necessary to determine whether they are significant enough to warrant mitigation. To achieve this, the study team reviewed relevant literature (comparison with laws, regulations and standards, consistency of program objectives with government policy); and comparisons of situations on the ground using collected data. Workshop proceedings and program Expert Working Groups generated useful information and data contained in this SESA report.

Experts identified **four** alternative options (No Amboseli plan option, Amboseli spatial plan op- tion, Amboseli National Park Plan option, and Amboseli Ecosystem Management plan option), and subjected them to analysis as shown below:

No	Plan Option	Expert Rating	Explanation
1	No Plan	1-Not preferred	This option means maintenance of status quo. This is bad option for sustainability
2	Spatial Plan	2-Least preferred	This option is global and not very specific on sustainable land use but good for administrative and jurisdiction pur- pose. Kajiado Spatial Plan is under preparation and all oth- er plans are anchored on it. It is generally a frame work for other plans in the county.
3	Park Man- agement Plan	3- Preferred	This option though preferred, only restricts itself to the land uses within the Amboseli National Park. The National Park Plan will be part of the Amboseli Ecosystem Management Plan and was separately preparation and adpted by the owner, KWS.
4	Ecosystem Management Plan	4-Most preferred	This option encompasses the entire land uses in detail taking care of all stakeholders within the larger Amboseli Area. This option also considers social, economic, political and eco-logical benefits to the present and future generations.

Chapter four gives an overview of the 2020-2030 AEMP and outlines the major environmental and social issues identified by the plan. This chapter analyses the four management programs identified by the plan. These programmes are: Community Livelihoods, Socio-economic, Tourism Development and Management, Natural Resource Management, and Institutions and Governance.

Chapter five describes the baseline conditions including detailed and specific program baseline information. This chapter identifies the six (6) land use zones in the Amboseli Ecosystem that include: pastoralism, conservation, tourism, cultivation, settlement and physical infrastructure**.**

Chapter six discusses stakeholder and public engagement, stakeholder identification and analy- sis and outlines the key impact parameters considered.

Chapter seven analyses AEMP impacts and suggested plan alternative options and their impacts. This chapter also contains management programmes with their objectives, actions (**Boxes 1-4)** that generate impacts that are characterized under each programme in tables 5-11.

Chapter eight gives an overview of Strategic Environmental Management and Monitoring Plan (SEMMP), in tables 8.2.1, 8.2.2 1 and 8.2.3. It also outlines institutional roles and responsibilities for implementing AEMP 2020-2030 as depicted in **Table 8.1.4 below:**

INSTITUTIONS	**KEY RESPONSIBILITIES**
AET	-AET to participate in the entire SEMP process being the owner of the Plan.
Environment Management Unit (EMU)	-EMU to oversee implementation of the EIA and ESIA of all develop- ments within the Ecosystem.
Kajiado County Government	-Provide oversight and advisory services during the
	implementation by volunteering information and services if needed by AET. The county government to seek support from all relevant departments
National Government	
Ministry of Industrialization and Enterprise Develop- ment	-Policy direction on industries and trade
	-Provide funding,
	-Facilitate in coordination of trade and associated matters
Ministry of Agriculture, Livestock and Fisheries De- velopment	-Capacity building and technical assistance to livestock and crop farmers (farm level value addition).
Ministry of Environment and Natural Resources	-Capacity in enhancing tree cover within the ecosystem and policy guidance on issues of climate change and mitigation strategies.
National Land Commission	-Land and land tenure Issues
	- Approval of land use plans for other developments with potential to degrade the ecosystem.
Implementing Agencies	
Kenya Urban Roads Authority	-Overseeing construction of the roads, foot paths, storm water, and drainage in the ecosystem.

WRMA	-Supply of clean water
	-Regular monitoring of water quality within the ecosystem
	-Monitoring of water abstraction rates. -Monitoring of water quality - pollution of water sources – rivers and boreholes.
National Environment Management Authority	-Review Environmental Impact Assessment (EIA) reports for proposed projects
	-Review environmental audit (EA) reports.
	-Approve EIA and EA reports.
	-Deal with cases of non-compliance.
AET	Overall coordination and marketing of the Amboseli Ecosystem
Kenya Wildlife Service	Coordination of Amboseli Park Activities and human/ wildlife interactions
ACC	Long term Research and Monitoring studies in partnership with others
ATE	Elephant movement studies
AWF	Cross border/AE studies
Big Life	Tourism and community ranger support (Mbirikani)
Lion Guardians	Lion studies within the ecosystem
SFS	Monitoring land use changes, generating scientific and social information and Capacity Building
Investors	-Construct and invest according to the ecosystem zones and environmental guidelines and regulations.
All stakeholders	-Ensuring compliance with county, national and international quality standards.

Chapter eight also mentions the establishment of the a centre of excellence by the name **Noonkotiak Community Resource and Cultural Centre** that has become the focal point for re- search and monitoring, visitor interpretation, environmental education and AE administration headquarters**,** and houses the Amboseli Ecosystem Trust (AET)

The Five actions proposed under Noonkotiak Centre include:

(i) Establishment of an Environmental Education Centre (Associated infrastructure, li- brary, community conference halls, meeting rooms, exhibition rooms);

(ii) Establishment of a Research and Monitoring Centre (computer labs, staff houses, science analytical labs, student hostels, kitchen, guest houses, incinerator);

(iii) Establishment of a Visitor Centre (the Visitor Centre will be a focal point for Ecosys tem interpretation and visitor information on the Amboseli Ecosystem. It will be de velop and equipped to provide visitor information in a welcoming and friendly way, an amphitheatre where introductory lectures);

(iv) Providing and maintaining traditional Maasai homestays (16 manyattas already in place, build more cultural manyattas, water supply, boma fencing, boma security, high end cottages, classrooms for teaching culture, wildlife, environment and how they integrate**);**

(v) Managing the Noonkatiak Resource and Cultural Center (NRCC) sustainably will be a complex development housing several thematic Sub-Centres -Culture, tourism, and Research). As such, for the NRCC to be sustainable it will require high-level managers for various components (research, hospitality, museum and education programs).

Noonkotiak Centre will also purpose to generate its own revenue by charging fees for use of its facilities and services by visitors and researchers. Furthermore, staff and the cultural manyatta community members will be trained in visitor handling so that they can ensure that visitors to the NRCC have memorable experiences**.**

A NRCC website will be created and it will be linked to websites of tourism and research partnersin the ecosystem. Marketing materials, such as brochures and leaflets giving information on fa- cilities and services provided at the NRCC will also be produced and disseminated through the internet and it will also be availed at visitor outlets in the ecosystem such as park entry gatesand tourist accommodation facilities

The Strategic Environmental Management and Monitoring Plan (SEMMP) for implementation of the plan is outlined in Table 13 with mitigation measures, management and monitoring frequency, monitoring indicators and standard guidelines for reference where applicable.

Analysis of potential positive and negative impacts and mitigation strategies are presented in details in this chapter for the four programmes. A Strategic Environmental Management and Monitoring Plan (SEMMP) with details on the actions required to effectively implement the miti- gation measures and recommendations in the SEA was also established. These actions are nec- essary in order to minimize the negative impacts which might originate from the plan implemen-tation and enhance positive impacts of the AEMP. It is also important in order to support the long term management and monitoring of the environmental issues during plan implementa- tion. The SEMMP is dynamic in that it can be updated and amended as new information is real- ized in the period of implementation. The dynamic nature of the SEMMP will also ensure that any emerging actions and their impacts are captured during the plan period.

Chapter nine concludes that:

- **i.** The AEMP (2020-2030) provides a sustainable framework for the implementation of the four proposed programmes.
- **ii.** The plan owner (AET) and all stakeholders must ensure compliance with the Strategic Environmental Management and Monitoring Plan (SEMMP).
- **iii.** The plan owner (AET) takes up the cardinal role of coordinating and creating linkages with all interested and affected parties including funding institutions at national and in- ternational levels for effective implementation of all the programmes.
- **iv.** Noonkotiak Center be promoted and upgraded as a social and scientific monitoring hub for all activities within the Amboseli Ecosystem.
- **v.** AET to be the plan implementation agency coordinating all other institutions with a stake in the ecosystem and enforcing the relevant standards and regulations for sustain-ability of the ecosystem.
- **vi.** The SESA for the AEMP 2020-2030 be considered as the mother SESA, and other individual Group Ranch SESAs to be aligned with the mother SESA. This in essesne means that all other plans within the Amboseli will be aligned to AEMP 2020-2030 and where there is conflict, the provisons of the AEMP 2020-2030 and its SESA 2020-2030 will take precedence in guiding decisions on proposed activity or activities within the ecosysytem.

- **vii.** The Lead Agencies and Kajiado County Government to support the AET in enforcement of the recomendations of the AEMP 2020-2030 and the SESA of the Plan to ensure compliance and achievement of sustainability for the Amboseli Ecosysyem.

This chapter recommends that:

- **a)** The relevant Lead Agency (KWS) should gazette the AEMP 2020-2030 and its SESA to be approved

by NEMA under EMCA (Amendment), 2015 for effective enforcement and compliance by the plan owner (AET), supported by the National Government, Kajiado County Government and all stakeholders.

b) The Kajiado Government County Spatial Plan be gaztted and annex the AEMP-2020-2030 and its SEA for effective and regular monitoring by the enfocement officers of all institutions coordinated by AET.

c) The Implementation Structure, Plan Implemetation Committee (PIC) should incorporate all the stakeholders including national government, County Governments, group ranch owners, Private Sector Actors, NGOs and the local communities. The PIC should develop effective communication channels to dissemeniate information, educate and cerate awarenes for effective and sustainable implemetaion of the recommndations. The plan owner to coordinate all stakeholders in mapping out ecologically sensitive areas within the ecosysytem and have them be gazetted as restricted or controlled zones under the county Spatial Plan or any other applicable legal instrument for purposes of strengethening the NRM Program and ensuring sustainability of species and their habitats.

d) AET supported by the PIC becomes the Lead Institution that advises all land owners on the best landuse practices, and ensures enforcement and complince with the recommendations of both the AEMP 2020-2030 and its SESA

e) Undertake individual SESAs for the respective group ranches for the purpose of addressing the different and unique priorities of the respective group ranches such as subdivision, a situation that didn't exist but has eventually happened, due to the changed circumstances that have led to the decision by the group ranches members to go ahead with the subdivision to avoid transitioning to the Community Land Act 2016. It is important to appreciate that there are many group ranches in Amboseli Ecosystem which are managed independently and whose members are members of AET. Membership in AET does not presuppose homogeneity and members are free to make independent decisions at the local levels. AET was created to oversee implementation of the AEMP and safeguard the ecosystem. AET is as an admistration arm of the AE and does not interfere with the internal management of its members but only provides guidance on sustainable implementation of activities/proposals within the ecosysystem.

LIST OF ACRONYMS

ABR	Amboseli Biosphere Reserve
ABRP	Amboseli Baboon Research Project
ACC	African Conservation Center
AE	Amboseli Ecosystem
AEMP	Amboseli Ecosystem Management Plan
AERP	Amboseli Elephant Research Project
AET	Amboseli Ecosystem Trust
AMP	Amboseli Management Plan
ANP	Amboseli National Park
ARCP	Amboseli Research and Conservation Programme
ASALs	Arid and Semi-Arid Lands
ATE	Amboseli Trust for Elephants
ATGRCA	Amboseli/Tsavo Group Ranches Conservation Association
ATGSA	Amboseli Tsavo Game Scout Association
AWF	African Wildlife Foundation
BR	Biosphere Reserve
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CDM	Clean Development Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Faunaand Flora
CMS	Convention on Migratory Species
CRC	Conflict Resolution Committee
DFZ	Disease Free Zone
EA	Environmental Audit
EIA	Environmental Impact Assessment
EMCA	Environmental Management and Coordination Act
ESAs	Environmentally Significant Areas
GDP	Gross Domestic Product
GoK	Government of Kenya
GR	Group Ranch
HEC	Human Elephant Conflict
HWC	Human Wildlife Conflict
IBAs	Important Biodiversity Areas
IFAW	International Fund for Animal Welfare
IUCN	International Union for the Conservation of Nature
KFS	Kenya Forest Service
KWCA	Kenya Wildlife Conservancies Association
LAU	Limits of Acceptable Use
MDG	Millennium Development Goals
MOU	Memorandum of Understanding
MPT	Maasai land Preservation Trust
NEMA	National Environment Management Authority
NGO	Non-Governmental Organization
NRCC	Noonkotiak Resource and Cultural Center
PEIA	Plan Environmental Impact Assessment
PPPs	Policies, Plans and programs

SEA	Strategic Environmental Assessment
SESA	strategic Environmental and Social Assessment
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural
OrganizationWCA	Wetland Conservation Areas
WPU	Wildlife Police Unit
UNDP	United Nations Development Program
WRA	Water Resource Management Authority

Chapter 1. INTRODUCTION

1.1 BACKGROUND

Kenya is endowed with diverse biodiversity and abundance of species in terms of rich wildlife and varie- ty of plant species and diverse ecosystems. The country is rich in plant species estimated at 35,000 (NE- MA 2005) with animals and insects at 21,575. Kenya has a number of endemic species in various im- portant biodiversity areas (IBAs) but only about 8% of the country's total surface area has so far been designated as protected area (PA) for environmental conservation. Protected areas are important assets for revenue generation at the local and national levels more so from tourism which has been one of the major revenue generating sectors for the country (GoK, 2007b, GoK, 2008b, GoK, 2009f).

Vision 2030, Kenya's blue print for economic growth , aims at increasing annual GDP growth rates to an average of 10% over the vision period (GoK, 2017b) and the government has identified tourism as a leading sector in achieving this goal (GoK, 2008b). Kenya is also signatory to the Sustainable Develop- ment Goals (SDGs) comprising of 17 individual goals among which is reduction of poverty and has re- cently adopted the big four agenda all meant to reduce poverty and disease. To achieve this, tourism has been cited as one of the key pillars together with sustainable utilization of natural resources. This therefore demands sustainable utilization of the key conservation areas such as national parks in the country thus the need for revising the 2008-2018 AEMP and subjecting it to SEA.

1.2 SUSTAINABLE DEVELOPMENT IN CONSERVATIONAREAS AND SENSITIVE ENVIRONMENTS

According to the Environmental Management and Coordination Act (EMCA, 1999), the management planning for all development activities in important biodiversity areas (IBAs) should ideally be approved under appropriate legislation. The central legislation that is the bedrock for environmental protection is the, 1999 which is the umbrella legislation that takes precedence over other sectoral environmental leg- islation. EMCA (1999) provides the National Environment Management Authority (NEMA) with powersto approve or disapprove major developments in wildlife conservation areas based on proper planning and assessment of environmental impacts (GoK, 1999b). NEMA is therefore the lead authority spear- heading the process of assessing and approving management plans in sensitive environments such the Amboseli Ecosystem.

1.3 AREA MANAGEMENT PLANS

A management plan is a blue print for the way that space which includes its environment and natural resources should be utilized and managed within a specified period of time. The plan serves as a point of reference to assess progress in practical implementation of the plan. It provides tools in monitoring and evaluation of development activities and future environmental change as captured in the document.The planning process incorporates different aspects among which is management of protected areas and their ecosystems.

Several protected areas management plans in Kenya have been developed including the; Amboseli Eco- system Management Plan (2008-2018); Meru Conservation Area Management Plan (2007-2017); Sam- buru-Isiolo Conservation (2010-2020); Lake Nakuru Integrated Ecosystem Management Plan (2000- 2012) and Aberdares Ecosystem Management Plan (2010-2020), Draft Kajiado County Governmnet Spatial Plan, and County Governmnet Development Plans and Land use Plans among others.

However, the main challenges of sustainable environmental management is that of ensuring that stake- holders are effectively involved in the planning and implementation process of the plan and that the process is properly aligned and configured within the goals of environmental sustainability at all levels, namely, local, national, regional and global. This requires the management plans to consider and effec- tively embrace all stakeholders and take cognizance of various instruments of sustainable environmentalgovernance such as policies, legal frameworks, strategic plans, regional frameworks and international multilateral environmental agreements (MEAs).

The main objective of Strategic Environmental Assessment (SEA) is therefore to scrutinize the plans, policies, programs and strategies to ensure that they comply with the existing environmental, legal and governance requirements.

1.4 ROLE OF STRATEGIC ENVIRONMENTAL ASSESSMENT(SEA) IN SUSTAINABILITY ANALYSIS FOR MANAGEMENT PLANS

Strategic Environmental Assessment (SEA) is a systematic and comprehensive process for evaluating the environmental consequences of policies, plans or programmes (PPPs) (NEMA, 2012). It is an important tool for ensuring that environmental considerations are appropriately addressed in all the PPPs and can therefore be viewed as a decision-support tool for sustainable environmental management at all strategic levels.

The major purpose of undertaking Plan SEAs is based on the realization that not all management plans will always be formulated in a sustainable manner with some not being environmentally compliant in terms of existing environmental policies, strategic plans and international obligations.

1.5 OBJECTIVES OF THE SEA

Overall Objectives

The broad objective of Strategic Environmental Assessment is to systematically integrate environmental considerations into policy, planning and decision-making processes, such that environmental information derived from examination of the proposed policies, plans, programs or projects is used to support decision making. For this study, it is to:

a) To ensure the AEMP is compatible with sustainable environmental planning and management;

b) To ensure the full consideration of alternative plan options including the do nothing option, atan early time when the agency has greater flexibility;

c) To enable consistency to be developed across different sector policies especially where trade-offs need to be made between the objectives of the sectors;

d) To guide sustainable implementation of programmes and their sub-project activities and or sector policies;

e) To identify environmental impacts and opportunities of mitigation measures during implementation of the plan to enhance environmental management plans;

f) To ensure that the cumulative, indirect or secondary impacts of diverse multiple activities and programmes are considered, including their unintended consequences;

g) To obviate the needless reassessment of issues and impacts at project level where such issues could have been more effectively dealt with at a strategic level, and offer time and cost savings;

h) To provide information to decision makers by evaluating alternative options that meet proposal objectives based on the best practicable environmental options;

i) To ensure that environmental principles such as sustainability, polluter pays and the precautionary principle are integrated into the development, appraisal, and selection of policy options;

j) To give proper place to environmental considerations in decision making as concerns economic and social issues, in view of the fact that in some contexts they may be traded off against each other;

k) To provide an early opportunity to check whether or not the plan complies with national and in- ternational environmental policy and consequent legislative obligations;

l) To contribute to the establishment of context that is more appropriate to nest future develop-ment proposals;

m) To provide a publicly available and accountable decision making framework.

Specific SEA Objectives

Drawing from the broad SEA objectives above, the following specific objectives have been formulated toensure sustainable environmental management of the AEMP 2020-2030

a) Provide guidelines for sustainable implementation of the community livelihood programme;

b) Provide guidelines for sustainable implementation of tourism programme;

c) Incorporate environmental sustainability measures in the plan programmes;

d) Provide guidelines for sustainable implementation of natural resource and management pro-gramme; and

e) Recommend governance and institutional arrangements for sustainable implementation of theplan.

1.6 GUIDING PRINCIPLES OF THE SEA

There is growing interest in sustainable development that focuses on balancing environmental, commu- nity, and business interests in Kenya. The principles used to guide the study provided by the NationalSEA guidelines of 2012 are:

n) The sustainable use of natural resources.

o) The enhanced protection and conservation of biodiversity.

p) Inter-linkages between human settlements and cultural issues.

q) Integration of socio-economic and environmental factors.

r) The protection and conservation of natural physical surroundings of scenic beauty.

s) The protection and conservation of the built environment of historic or cultural significance.

t) Public and stakeholder engagement.

1.7 SEA SCOPE FOR AEMP 2020-2030

Spatial Dimensions

The spatial scope covers the extent of the Amboseli ecosystem and its area of influence i.e. the surrounding community and industries that rely on the ecosystem for sustenance. The Amboseli ecosystem covers an area of about 5,700 km^2, stretching between Mt. Kilimanjaro, the Chyulu Hills and Tsavo West National park and the Kenya/Tanzania Border(Figure 1). Within the ecosystem are tourist facilities, human settlement, infrastructure such as roads and telecommunication network, research centres and wildlife protected areas (National park and Conservancies). The surrounding community relies on the ecosystem for economic and social sustenance from earnings and environmental benefits of the ecosystem.

The spatial dimensions are dependent on the sector under consideration, and for integrated management of community livelihood, tourism and natural resource management as well as environmental management of the ecosystem, it is limited to the Amboseli National Park, Ogulului/Ololarashi, Selengei, Kimana, Mbirikani, Rombo and Kuku Group Ranches.

The ecological extent of the Amboseli Ecosystem is delineated by the extent of animal movements as represented by a wildlife occupancy map generated by Amboseli Conservation Programme (ACP) from consolidated population distribution of all species and all seasons between 1973 and 2017. The wildlife occupancy map gives a good statistical measure of the areas essential for maintaining pastoralism and migratory wildlife species.

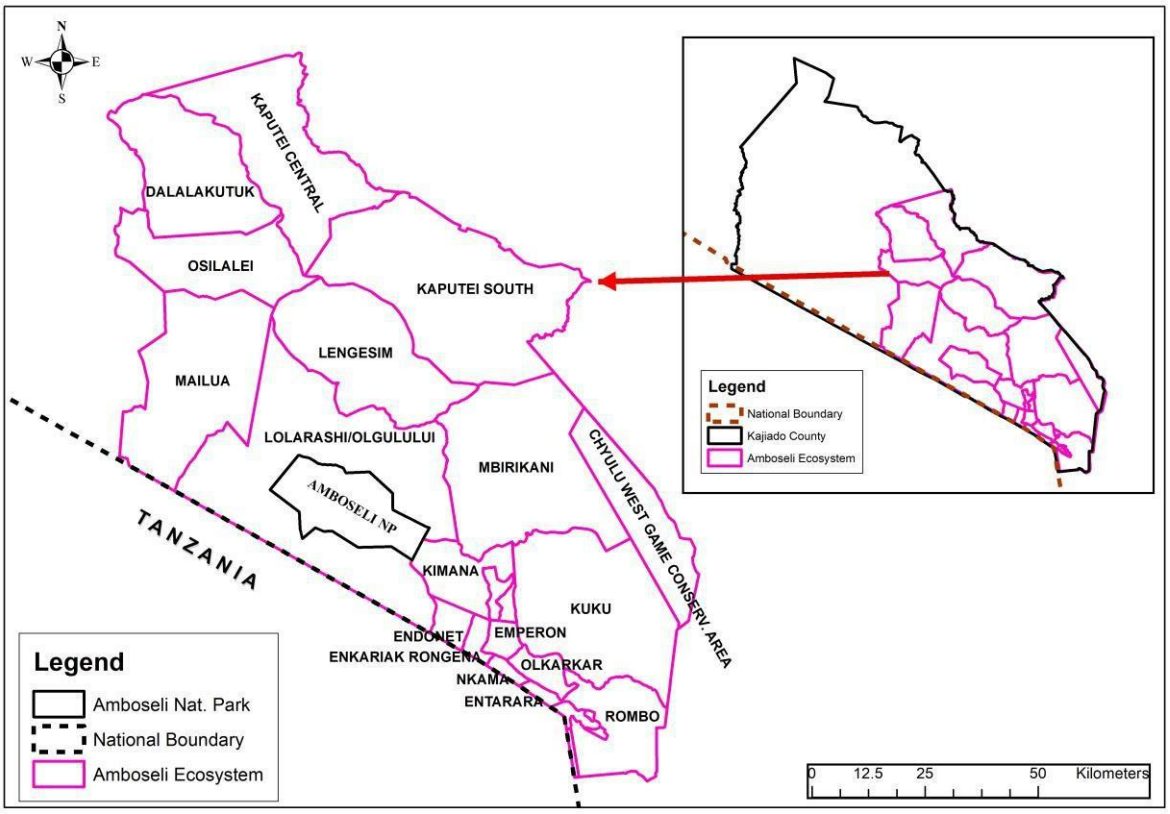

Figure 1. ***Amboseli Ecosystem Regional Setting***

Institutional Dimensions

The SEA process included consultations with key institutions and the local stakeholders identified during the SEA process. These institutions include: Amboseli Ecosystem land owners, Tourism operators, KWS,

County Government of Kajiado, NEMA and other government agencies and NGO agencies with interest and mandate within the AE.

Temporal Dimensions

This deals with the lifespan and reversibility of impacts. The SEA study covers short term, medium term and long-term environmental and socio-economic effects. Short-term impacts will be mainly during the construction phase. The medium term will consist of direct impacts from the operation phase while long-term will cover the implementation and monitoring phase of the programs. The exact timing is like-ly to vary since individual programmes may start and complete at different times. The type of impacts covered by the SEA includes positive and negative impacts, short, medium and long-term impacts, cu- mulative, synergistic and secondary impacts, temporary and permanent impacts.

Technical Scope

The technical scope of the AEMP SEA was mainly restricted to the physical, biological and social impacts of the four management programmes namely;

u) Natural Resource Management
v) Tourism Development and Management
w) Community Livelihoods
x) Institutions and Governance

1.8 RATIONALE FOR UNDERTAKING A STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA) FOR THE AMBOSELI ECOSYSTEM MANAGEMENT PLAN (AEMP 2019-2029)

The 2008-2018 AEMP is expired and it was clearly stipulated in NEMA approval conditions Clause 3.3 for SEA that the plan owner (AET) was to notify NEMA to be granted authority to a revise the plan upon ex-piry period. The AET notification and NEMA response letters are attached in appendix 1 for reference. In their letter dated 31st July, 2018 NEMA gave a "**No Objection**" to review the AEMP 2008-2018 and develop a new one and emphasized that the new plan will need to be subjected to the SEA process in line with the provisions of section 57A of the Environmental Management and Coordination Act (EMCA) Cap 387 and the National Strategic Environmental Assessment (SEA) Guidelines, 2012.

In addressing the requirements by NEMA, AET sought the services of a consultant and PECS Limited was engaged to undertake the exercise of preparing the AEMP and its SEA simultaneously as per the TORs developed by the client and endorsed by NEMA, as stipulated below:

1. **Determining the scope of the SEA:** This entailed undertaking a scoping process to establish the content of the SEA, the relevant criteria for assessment and indicators of Limits of Ac- ceptable Change.

2. **Establishing participatory approaches to bring in relevant stakeholders:** Ensuring effective and sustained public engagement during the SEA process. The Consultant was therefore ex- pected to ensure a clear understanding of the power relations between different stakehold- ers, and how they interact with each other and the environment in order to eventually en- sure ownership and a smooth implementation of the management plan.

3. **Collection of baseline information and situation analysis:** The aim of this was to provide a thorough understanding of the potential effect on environment in the Amboseli Ecosystem. The SEA was expected to undertake a comprehensive review of the international, national or regional legislative instruments which are relevant for the AEMP.

4. **Identification of alternative plans:** The rationale of this was to provide a hierarchy of alter- natives that could be considered for the management plan and undertaking a comparative evaluation of the needs and impact of different options and alternatives.

5. **Identification, prediction of impacts and determination of significant impacts:** This was ex- pected to involve assessing the significance and magnitude of the SEA effects, impacts, trade-offs, and options or alternatives in order to determine optimum choices and eliminateunacceptable options.

6. **Identification of measures to enhance opportunities and mitigate adverse impacts:** The Consultant was expected to focus on the realization of the positive opportunities of the planned activities in the plan in line with the Sustainable Development Goals (SDGs) and recommend suitable strategies for minimizing any negative risks.

7. **Draft report on the findings of the SEA:** This was to involve preparing, compiling and pre- senting a draft SEA report for review once the technical analysis was completed. It was to include a non-technical summary which would be of particular use in explaining the findings to local communities, who should be well informed about the environmental implications of the management plan in order to submit their SEA comments and validate the final docu- ment.

8. **Final SEA report for submission to NEMA and decision makers:** The Consultant was ex- pected to prepare and present the final SEA report after incorporating the comments from all stakeholders for submission to NEMA. The consultant was also expected to ensure that decision makers know the options open to them, what the likely effects of choices are, and what the consequences would be if they failed to reach a decision.

1.8.1 Legal Context of the SEA

According to the Constitution of Kenya 2010, Article 42, every person has the right to a clean and healthy environment which includes the right to have the environment protected for the benefit of pre-sent and future generations through legislations and other measures particularly those contemplated in Article 69; and to have obligations relating to the environment fulfilled under article 70.

The Environmental Management and Coordination Act (Amendment), 2015 has introduced Section 57A that states that:

(1) *All Policies, Plans and Programmes for implementation shall be subject to Strategic Envi-ronmental Assessment (SEA).*

(2) *For the avoidance of doubt, the plans, programmes and policies are those that are:*

(a) *subject to preparation or adoption by an authority at regional, national, county or local level, or which are prepared by an authority for adoption through a legisla- tive procedure by Parliament, Government or if regional, by agreements between the governments or regional authorities, as the case may be;*

(b) *determined by the Authority as likely to have significant effects on the environ- ment.*

(3) *All entities shall undertake or cause to be undertaken the preparation of strategic envi- ronmental assessments at their own expense and shall submit such assessments to the Au- thority for approval.*

(4) *The Authority shall, in consultation with lead agencies and relevant stakeholders, prescriberules and guidelines in respect of Strategic Environmental Assessments.*

Indicative areas that need to be subjected to SEA include: Sector specific policies, plans and pro- grammes, spatial and land use plans, regional development programmes, natural resource manage- ment strategies, legislative and regulatory bills (Acts), investment and lending activities of interna- tional aid and development assistance.

In principle, the proposed AEMP takes cognizance of multiple land uses and is considered as an integrated plan that must therefore be subjected to a Strategic Environmental Assessment.

1.8.2 SEA STUDY TEAM

This SESA for the AEMP 2020-2030 has been prepared by the PECS Limited, a consultancy firm registered under EIA/EA Regulations 2003 with expertise from various disciplines including ecologists, GIS experts, Planners, Tourism Experts, Policy analysts and Environmentalists under the guidance of a NEMA Lead Expert and Team Leader Dr. Bernard Kaaria.

The team members involved included the following:

Expert Name	**Qualifications**	**Contact**
Dr Bernard Kaaria Irigia	Team Leader-PhD, MSc, BSc-Conservation and Human /Wildlife issues, Tourism	0722773951
Ms Lisper Njeri	BLL-Advocate, Legal Issues	0725730143
Nicholas Bunyige	BSC, Environmental Planning and Management, GIS, Tourism	0701698811
Janet Umotho	Health and Safety issues	0722394549
Dr. Kariuki Chege	PhD, BSc Landuse and Hydlology	0715936997
Francis Mwaura	Bsc, Msc Planning and Policy Analysis	0721956291
Dr. Dorcas Ndanu Kalele	PhD,BSc–Climate Change Specialist	0725801666

1.9 REPORT STRUCTURE

The SEA report has been organized as follows: **Non-Technical Summary:** This section presents a summary of the SEA report. It broadly covers the SEA background, study methodology, study findings, base- line environmental conditions of the project area, environmental impacts, mitigation, environmental management plan, conclusions and recommendations.

Chapter 1 - Introduction: This chapter gives a background of the project, location, objectives and the Terms of Reference

Chapter 2 -Approach and Methodology: This chapter describes the approach and detailed methodology used to achieve the study objectives

Chapter 3 - Review of Policy, Legal and Institutional Framework: This chapter provides an overview of the policies, legislation and institutional frameworks relevant to the SEA study and implementation of the AEMP.

Chapter 4 - The Amboseli Ecosystem Management Plan: This chapter gives a detailed description of the AEMP**.**

Chapter 5 - Baseline Environmental Conditions: This chapter describes the existing physical, biological and socioeconomic environmental conditions of the project context.

Chapter 6 - Stakeholder and Public Consultations: This chapter details the stakeholders consulted, public consultation meetings held and emerging issues.

Chapter 7 - Impact identification, prediction and Mitigation: This chapter presents an analysis of the potential environmental and socioeconomic impacts and possible mitigation measures.

Chapter 8 - Strategic Environmental Management and Monitoring Plan: This chapter describes the management plan of the environmental and socioeconomic impacts. The chapter further describes the monitoring plan that includes costs and timelines.

Chapter 9 – Conclusion and recommendations – This chapter provides the conclusion and recommendations of the SEA study.

Chapter 2. APPROACH AND METHODOLOGY

2.1 OVERVIEW

The International Association for Impact Assessment (IAIA) defines an environmental impact assessment (EIA) as, "the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.

Strategic Environmental Assessment (SEA) on the other hand is a process of preliminary identification and consideration of the possible negative impacts into the environment and human health caused by implementation of any policy, plan or programme (PPP). Essentially, SEA is used to integrate environmental considerations into PPP. The goal of a SEA is to improve policies, plans or programmes in such a way as to minimize their potential negative environmental impacts, maximize positive impacts and ensure that negative impacts that cannot be avoided are properly managed and offset during implementation of the PPP.

The National Environment Management Authority (NEMA), relevant lead agencies, the community and other stakeholders supports the development of a Management Plan for the Amboseli Ecosystem as was the case with the 2008-2018 plan. The purpose of the 2020-2030 Management Plan, which was developed through a rigorous consultative process, is to protect fragile zones and ecological processes, en- sure compatible and sustainable development and harmonize the interests of development initiatives, local aspirations and conservation goals while borrowing from the experiences of the 2008-2018 plan. The Management Plan identifies land use options that are compatible with ecosystem conservation in line with the Constitution, aspirations of Vision 2030 and Sustainable Developments Goals (SDGs).

A major output of the SEA process and a component of this report is the Environmental and Social Management Plan (ESMP), the benchmark for the implementation of the mitigating measures and monitoring the environmental performance of the project. The SEA did not only concentrate on establishing impacts of the management plan but also considered the surrounding environs, and the long-term effects of these activities on environmental and socio-economic conditions of the Amboseli Ecosystem. This SEA took into consideration the existing environmental regulatory framework: Environment Management and Coordination Act, cap 387 (Environmental Impact Assessment and Audit) Regulations of June 2003, Water Act (2002), environmental standards, and sustainable use of natural resources. The EIA tech- niques and methodologies applied in this study have been adapted and refined from various methodologies and case studies used for projects elsewhere without losing sight and focus on the unique conditions and settings of the area.

2.1 SEA STUDY PROCESS

The SEA study process has focused on four programmes developed by the stakeholders as contained in the AEMP 2020-2030 and these include:

a) Community Livelihoods and Socio-economic Programme

This program aims at winning space for livestock and improving livestock and agricultural production in order to realize socio-economic aspirations of AE community within a sustainable framework**.**

b) Tourism Development and Management Programme

The aim of this programme is to develop high quality and sustainable tourism that optimizes benefits locally and nationally within agreed limits of acceptable use.

c) Natural Resource Management Programme

The aim of the programme is to ensure that the natural resource components and processes that shape Amboseli Ecosystem are clearly understood, sustainably managed and threats to the key natural resources processes are minimized.

d) Institutions and governance

The Ecosystem institutions and governance Programme is geared towards coordination of different programs in this management plan so that it can realize its purpose of conserving the ecosystem values and resources while delivering optimum benefits to the communities and stakeholders. The AE management challenges can only be managed through a rationalized process that promotes active engagement and partnership with all key stakeholders including KWS, landowners, investors and NGOS under central leadership of AET. The Governance Program therefore targets the stakeholders, management personnel and the support services. Broadly, this SEA has followed the key steps outlined below:

2.2 Screening

Screening was undertaken to determine whether the AEMP 2020-2030 required a Strategic Environmental Assessment (SEA) or not. Pursuant to Section 50 (d), (e) and Section 54 of the Environmental Man- agement and Coordination Act, 1999, the National Environment Management Authority (NEMA) facili- tated the development of a Strategic Environment Assessment (SEA) for the Amboseli ecosystem man- agement plan, taking into account social, cultural, economic, physical, and ecological factors. The SEA process was guided by the provisions of the Environmental Management Coordination Act (Amend- ment), 2015 section 57A and the National SEA Guidelines, 2012. The process also took into account a protected area planning framework and integrated land use planning provided for in the National Land Act. It also took into consideration the draft Kajiado Spatial Plan as developed by GEOMAP, the process that was carried out simultaneously with the development of the Amboseli Ecosystem Management Plan 2020-2030 and reviewed each action and activities proposed by the spatial plan through structured and wide stakeholder consultation and participation. As part of screening, the proponent prepared a SESA Brief describing the background to the AEMP 2020-2030 and why SESA was necessary and identifying direct and indirect impatcs as well as describing the process. The Brief was submitted to NEMA and a Brief approval to proceed to scoping stage, letter reference NEMA/SEA/5/2/080 dated 7th December, 2022 issued (Appendix 5a).

2.3 Scoping

The purpose of the scoping stage was to identify the key issues to be studied during the detailed SEA study, identify at an early stage what key receptors, impacts and project alternatives to consider, what methodologies to use, identify major constraints, define key objectives, state justification for the SESA, ouline project statement of work, draw stakeholder consultation program and identify who to consult and finally, develop SESA terms of reference.

Scoping was done through literature review (review of existing data, review of the 2008-2018 SEA and AEMP, maps and studies in the area) and wide stakeholder and public consultation. Following the scoping process, the anticipated impacts were evaluated on each of the environmental issues to be presented and discussed with the major stakeholders (professionals, key stakeholders and the public) during the detailed survey.

The proponent prepared a SESA Scoping report describing the the key issues to be addressed by the detailed study, how they will be handled, stakeholder identification, consulation process and levels of cosnsulataion. Following submission and upon review of the scoping report for SESA for the AEMP 2020-2030, Nema outlined Nine (9) issues to be addressed by the proponent before proceeding with the detailed study vide NEMA/SEA/5/2/80 dated 27th February, 2023.

On 28th March, 2023 NEMA Headquaters convened a site verification and site meeting for the SESA process for the AEMP 2020-2030 and three other Ranches in Loitokitok, Kajiado County, attended by experts from NEMA Kajiado County, Kenya wildlife Service, Water Resources Authority, Ministry of Interior, Habiat Planners Consultants, Planning and Environmnetal Consultancy Services limited, Officilas of Group Ranches, Big Life, Kenya Wildlife Research Institute, Survey of Kenya, Physical Planning Deartment and Amboseli Ecosystem Trust (List of Participants in Appendix 5a). This meeting was an opportunity for the consulatnts to clarfy further on the 9 point issues and receive feedback from NEMA, Lead Agency Experts, NGOs and Land owners.

The 9 issues raised by NEMA were comprehencevely responded to by the proponent via letter NEMA/SESA/5/2/080 dated 4th April, 2023. After review of the 9 point response, NEMA approved the scoping report for the SESA for AEMP 2020-2030, Kajiado County as per the approval letter NEMA/SEA/5/2/080 dated 13th April, 2023,(Appendix 5a), giving the leeway for the preparation of this detailed SESA Study Report.

2.4 Methodlogy for Detailed SESA study

The detailed SESA study included: site survey of the project area, assessment of existing condition of the ecosystem, land uses, baseline data collection of the area; review of relevant policies, legislation and institutional framework; analysis of reasonable alternatives; identification, analysis and prediction of environmental and social impacts; identification of appropriate mitigation measures and impact management strategies, development of Environmental and Social Management Plan (ESMP) and drawing of conclusion and recommendations

2.5 Consultation Meetings with the Client

The SEA scoping process started with a consultative meeting with the Client. This was specifically to geta clear background of the project, clarify the main objectives of the AEMP and establish the environmental, socio-economic and institutional concerns that need to be addressed in the SESA process.

2.6 Site Visits

Site visits were done to assess the existing conditions of the ecosystem and establish issues that needed to be considered in during the SESA scoping process. The main issues included vegetation, soils, sensitive ecological features, and area land uses, blockage of migratory corridors, neighboring land uses, water resources, geology, geomorphology and observable environmental and socio-economic challenges.

2.7 Review of Policy, Legislative and Institutional Frameworks

Relevant national and international laws concerning environmental conservation and protection were reviewed with respect to the Amboseli Ecosystem. The National policies and laws including the Kenya Constitution (2010), Kenya Vision 2030, National Environmental Policy (2013), National Water Policy, 2012 , water Act, 2016, Forest Policy, 2014, Environmental Management and Coordination Act (Amendment), 2015, County Government Act, National Land Commission Act, of 2012, Energy Act, CAP 314 of 2006, The Forest Conservation and Management Act, 2016, among others. In addition, the inter- national community recognizes the inter-relatedness of poverty and the environment, and views envi- ronmental quality as a key factor for achieving sustainable development. The United Nations Millennium development goals of 2015 have also been reviewed with a view to ensuring that their provisions and in particular goal number 7 that lays emphasis on ensuring environmental sustainability.

The various multilateral agreements ratified by Kenya including some of the following have also been reviewed.

- The Kyoto Protocol on the United Nations Framework Convention on Climate Change,
- The United Nations Convention to Combat Desertification,
- Vienna Convention for the Protection of the Ozone Layer
- Convention on Biological Diversity
- Ramsar Convention on Wetlands

2.8 Review of SESA Studies and Related Information

Review of the past related SEA studies was crucial in understanding the process and possible outcomes. Some of the SESA studies reviewed includes the Report for the Strategic Environmental Assessment (SEA) for the Amboseli Ecosystem Management Plan, 2008-2018, Strategic Environmental Assessment (SEA) for Expanded Irrigation Programme and National Economic Programme in The Tana and Athi Basins (Envilead Ltd, 2016), Strategic Environmental Assessment (SEA) for the Eldoret ICDC Industrial Park Master Plan, Strategic Environmental Assessment for Nairobi Integrated Urban Plan (NIUPLAN, 2013) and the Tana-River Catchment SEA of 2012. Other reports reviewed include county development plans, draft Kajiado county spatial plan 2018-2022 and environmental impact assessment reports of projects within the Amboseli Ecosystem.

2.9 Key Informant Interviews

The major informants were identified by the study team during the scoping phase with assistance from the client. The major stakeholders form a major part of the informants and included the Kajiado County government, government Lead agencies including Kenya Forest Servcie (KFS), Kenya Wildlife Service (KWS) Water Resoucce Authority (WRA), National Land Commission (NLC), NEMA, local administration, political leaders, and local community representatives, and Kajiado Groiup Ranches Land Owners Association.

2.10 Key Stakeholder Consultation

This study will identify and compile a list of all interested and affected parties (stakeholders) in Amboseli Ecosystem, establish communication channels and stakeholder roles and contributions in the SESA process as demonstrated in the next paragraphs.

The First Core Planning Team Meeting: The first Core Planning Team (CPT) meeting that undertook screeningppendix 2a) was held at African Conservation Center (ACC). This meeting laid down the engagement between the consultants and the plan owner and outlined the key issues to be undertaken during the planning and SESA process.

A comprehensive scoping and screening stakeholder meeting was held at Ol Tukai Lodge in Amboseli and was attended by majority land owners, researchers and investors in the tourism sector. During this meeting a decision to undertake Strategic Environmental Assessment for the Amboseli Ecosystem Management Plan was endorsed and all issues affecting the Ecosystem were raised. Issues affecting the ecosystem were identified and these are captured in the proceedings report (OlTukai Stakeholder Scoping Meeting Report in (Appendix 2b).

The second scoping stakeholder consultation forum was held at Kyaka Hotel, Machakos between 26th and 27th March 2019. Participants in the consultation consisted of key informants already interviewed and other professionals from NGOs, CBOs, Youth Groups and representatives of different groups within the ecosystem and those with a stake in the ecosystem. This meeting was facilitated by UNDP and the objective of the consultation was to present to stakeholder's opinions on key issues affecting the eco- system and make suggestions on improvements from previous plans implemented in the ecosystem.

The stakeholders were divided into six groups representing five **(5)** Amboseli Ecosystem Group Ranches and the National Park. The issues raised through brainstorming sessions of the groups formed the basis of constituting the **FOUR programmes** of the plan, namely **Community Livelihood and Socio-Economic**, **Tourism Development & Management, Natural Resource Management** and **Institutions and Governance**.

The four programmes informed the constitution **of four specialist** working Groups to further analyze the ecosystem issues. Some of the key issues include: Migratory corridors, grazing areas and plans, social cultural connections, swamps and water systems, and sustainable resource use decisions (Appendix 3: Proceedings of Kyaka Hotel Meeting).

2.11 Public and Land Owners Consultations

The Stakeholder Consultation Forum was followed by a series of Public and land owners Consultation meetings at the School of Field Studies (SFS) that brought together all the group ranches. The manage ment plan and SEA draft was presented to participants by the consultant. Participants were divided into interest groups and all issues affecting the ecosystem and possible solutions discussed.

2.12 Household Village Interviews

House hold village interviews were undertaken by the consultants and the plan owners guided by a structured questionnaire (Appendix 4) to capture the comments, concerns, opinions and suggestions of members of the communities not represented at the designated stakeholder consultation meeting ven ues.

2.13 Study Team Brain Storming Sessions

The consultants, plan owners (AET) and indeed all stakeholders held brain storming sessions during all stages of the planning process to synthesize the key issues to be addressed in the SEA and the Manage-ment plan. Names and photographs of stakeholders who participated in the AEMP 2020-2030 and SEA processes are attached in **appendix 5a and 5b** respectively for reference.

2.14 Consulation with NEMA SESA Experts and Lead Agencies

The consultant prepared the **SESA Brief** describing the background to the AEMP 2020-2030 and why SESA was necessary and identifying direct and indirect impatcs as well as describing the process. The Brief was submitted to NEMA and a Brief approval to proceed to scoping stage, letter reference NEMA/SEA/5/2/080 dated 7th December, 2022 issued (Appendix 5a)

2.16 Scoping

The consulatant prepared a SESA Scoping report describing the the key issues to be addressed by the detailed study, how they will be handled, stakeholder identification, consulation process and levels of cosnsulataion. Following submission and upon review of the scoping report for SESA for the AEMP 2020-2030, Nema outlined Nine (9) issues to be addressed by the proponent before proceeding with the detailed study vide NEMA/SEA/5/2/80 dated 27th February, 2023.

On 28th March, 2023 NEMA Headquaters convened a site verification and site meeting for the SESA process for the AEMP 2020-2030 and three other Ranches in Loitokitok, Kajiado County, attended by experts from NEMA Kajiado County, Kenya wildlife Service, Water Resources Authority, Ministry of Interior, Habiat Planners Consultants, Planning and Environmnetal Consultancy Services limited, Officilas of Group Ranches, Big Life, Kenya Wildlife Research Institute, Survey of Kenya, Physical Planning Deartment and Amboseli Ecosystem Trust (List of Participants in Appendix-----). This meeting was an opportunity for the consulatnts to clarfy further on the 9 point issues and receive feedback from NEMA, Lead Agency Experts, NGOs and Land owners.

The 9 issues raised by NEMA were comprehencevely responded to by the proponent via letter NEMA/SESA/5/2/080 dated 4th April, 2023. After review of the 9 point response, NEMA approved the scoping report for the SESA for AEMP 2020-2030, Kajiado County as per the approval letter NEMA/SEA/5/2/080 dated 13th April, 2023,(Appendix 5a), giving the leeway for the preparation of this detailed SESA Study Report.

Chapter 3: POLICY, LEGAL, REGULATORY AND INSTITUTIONAL FRAMEWORK

3.0 Overview:

There are numerous national and international policy, legal, regulatory and institutional frameworks that guide the requirements and preparation of a SEA. International policies include those ratified by the country concerning environmental issues. The national level provides the legal, regulatoryand institutional frameworks for EIA and SEA studies. The following section is a summary of the interna- tional, national and sectoral policies and principles considered in the study.

3.1 POLICY FRAMEWORK

3.1.1 International Conventions

a) United Nations Framework Convention on Climate Change

The primary purpose of the convention is to establish methods to minimize global warming and in particular emission of greenhouse gases. The Convention was adopted on 9th May 1992 and came into force on 21st March 1994. Kenya ratified the Convention on 30th August 1994 thereby committing to join the international community in combating the problem of climate change. The National Environmental Management Authority is the agency acting as the national focal point for this protocol.

The objective of the Convention is; "Stabilization of the greenhouse gas concentration in the atmos- phere at a level that would prevent dangerous anthropogenic interference with the climate system". A summary of steps envisaged to implement the Convention to achieve the objectives include:

- Preparation and implementation of abatement plans on climate change.
- Integration of climate change consideration into the development of environmental, social and economic policies.
- Promoting the sustainable management of sinks and GHG reservoirs.
- Promoting research and cooperation in information exchange.
- Development of education, training and public awareness raising programs.
- Promoting and developing research and systematic observation.

These activities are related to seeking and processing of information, building long-term scenarios, identification and evaluation of abatement options and strategies, climate change vulnerability evaluation of the most likely scenarios, policy design for the implementation of abatement and/or adaptation activities, evaluating the social and economic impacts of activities that are to be implemented and integrating them into the global and sector objectives, evaluating the viability of the scenarios foreseen.

The execution of these obligations implies that the implementation process of the AEMP should adopt environmentally friendly processes that sustain the ecosystem and reduce emission of greenhouse gases. Improvement and restoration of the ecosystem through afforestation will automatically reduce GHG emissions in the general area since vegetation acts like as carbon sequestration mechanism. However measures must be put in place to minimize emissions through appropriate technologies like gaseous emissions neutralization and ample green cover.

b) Vienna Convention for the Protection of the Ozone Layer

Intergovernmental negotiations for an international agreement to phase out ozone depleting substances concluded in March 1985 with the adoption of the Vienna Convention for the Protection of the Ozone Layer. This Convention encourages intergovernmental cooperation on research, systematic observation of the ozone layer, monitoring of CFC production, and the exchange of information.

The convention's declaration demands a voluntary attempt at monitoring development processes, their resultant emissions and the impacts on the ozone layer for purposes of knowledge and information sharing in order to combat the same. The management plan involves steps to restore wetlands and improve the ecosystem. These and the additional measures outlined in this SEA report will go a long way to minimize the emissions that affect the ozone layer.

c) Convention on Biological Diversity

This convention was prepared to ensure the conservation and sustainable use of biodiversity. Kenya signed the convention on 5th June 1992 and ratified the same on 26th July 1992. NEMA is the national focal point to this Convention. The provisions of this convention have been integrated in many laws of Kenya such as Wetlands, Riverbanks, Lake Shore and Sea Shore Management Regulations, 2009 (Legal Notice No. 19).

The management plan proposes restoration of swamps, river systems and other ecological systems which will ensure direct positive implications on the natural plant biodiversity. These measures coupled with the recommendations of this SEA report will greatly improve biodiversity conservation.

d) Ramsar Convention on Wetlands

The Ramsar Convention on Wetlands is primarily concerned with the conservation and management of Wetlands. Parties to the convention are required to promote prudent use of wetlands within their territories and to take measures for the conservation of the same. One way to conserve the wetlands (as proposed under this convention) is establishing nature reserves whether they are included in the Ramsar list or not. The wetlands include swamps, marshes, bogs, soaks, shallow lakes, ox-bow lakes, river meanders and flood plains, as well as riverbanks, lakeshores where wetland plants grow. They also include marine and inter-tidal wetlands such as deltas, estuaries, mudflats, mangroves, salt marshes, sea grass beds, shallow coral reefs and creeks.

The main aim of the management plan is restoration and improvement of existing wetlands and river systems within the ecological system which is in line with the objectives of this convention. This SEA proposes additional measures to improve, manage and conserve wetlands and other water bodies.

e) Convention on the Elimination of all Forms of Discrimination against Women

The Convention places explicit obligations on states to protect women and girls from sexual exploitation and abuse. The ecological system is located in a pastoralist area where cultural practices do not favour women rights. Additionally, tourism and related activities may infringe on human rights of women in the community. This SEA proposes measures to observe and adopt the guidelines of this convention during its implementation. The realization of a non-discriminatory environment can be realized through preventive and mitigation measures by the SEA on matters of social concerns.

f) Agenda 21 and Millennium Development Goals, 2015.

The Agenda 21 entails a comprehensive plan of action to be undertaken globally, nationally and locally by organizations affiliated to the United Nations, governments, and other groups in every area in which human's impacts on the environment. Kenya continues to implement Agenda 21 plan of action by incorporating its principles in national policies, plans, programmes and strategies. The provisions have been incorporated in the Management Plan to promote sustainable development, which comprises of the three (3) underlying tenets of economic, social and ecology, which are well outlined in the Environmental and Social Management Plan section of this SEA. This SEA has also taken cognizance of the eight (8) Millennium development goals of 2015 namely; Eradicating extreme poverty and hunger; achieving uni- versal primary Education; promoting Gender Equality and Empowering Women; Reducing Child Mortality; Improving Maternal Health; Combating HIV/Aids, Malaria and other Diseases; Ensuring Environmental Sustainability and Developing Global Partnerships for Development.

3.1.2 National Policy Framework

a) Kenya Vision 2030

As the country's development blueprint covering the period 2008-2030, Vision 2030 aims to achieve a "globally competitive and prosperous country with a high quality of life by 2030" (GOK, 2007). Specifically, Vision 2030 aims at transforming Kenya into "a newly industrializing, middle income country providing a high quality of life to all its citizens by the year 2030 in a clean and secure environment" (Ibid). The Vision is summarized in three pillars namely economic; social, and political pillars. Environment and water sectors fall under the social pillar while the tourism sector falls under the economic pillar. Additionally, in the vision, Kenya will seek to improve the capacity for adaptation to global climatic change and harmonize environment related laws for better environmental planning and governance. Specific

strategies will involve: promoting environmental conservation for better support to the economic pillar flagship projects; the application of economic incentives; and the commissioning of public-private partnerships (PPPs) for improved efficiency in water and sanitation delivery.

In this regard, the Vision cannot be achieved in the absence of a clean environment and this fits well with the management plan. The objectives of the Amboseli Ecosystem Management Plan are well aligned to the ideals of Vision 2030 as it meets objectives of the economic (tourism) and Social (envi- ronment and water) pillars through offering economic opportunities and protection of the environment. The positive impacts of improved tourism in the ecosystem will be employment, improved income generation and sustained social and health of the people.

b) Draft National Environment Policy, 2013

The draft National Environment Policy upholds the tenets of environment management and planning in Kenya by tracing the same to the Rio Earth Summit of 1992, which helped a great deal in raising the understanding of the link between environment and development (GOK, 2013). The policy recognizes the importance of the link between development and sustainable environment by stating the following key principles, among others;

(vi) Promotion and support SMEs and other industries to adopt appropriate environmentally sound technologies through provision of appropriate incentives and disincentives,

(vii) To develop and promote use of strategic environmental assessment in development plans, policies and programmes

Overall, the government recognizes the need to integrate environmental concerns in all policy, planning and development processes. It states thus in the policy document, "Integration of environmental considerations in all national, county and relevant sectoral policies, planning and development processes is critical if this policy is to achieve its goal and objectives' (GOK, 2013). This SEA report is geared towards showing how the proposed management plan fulfils, complies and assist the provisions and objectives of the Environmental Policy. Chapter eight of this report details all the possible impacts of the implementation of the plan and shows how the negative impacts will be mitigated.

c) National Environment Action Plan, 2009

This Plan recognizes the environmental challenges facing industries, among others as; generation and management of solid, liquid and hazardous waste; gaseous emissions; adoption of cleaner production technologies and compliance with EIA/EA; waste and water regulations; importation of obsolete technologies; unregulated importation of toxic and hazardous chemicals; air and noise pollution; inappropriate technology in energy production; and poor planning in respect to industrial and residential areas. The National Action Plan proposes, among others, the following interventions: enhance use of cleaner production systems, finalize and implement regulations on toxic and hazardous chemicals and finalize and implement regulations on noise pollution.

This SEA report clearly shows how the above propositions are tackled by the Management Plan according to the provisions for implementation of EMCA 1999 and the associated environmental regulations. Chapter eight of this report details all the possible impacts of the implementation of the management plan especially the tourist facilities and activities and shows how the negative impacts will be mitigated.

d) Sessional Paper No. 3 of 2009 on National Land Policy

The National Land Policy was formulated to provide an overall framework and define the key measures required to address among others, the critical issues on land, land use planning, environmental degradation, conflicts and unplanned proliferation of informal urban settlements, outdated legal framework, institutional framework and information management. The policy further encourages a multi-sectoral approach to land use, provision of social, economic and other incentives and put in place an enabling environment for investment, agriculture, livestock development and the exploitation of natural resources.

The main objective of the AEMP is to enhance and improve the ecosystem for the benefits of all stakeholders and the ecosystem and thus seeks to address and enact the principles of this policy. The ecological system is a national reserve surrounded by communal and private land and that specific land issue

needs to be addressed. The SEA outlines various recommendations for land use to enhance acceptability and appropriateness of the proposed activities.

e) National Water Policy, 2012

The National Water Policy is informed by the gains made on implementation of reforms in the water sector as anchored on the National Water Policy of 1999 (NWP 1999) also referred to as Sessional Paper No. 1 on National Policy on Water Resources Management and Development, the Water Act 2016, exist-ing related policy documents, and the globally recognized Integrated Water Resources Management (IWRM) approach (GOK, 2012). The policy aligns itself to the constitution in regard to creation of a sys- tem of democratic governance in which powers are devolved both vertically and horizontally in effortsto take measures to achieve the progressive realization of the cultural and socio-economic 'rights to wa- ter', an enabler of wealth creation and poverty alleviation (GOK, 2012). Most importantly, the key prin- ciple of the policy is to ensure a comprehensive framework for promoting optimal, sustainable, and eq- uitable development and use of water resources for livelihoods of Kenyans' (GOK 2012).

In this regard the AEMP proposes various water management and conservation issues among them pro-tection of wetlands and rivers, protection of critical water springs from degradation and promotion of rainwater harvesting technology and support establishment of Water Resource Users Associations (WRUAs) to enhance management of water sources. Addressing these issues will ensure protection of the affected water resources, supply and efficient utilization of water resources as well as the safe disposal of wastewater.

f) The National Forest Policy, 2014

The Forest Policy, 2014 provides a framework for improved forest governance, resource allocation, partnerships and collaboration with the state and non-state actors to enable the sector contribute in meeting the country's growth and poverty alleviation goals within a sustainable environment.

The main features of the revised policy framework for forest conservation and sustainable management include:

(a) The enactment of a revised forests law to implement this policy.

(b) The mainstreaming of forest conservation and management into national land use systems

(c) Clear division of responsibilities between public sector institutions where Ministry responsible for forestry provides an oversight role in national forest policy formulation, and regulatory function of the sector, thereby allowing Kenya Forest Service to focus on the management of forests on public land, and the role of the County governments in implementing national policies, County forest programmes in-cluding the delivery of forest extension services to communities, farmers and private land owners, and management of forests other than those under Kenya Forest Service.

(d) The devolution of community forest conservation and management, implementation of national for-est policies and strategies, deepening of community participation in forest management by the strengthening of community forestry associations, and the introduction of benefit-sharing arrange-ments.

(e)The preparation of a national strategy to increase and maintain forest and tree cover to at least 10% of the total land area and for the rehabilitation and restoration of degraded forest ecosystems, and the establishment of a national forest resource monitoring system. Status of the Forests and Forest Re- source Assessment reports will be published on a regular basis.

(f)The adoption of an ecosystem approach for the management of forests, and recognition of custom- ary rights and user rights to support sustainable forest management and conservation.

(g)The establishment of national programmes to support community forest management and aforestation/reforestation on community and private land.

(h)The preparation of national standards for forest management and utilization, and the development of codes of conduct for professional forestry associations.

(i) The introduction of a chain-of-custody system for timber and wood products, and legal origin and compliance certificates for exporters of timber and wood products.

g) Draft National Livestock Policy, 2019)

The Policy provides guidance to national and county governments in the development of the Livestock Industry in line with Vision 2030 and the Constitution of Kenya, 2010. The Policy interventions clearly spell out the role of each level of government while providing the necessary linkages. The Policy is con- sistent with current government strategies including the Vision 2030 and its Medium Term Plans (MTP's), the Big Four Agenda and the sector wide agricultural sector development strategies that have been developed to enable the achievement of national development objectives.

The Livestock Policy covers key issues relating to: farm animal genetic resources, livestock feeds and nutrition, inputs, animal diseases and pests, livestock marketing, research and extension and food security. In developing this sub-sector policy, it is appreciated that over 80% of Kenya's land mass is arid and semi-arid and livestock is the main source of livelihood in these areas. It is further noted that even in thenon-ASAL areas, the livestock sub-sector constitutes an important source of family income and food se- curity. In addition, livestock directly contributes to the foreign exchange earnings for our nation through export of livestock products, live animals and germplasm. As such, livestock development agenda in the country will be pursued towards commercialization.

The Policy recognizes the major stakeholders in the Livestock sub Sector and proceeds to define their respective roles. It also takes cognizance of the impact of livestock activities on the environment and other natural resources such as land, water and wildlife/livestock interaction. Social inclusivity and re- lated challenges have also been given attention due to their impact on the livestock sub sector.

This Policy recognizes the potential of the ASALs in livestock production and proposes options for the economic exploitation of these areas. The Policy takes cognizance of the contribution of the livestock value chain including non-conventional livestock species to the country's Gross Domestic Product.

The policy is expected to guarantee sustainability of livestock farming as a major economic thrust in the country. It is also expected to enhance Kenya's leadership position in livestock growth and development within the region and beyond.

One of the management programs proposed in the AEMP is the **Community Livelihoods and Socio Economic Programme whose** purpose is "to win space for livestock, and improve livestock and agricul- tural productivity to realize the socio-economic aspirations of the AE community within a sustainable framework". The draft National Livestock Policy will be a key guideline in the implementation of the community livelihood and socio-economic program.

h) National Industrialization Policy, 2012

Sessional paper no. 9 of 2012 on the National Industrialization Policy Framework for Kenya is about transforming Kenya into a globally competitive regional industrial hub.

This Sessional paper sets the base for increasing growth rates, generation of sufficient employment opportunities, and fostering Kenya's integration into the global economy.

It takes into cognizance the Vision 2030 aspirations; current status of the Kenyan economy; changes and development in the global economy; challenges of the industrial sector; and opportunities arising there from. It also takes into account some of the lessons learnt and best practices from Newly Industri- alized Countries (NICs). The policy is aligned to the Kenya Vision 2030 which aspires to transform Kenya into a middle income rapidly-industrializing country, "a globally competitive and prosperous nation, of- fering a

high quality of life to all its citizens" in a secure and healthy environment.

This policy framework focuses on value addition for both primary and high valued goods; and linkages between industrial sub-sectors and other productive sectors to drive the industrialization process and aims at providing strategic direction for the sector growth and development.

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For purpose of this policy, the industrial sector is defined as comprising the manufacturing, construc- tion, mining and quarrying sub-sectors. The Industrialization policy will play a key role in guiding sus- tainable implementation of related activities proposed by programs such as tourism in the AEMP 2020- 2030.

i) Energy Policy, 2012

The broad objective of the national energy policy is to ensure adequate, quality, cost effective, and af fordable supply of energy to meet development needs while protecting and conserving the environ- ment. The specific objectives are to:

- Provide sustainable quality energy services for development
- Utilize energy as a tool to accelerate economic empowerment for urban and rural develop- ment
- Improve access to affordable energy services
- Provide an enabling environment for the provision of energy services
- Enhance security of energy supply
- Promote development of indigenous energy resources, and
- Promote energy efficiency and conservation as well as prudent environmental, health and safety practices

The management plan and SEA lays out strategies to monitor the range condition and develop measuresto improve the poor range condition within the Amboseli Ecosystem which must involve promotion of alternative sources of energy apart from wood and charcoal.

j) Public Health Policy, 1994

The Kenya Health Policy Framework set out the policy agenda for the health sector up to the year 2010. The policy includes strengthening of the central policy role of the Ministry of Health (MOH), adoption of an explicit strategy to reduce the burden of disease, and definition of an essential cost-effective healthcare package. To operationalize the health policy framework, the paper on National Health Sector Strategic Plan (NHSSP, 1999-2004) was developed in 1994. The plan focused on the essential priority packages based on the burden of disease and the required support systems to deliver services. Major players in the health sector include the government represented by the Ministry of health and the local government, private sector, and non-governmental (NGOs). The implementation of the devolved sys- tem of government has led to the active involvement of the lower levels of government albeit with ma- jor challenges. The role of the county governments includes implementation of the health policies, maintaining quality standards, and coordinating and controlling all county public health activities. Public health challenges in urban areas revolve around poor sanitation, unhygienic environment, and non-adherence to planning and building regulations.

The AEMP and SEA guidelines to equitable sharing of water resources, management of solid and liquid waste which ensures improved cleanliness and health of the local community, tourists and workers.

k) Economic Recovery for Wealth and Employment Creation Strategy, 2006

The overall goal of the strategy is to ensure clear improvement in the social and economic well-being of all Kenyans; thereby giving Kenyans a better deal in their lives, and in their struggle to build a modern and prosperous nation (GOK, 2006). This strategy paper has commanded a great deal of attention in re- cent years and essentially subsumes the Poverty Reduction Strategy Paper (PRSP). The key areas cov- ered in the strategy include, among others; reforms in trade and industry and safeguarding the envi- ronment and natural resources.

Some of the main management objectives of the AEMP that improve the welfare of the community include enhancing tourism returns to local communities, diversification, promotion and marketing of tourism and visitor experience, reduction of human-wildlife conflict, community benefits from natural resource use diversified and equity in benefit sharing ensured, improved livestock productivity and improved livestock production and marketing. These among others, will result in improvement of infrastructure, livelihoods and the economic status of the local community and investors through equitable and environmentally friendly exploitation of the ecological system. The SEA also outlines the mitigation measures for any adverse environmental impact that may result in the exploitation of the ecosystem.

3.2 LEGAL FRAMEWORK

3.2.1 Constitution of Kenya, 2010

The Constitution is the supreme law of the land. It lays the foundation on which the wellbeing of Kenya is founded. The constitution's provisions are specific to ensuring sustainable and productive management of land resources; transparent and cost effective administration of land; and sound conservation and protection of ecologically sensitive areas. Specifically, Chapter 2 Part 4, on the Bill of Rights, section 42 provides that every person has the right to a clean and healthy environment, which includes the right: (a) to have the environment protected for the benefit of present and future generations through legislative and other measures. Article 69 outlines specific provisions on the environment; subsections (d) Encourage public participation in the management, protection and conservation of the environment, and g) provides for elimination of processes and activities that are likely to endanger the environment.

The AEMP has made provisions to ensure a clean and healthy environment through the environmental and social management plan. Provisions for optimal utilization of natural resources particularly forests, water and energy through promotion of efficiency and conservation measures are well outlined in the plan and SEA. The SEA further provides for the management of solid and liquid wastes, reduced pollu- tion and management of the natural resources including water, land and wildlife.

3.2.2 Environment Management and Coordination Act, CAP 387 of 1999

Environmental Management and Coordination Act, 1999 describes the legal and institutional framework for environmental management. General principles of the act are that every person in Kenya is entitled to a clean and healthy environment and has the duty to safeguard and enhance the environment. The entitlement to a clean and healthy environment includes the access by any person in Kenya to various public elements or segments of the environment for recreational, educational, health, spiritual and cultural purposes. Reference to this act is made together with other relevant regulations that form the environmental legal framework namely, the Environment (Impact Assessment and Audit) Regulations formulated in 2003. Based on these laws and regulations, relevant rules and a series of environmental criteria were developed to facilitate enforcement of the law. These are discussed below:

3.2.2.1 Environmental (Impact Assessment and Audit) Regulations, 2003

The Environmental (Impact Assessment and Audit) Regulations, state in Regulation 3 that "the Regulations shall apply to all policies, plans, programmes, projects and activities specified in PartIV, Part V and the Second Schedule of the Act"(ER-EIA, 2003). Section 42 and 43 address Strate- gic Environment Assessments; section 42(1) requires lead agencies in consultation with NEMA tosubject all policy, plans and programmes for implementation to a Strategic Environment As- sessments while regulation 42 (3) commits the government and all lead agencies to incorporate principles of SEA in the development of sector or national policy.

3.2.2.2 Air Quality Regulations, 2013 (Legal Notice No. 34)

These regulations spell out levels of ambient air quality standards that should not to be exceed- ed. Part II prohibits an individual from causing immediate or subsequent air pollution. Section 6 states that "no person shall cause or allow emission of the priority air pollutants prescribed in the Second Schedule of the regulations to cause the ambient air quality limits prescribed in the First Schedule to be exceeded" (AQR, 2013).

3.2.2.3 Waste Management Regulations, 2006 (Legal Notice 121)

These regulations provide for the management of waste. Part II regulation 4 (1) provides that noperson shall dispose of any waste on a public highway, street, road, recreational area or in any public place except in a designated receptacle; regulation 4 (2) further states that a waste gen- erator shall collect, segregate and dispose such waste in the manner provided for under these regulations and finally; and regulation 5 (1) provides for cleaner production methods. It states that a waste generator shall minimize the waste generated by adopting the following cleaner production methods:

i. Improvement of production process through; conserving raw materials and energy; Eliminating the use of toxic raw materials; and Reducing toxic emissions and wastes;
ii. Monitoring the product cycle from beginning to end by: Identifying and eliminating po- tential negative impacts of the product; enabling the recovery and re-use of the product where possible; and incorporating environmental concerns in the design and disposal of a product.

This SEA report has incorporated the Environmental and Social Management Plan and Environ- mental Monitoring Plan to ensure that the waste management regulations are complied.

3.2.2.4 Water Quality Regulations, 2006 (Legal Notice No. 120)

This regulation has provisions for ensuring water quality standards by actors and players in the water sector. Regulation 8 provides for all operators and suppliers of treated water, container- ized water and all water vendors to comply with the relevant quality standards in force. Regula- tion 9 provides for water quality monitoring and states that the Authority in consultation with the relevant lead agency, shall maintain water quality monitoring for sources of domestic water at least twice every calendar year.

3.2.2.5 Controlled Substances Regulations, 2007 (Legal Notice No.73)

According to these regulations, producers and/or importers of controlled substances are re- quired to include a material safety data sheet. Persons are prohibited from storing, distributing, transporting or otherwise handling a controlled substance unless the controlled substance is ac- companied by a material safety data sheet. Manufacturers, exporters or importers of controlled substances must be licensed by NEMA. Further, any person wishing to dispose of a controlled substance must be authorized by NEMA. The licensee should ensure that the controlled sub- stance is disposed of in an environmentally sound manner. These regulations also apply to any person transporting such controlled substances through Kenya. Such a person is required to ob- tain a Prior Informed Consent (PIC) permit from NEMA.

Persons handling controlled substances are required to apply for a permit from NEMA. Any li- censee who imports or produces any controlled substances is required to ensure that all personswho receive or buy such substances sign a declaration form. Where an imported controlled sub- stance does not meet set specifications, NEMA shall require the licensee to return the controlledsubstance to the country of origin at his/her cost or pay to NEMA the cost of disposing of the controlled substance. The EEIP Master Plan and this SEA report and specifically the Environmental and Social Management and Monitoring Plans have incorporated the handling of controlled substances to ensure safety of all the actors reduced harm and/or injury is caused to the people working in the sector and to the environment.

3.2.2.6 Wetlands, Riverbanks, Lake Shore and Sea Shore Management Regulations, 2009- Legal Notice No. 19

Management of wetlands is guided by the following principles:

- Resources on the river banks, lake shores and the sea shore shall be utilized in a sustain-able manner;
- Environmental impact assessment as required under the Act shall be mandatory for allmajor activities on river banks, lake shores and the seashore; and
- Special measures, including prevention of soil erosion, siltation and water pollution willbe enforced.

Section 9 clause 2(c) provides that a strategic environmental assessment be conducted for spe- cific wetlands management plans. On use of wetlands, section 11 (1 and 2) details the activities permitted and environmentally sound to ensure sustainable management of the wetlands.

In this regard the AEMP proposes various water management and conservation issues among them protection of wetlands and rivers, protection of critical water springs from degradationand promotion of rainwater harvesting technology and support of establishment of Water Re- source Users Associations (WRUAs) to enhance management of water sources.

3.2.2.7 Noise and Excessive Vibration Pollution (Control) Regulations, 2009(Legal Notice No. 25)

These rules provide for the noise regulations that apply to every factory, premises, place, pro- cess and operations to which the provisions of the Factories and Other Places of Work Act (Cap 514) apply. Section 1.4 of the legislation details the permissible levels of noise in a work place; section 5 and 6 elaborate on the recommended noise prevention programme as well as meas- urement and records to be undertaken by the contracted company during construction and op- erational phases of the project.

A great amount of noise and vibrations are expected in the activities proposed in the AEMP suchas construction of roads and tourist infrastructure and these regulations will serve as guidelines to the investors. Specifically, the SEA has incorporated the Environmental and Social Management Plan that will ensure the tolerable Limits of Noise and Vibrations are not exceeded andthat the recommendations in the regulations are adhered to.

3.2.2.8 County Government Act, No 17 of 2012

The County Government Act aims at giving effect to Chapter 11 (Devolution) of the constitution and provides for the county government powers, functions and responsibilities in the delivery of servicesand for connected purposes. The act emphasizes the need for a consultative and participatory approach where the principles of planning and development facilitation in a county serve as a basis for engage- ment between the county government and the citizenry, other stakeholders and interest groups (Article 102 (i)).

The SEA study involved a participatory process whose hallmarks are public participation and stakeholder consultations to ensure that all their environmental and social concerns are incorporated. Therefore, individuals and institutions directly or indirectly affected by implementation of the AEMP are entitled to

express their interests and have them respectively taken into consideration in the decision-making pro- cess. Additionally, County Governments must be involved in matters of public land, water, health and infrastructure development in their respective areas of jurisdiction to avoid conflicts with county devel- opment plans.

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3.2.2.9 Physical Planning Act, Cap 286 of 1996

The main objectives of this Act are inter alia to provide for proper coordination between the different levels of government in the preparation and implementation of the various physical development plans. Part IV of the act specifically provides for the preparation of physical development plans for the selectedarea and selected purpose for the concerned administrative unit, while Part V, on "control of develop- ment" provides for powers of planning authorities in development permission including application and approval of development proposals. The act stipulates development application procedures and for ap- provals in regard to: (i) change of use: change in the use of land; (ii) extension of use, that is, adding oth- er use to the land (20% of the total land); (iii) amalgamation: combination of the plot or use of land; and,sub-division that is, separating the use of the land.

The provisions are crucial in the AEMP as they give some guidelines and controls since some of the issues of the plan includes alteration of use and sub-division in the case of ranches. This will give guidelines to the stakeholders in implementation of the various actions.

3.2.2.10 National Land Commission Act, CAP 5D of 2012

This is an act of parliament that provides for the functions and powers of the National Land Commission, which among others gives effect to the Constitution, the objects and principles of devolved government in land management and administration, and for connected purposes. In relation to the SEA study, this Act provides for:

a. The management and administration of land in accordance with the principles of set outin Article 60 of the Constitution and the national land policy,
b. A linkage between the National Land Commission, county governments and other institutions dealing with land and land related resources

Section 19 (1) provides that the commission shall, subject to the physical planning and survey requirements, process applications for allocation of land, change and extension of user, subdivision of public land and renewal of leases.

3.2.2.11 Energy Act, CAP 314 of 2006

The Energy Act was enacted to amend and consolidate the laws relating to energy, to provide for the establishment, powers and functions of the Energy Regulatory Commission (ERC) and the Rural Electrification Authority (REA), and for connected purposes. Sections 46, 47, 48, 49, 50, 51, 52, 53 and 54 provide for procedures for acquisition (whether through willing surrender or compulsorily) of and the use ofway leaves. Specifically, section 53(1) provides that for the purpose of the conveyance, transmission, or supply of electrical energy, a licensee may erect, fix, install or lay any poles, wires, electric supply lines, power or other apparatus in, upon, under, over or across any public streets, roads, railways, tramways, rivers, canals, harbours or government property, in the manner and on the conditions as provided in thisAct.
The most crucial provision for this SEA study is the environmental, safety and health standards compliance for electrical installations such as electrical fences proposed for the national reserve. The AEMP and this SEA study re-emphasize the provisions of this act through analyses of any possible negative and positive impacts and respective mitigation measures for the negative impacts.

3.2.2.12 The Forest Conservation and Management Act, 2016 (No. 34 of 2016).

This is an Act of Parliament to give effect to Article 69 of the Constitution with regard to forest resources; to provide for the development and sustainable management, including conservation and rational utilization of all forest resources for the socioeconomic development of the country and for connected purposes.

This Act makes provision for the conservation and management of public, community and private forests and areas of forest land that require special protection, defines the rights in forests and prescribes rules for the use of forest land. It also makes provision for community participation of forest lands by community forest association, the trade in forest products, the protection of indigenous forests and the protection of water resources.

Sec 74 -Cooperation Regarding Cross border Forest Resources: The Director General may, with the approval of the Board, develop management plans for purposes of sustainable management of cross-border forest resources. 75. (1) where a provision of this Act requires a person to conserve or protect the environment, the relevant provisions of the Environmental Management and Coordination Act, 1999, shall also apply with respect to the manner in which the conservation or protection shall proceed. (2) No user rights or other licence or permit granted under this Act shall exempt a person from complying with the relevant provisions of the Environmental Management and Co-ordination Act, 1999, or any other written law concerning the conservation and protection of the environment. (3) A user or other related right shall not be granted under this Act where the requirement for a strategic environmental, Cultural, economic and social impact assessment licence under the Environmental Management and Co-ordination Act, 1999, has not been complied with.

The Forests Act provides for the establishment, development and sustainable management including conservation and rational utilization of forest resources for the socio-economic development of the country. The Act provides for the creation of the Kenya Forest Service with the responsibility to: Provide forest extension services by assisting forest owners, farmers, and associations in the sustainable management of forests; Promote the empowerment of associations and communities in the control and management of forests, and; Manage forests on water catchment areas primarily for purposes of water and soil conservation, carbon sequestration, and other environmental services. The Kenya Forest Service is a key stakeholder in the management of the natural resources and will play major role in the implementation of the AEMP.

3.2.2.13 Wildlife Conservation Act 2013

This Act may be cited as the Wildlife Conservation and Management Act, 2013. 2. This Act shall apply to all wildlife resources on public, community and private land, and Kenya territorial waters. 3. (1) In this Act, unless the context otherwise requires— "aircraft" means any type of aeroplane, airship, balloon or kite, whether captive, navigable or free, and whether controlled or directed by human agency or not; "alien species" means a species that is not indigenous to Kenya or an indigenous species translocated to a place outside its natural distribution range in nature and which in its natural habitat is usually found in nature; "animal" means any species or the young or egg thereof, but does not include a human being or any animal which is commonly considered to be a domestic animal or the young or egg thereof; "author-ized officer" includes a member of, the Service, a forest officer, a fisheries officer, a police officer, a cus- toms officer, an administrative officer, or any person so designated under this Act; "biodiversity" means the variability among living organisms from all sources including ecosystems and the 1243 2013 Wildlife Conservation and Management No. 47 ecological complexes of which they are a part, compassing eco- system, species and genetic diversity;

3.2.2.14 Community Land ACT 2016

AN ACT of Parliament to give effect to Article 63 (5) of the Constitution; to provide for the recognition, protection and registration of community land rights; management and administration of community land; to provide for the role of county governments in relation to unregistered community land and for connected purposes [Act No. 27 of 2016.]

3.2.2.15 The Physical and Land Use Planning ACT, 2019

An ACT of Parliament to make provision for the planning, use, regulation and development of land and for connected purposes ENACTED by the Parliament of Kenya

3.2.2.16 The Land ACT, 2012 No. 6 of 2012

An ACT of Parliament to give effect to Article 68 of the Constitution, to revise, consolidate and rationalize land laws; to provide for the sustainable administration and management of land and land based re sources, and for connected purposes

3.2.2.17 Tourism Act

[Date of commencement: 1st September, 2012.] An Act of Parliament to provide for the development, management, marketing and regulation of sustainable tourism and tourism-related activities and services, and for connected purposes

3.2.2.18 The Building Code of 1997

The Code states that prior to erection of buildings an application, submission of plans and payment of fees are to be made to the municipal/county council. It also contains requirements relating to certificates for occupation of premises. These are adoptive bylaws under the now repealed Local Government Act and are under revision. These will be sought by respective investors in development of tourist structures. The SEA has provided for adequate mitigation measures against any potential environmental impacts of the developments in the EMMP Section.

3.2.2.19 KS Code (2009): Building Code of the Republic of Kenya (2009 Edition)

These Regulations cover provisions for national, regional and local physical planning, siting, site operations, building design, building and infrastructure services, disaster risk management on construction sites and maintenance of all buildings as contained in these Regulations.

3.2.2.20 Water Act, Cap 372 of 2007

The act provides regulations for the management and development of water resources, water supply and sewerage development in all parts of the country with the objective of conserving, protecting and allocating such resources in order to meet the various needs while ensuring safe disposal of wastes. Part II, section 18, of the act provides for national monitoring and information system on water resources while sub-section 3 allows the Water Resources Authority (WRA) to demand from any person or institution, specified information, documents, samples or materials on water resources. Furthermore, the act vests the rights of all water to the state, and the power for the control of all bodies of water with the Minister, in consultation with the water catchments boards, it aims at among others: (i) provision of and conservation of water; and, (ii) apportionment and use of water resources.

The AEMP has made provisions for conservation, monitoring and sharing of available water resources in the ecosystem. The AEMP proposes various water management and conservation issues among them protection of wetlands and rivers, protection of critical water springs from degradation and promotion of rainwater harvesting technology and support establishment of Water Resource Users Associations (WRUAs) to enhance management of water sources. This SEA report contains an Environmental and Social Management Plan to ensure efficient utilization of the water resources in the area.

3.2.2.21 Occupational Health and Safety Act (OSHA), 2007

This is an Act of Parliament, which provides for the safety, health and welfare of all workers and all persons lawfully present at workplaces. The act further provides for the establishment of the National Council for Occupational Safety and Health and for connected purposes. The act repealed the Factories and Other Places of Work Act. It applies to all workplaces where any person is at work, whether temporarily or permanently and therefore will apply to the project during implementation of objectives that involve construction.

3.2.3 EMCA (Amendment 2015)

This Act may be cited as the Environmental Management and Co-ordination (Amendment) Act, 2015.
(1) The Environmental Management and Coordination Act, 1999, in this Act referred to as the "principal Act" is amended in section 2- (a) by deleting the definition of "coastal zone" and inserting the following new definition- 'coastal zone" means the geomorphologic area where the land interacts with the sea comprising terrestrial and marine areas made up of biotic and abiotic components or systems coexisting and interacting with each other and with socio-economic activities; (b) by deleting the definition of "District Environment Committee"; (c) by deleting the definition of "District Environment Action Plan"; (d) bydeleting the definition of "Provincial Environment Committee"; (e) by deleting the definition of "exclu- sive economic zone" and inserting the following new definition- "exclusive economic zone" has the meaning assigned to it by the United Nations Convention on the Law of the Sea; (0 by deleting the defi- nition of "local authority";

3.3 INSTITUTIONAL FRAMEWORK

3.3.1 National Environment Management Authority (NEMA)

The authority is the key agency in charge of coordination of environment management activities, ensure compliance environmental guidelines and advise government on legislative and measures concerning environment management. NEMA is also the national focal point for enforcement of the principals of international policies on environment. EMCA (1999) provides NEMA with powers to approve or disapprove major developments in wildlife conservation areas based on proper planning and assessment of environmental impacts outlined in SEA studies (GoK, 1999b).

The authority has to ensure compliance of the AEMP based on an approved SEA study by the project proponent. This is done with a view to ensuring the proper management and rational utilization of environmental resources. NEMA a key player in all environmental matters in the country, and is the approving authority of the SEA and EIA studies/reports prepared under this project.

3.3.2National Environment Council

The National Environment Council (NEC) is established under Section 4(1) of the Environmental Management and Coordination Act no. 8 of 1999. The key functions of the Council, among others, include;

(a) Set national goals and objectives and determine policies and priorities for the protection of the environment;
(b) Promote cooperation among public departments, local authorities, private sector, non-governmental organizations and such other organizations engaged in environmental protec- tion programmes

3.3.3 National Environmental Complaints Committee

The functions of the Complaints committee are to:

a) Investigate any allegations or complaints against any person or against the Authority in rela- tion to condition of the environment in Kenya; or on its own motion, any suspected case of environmental degradation, and to make a report of its findings together with its recommendations thereon to the Council;
b) Prepare and submit to the Council, periodic reports of its activities, which report shall form part of the annual report on the state of the environment under section 9(3); and
c) Perform such other functions and exercise such powers as may be assigned to it by the Council.

3.3.4 Ministry of Water and Irrigation

The ministry is responsible for the establishment, coordination and operationalization of the water service boards in Kenya. Thus, all the service boards through the relevant acts are expected to effectively and efficiently provide services related to water resources management and water projects' development. The realization of the water sector in the AEDP will involve this ministry through the Water Management Authority.

3.3.5 County Environment Committee

Under the Environmental Management and Co-Ordination (Amendment) Act, 2015 No. 5 of 2015, County Environment Committee is constituted by the Governor in consultation with the relevant county organs. The role of the committee includes the proper management of the environment within the county and developing a county strategic environmental action plan every five years. For purposes of this plan and SEA study, apart from being a key stakeholder, the county government shall provide an oversight role on environmental issues.

3.3.6 Water Service Providers

These are corporate entities established under Cap 486 of the laws of Kenya. The entities are fully owned by the county government. The companies are is in charge of water supply in their defined area of service and is therefore expected to be a major stakeholder in the AEMP

CHAPTER 4: AMBOSELI ECOSYSTEM MANAGEMENT PLAN (2020-2030)

4.1 OVERVIEW

The Amboseli ecosystem is one of Kenya's major biodiversity center known for its scenic, landscape, wildlife, cultural and social attractions. It is located in Kajiado District and covers approximately 5,700 km^2, stretching between Mt. Kilimanjaro, the Chyulu Hills and Tsavo West National park and the Kenya/Tanzania Border (Figure 2). The ecosystem is a globally important pastoral/wildlife ecosystem that is internationally recognized as a UNESCO Biosphere Reserve because of the ecosystem's significance as anexample of a conservation area that fulfils the three functions of conservation, research and development (KWS, 2008). For decades, the ecosystem was characterized by low environmental degradation, and was endowed with numerous and diverse biota types. But in the recent past, it has been under siege from; rising human population, haphazard developments such as unplanned tourism facilities, borehole drilling, expanding farming activities especially irrigated agriculture, land subdivision, unplanned urban settlements, Maasai sedentarization and expansion of settlement clusters in the group ranches. Some of these activities have increasingly constrained the historical and traditional free movement and dispersal of wildlife in the ecosystem. They have also led to environmental degradation, destruction and encroachment of prime wildlife habitats, and competition between humans, wildlife and livestock for essential resources like pasture and water. The resultant prevalence of human-wildlife interface has precipitated all types of human-wildlife conflicts (HWC) and wildlife poaching for bush meat. Since there's insignificant compensation for losses associated with human-wildlife conflicts, most locals have a negative attitude towards wildlife and its conservation. Collectively, these problems in the ecosystem have, and continue to be a threat to preservation of wildlife and the landscapes it has historically used, and in the long-term it threatens the national, regional and international conservation role of the Amboseli region (Western etal 2018)

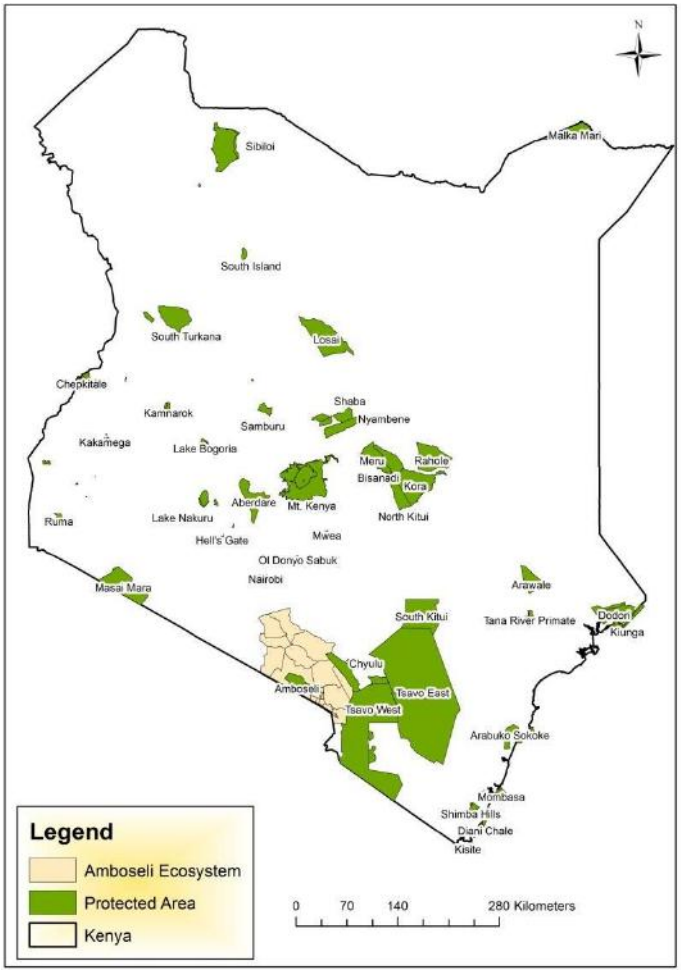

Figure 2. ***Amboseli Ecosystem: National Setting***

Consequently, the Amboseli Management Plan (2020-2030) was developed to ensure sustainable environmental management of the ecosystem and enhance ecological conservation efforts of the Amboseli Management Plan (2008-2018), which was faced with many challenges among them including plan development process, approval mechanism, enforcement, inadequate participation and coordination. The 2020-2030 AEMP is expected to address these challenges and ensure that it guides sustainable management of the Amboseli ecosystem by all stakeholders.

The purpose of the plan is to; protect the fragile zones in the ecosystem and control development and therefore realize harmony between multiple development initiatives, local socio-economic aspirations and environmental conservation goals. It also enables identification of future land use options that will ensure sustainable development of the ecosystem in line with Kenya's new Constitution and aspirations of Vision 2030 and other planning frameworks among which is the Sustainable Development Goals (SDGs) and the big four Agenda for the period 2017-2022.

The New plan will develop programs and it is these programs that will generate impacts during the implementation phase. The purpose of the SEA is therefore to assess the impacts of the programs (activities) and propose reliable mitigation measures. The Amboseli Ecosystem Management Planning and the Strategic Environmental Assessment processes ran concurrently.

4.1 Major Environmental and Social Issues of Concern Identified By the 2020-2030 AEMP

Environmental Issues

Issue 1: Grazing and browsing pressure

There is increasing grazing and browsing pressure on the Amboseli rangelands and national park causing decline in plant and animal productivity and diversity and contributing to increase in human wildlife conflict. This is mainly as result of Dry land farming, wetland irrigated farming, sedentary pastoralism and land use segregation effects.

Issue 2: Loss of habitat

Subdivision, farming, towns and villages have greatly reduced the area available for wildlife and pastoralism in the AE. The Kaputei - area is heavily settled and fenced leading to virtual collapse of migratory patterns. Namelok and Kimana swamps, the Lolturesh River down through the Soit Pus Swamp and areas around Iltilal has also been subdivided, settled and farmed. These developments have substantially reduced the areas in eastern Kajiado still open to wildlife and mobile livestock herds. Drought refuges for both wildlife and livestock have been lost, and rangeland productivity and recovery has similarly been lost.

Issue 3: Poaching

Poaching has declined to manageable levels since 2008 due to the formation of a large well-managed community ranger force.

Issue 4: Drought

Climate change effects have continued to manifest themselves through rising frequency and severity of drought, which has a direct impact on livelihoods of the local pastoralist community. For instance, the 2009 drought was far more severe than in the 1970s due to the restricted space and pasture available tolivestock and wildlife. Over 95 percent of the wildebeest, 60 percent of the zebra and cattle, and a quar- ter of the elephants died in the course of six months. Wildebeest numbers dropped to 200 and would unlikely have recovered without the immigration of herds from Tsavo West and Ngaserai in Tanzania.

Issue 5: Reduction in woody vegetation

Reduction of woody vegetation has continued and includes an extensive loss of shrub and herb cover. The reduction in woody vegetation has caused loss of habitat and species diversity in Amboseli National Park and a reduction in the diversity of large herbivores. The most conspicuous loss has been in the browsing species associated with the woodlands—impala, giraffe, bushbuck and lesser kudu.

Issue 6: Loss of grassland

A far greater threat to the Amboseli ecosystem is the loss of grassland and the attendant drop in pasture production due to heavy grazing pressure. The loss of productivity caused intensified "droughts" (measured by lack of pasture) and a heavy loss of livestock and wildlife in 2009. The results of the long-term counts of livestock and wildlife show that heavy sustained grazing is primary cause of livestock and wildlife losses in the Amboseli ecosystem. The results do show, however, that the losses can be reversed through an ecosystem-wide integrated AEMP.

Social Issues

Issue 7: Land subdivision

The biggest threat to the viability of the Amboseli ecosystem and the free-ranging wildlife herds of East African savanna ecosystems in general is land subdivision. The threat grew with the clamor for subdivision on the group ranches across the Amboseli ecosystem. Fortunately, the large fallout from the resale of Maasai lands resulting from the subdivision of Kimana Group Ranch led Maasai leaders to call a halt and take stock of other land use options. In addition, the Community Land Act, 2016 halts all further subdivision of group ranches, pending registration of all members, including women. Further, the Act calls for all group ranches to draw up land use plans.

Issue 8: Human-Wildlife Conflicts

Human-wildlife conflict has risen sharply to the point of undercutting gains in community-based conservation. This is manifested mainly in form of livestock predation, crop raiding and human injury and death.

Issue 9: The social, economic and demographic changes

The social, economic and demographic changes underway among the predominantly pastoral community of the Amboseli ecosystem are causing fundamental changes in livelihoods, both out of necessity and choice. In the long run, social and economic development is likely to relieve the pressure on land. Meanwhile, for the many pastoralists who remain herders, land subdivision, sedentarization and a loss of seasonal grazing decreases their mobility, herd sizes and resilience to drought. The same pressures pose severe threats to wildlife in the Amboseli ecosystem and national park and intensify competition between people and wildlife over shrinking space and resources.

The changes have transformed Amboseli from a savannah ecosystem dominated by free-ranging wildlife and livestock populations driven largely by rainfall, to a highly transformed landscape shaped by human activity.

The issues above have been discussed in stakeholders meetings in Amboseli (Ol Tukai) and Machakos to inform development of four (4) major programs discussed below. It is the activities envisaged in these programs which were analyzed for impacts, mitigation measures proposed and strategic environmental management and monitoring plan (SEMMP) suggested.

4.2 AEMP Management Programmes

4.2.1 Community Livelihoods and Socio-Economic Programme

The purpose of this program is "to win space for livestock, and improve livestock and agricultural productivity to realize the socio-economic aspirations of the AE community within a sustainable framework"

The management objectives discussed in this program are geared towards profitable utilization of resources among which is livestock improvement, profitable pastoralism and farming to make agriculture attractive and honourable to the young and educated. This will in turn modernize agriculture as educated people will be more receptive to new ideas and technologies in farming for better food production, economic returns and food security.

Main issues relating to this programme are land subdivision and potential for unsustainable land use.

4.2.2 Tourism Development and Management Programme

The purpose of the Tourism Development and Management Programme is *"to make Amboseli Ecosystem an outstanding tourist destination offering premium visitor experience and variety while supporting conservation and communities".*

The aim of this programme is to develop high quality and sustainable tourism that optimizes benefits locally and nationally within agreed limits of acceptable use. The primary focus is on the achievement of the AE's conservation goals, coupled with the delivery of the AE's enhanced tourism product. The prima- ry objective for tourism in the Conservation & Tourism Development Zone will be the development of a **premium tourism product**, featuring low volumes of visitors but with high returns in the wildlife con servancies. This will complement the existing largely budget (high volume, low value) tourism product on offer in Amboseli National Park. The premium tourism product is also most appropriate considering the undeveloped nature of tourism infrastructure in the group ranches, which could not support a tradi- tional budget tourism operation, as well as the Zone's emphasis on the preservation of crucial wildlife corridors and dispersal areas.

The Amboseli ecosystem is one of the most important tourism destinations in Kenya. The high visitation is attributed to the presence of many unique and diverse natural landscapes that offer correspondingly diverse holiday attractions to both local and international visitors who include Amboseli in their holiday and safari itineraries.

The core of these attractions is the Amboseli National Park, famous for its beautiful plains whose background spots the snow-capped Mt. Kilimanjaro. The Park also hosts a rich assemblage of wildlife species and populations, and is famous for large herds of elephants, especially during the dry season when wildlife from around the ecosystem congregates at the swamp in search of water and forage.

The park is surrounded by ranches which are ecologically connected to the national park, and which alsohost high populations of migratory and resident wildlife. This implies there are also numerous opportu- nities for tourism outside the park, and is the foundation of the thriving private and community tourism enterprises in the ecosystem. The ecosystem is mainly inhabited by the Maasai community whose au- thentic culture remains an enduring attraction to the ecosystem and to the rest of the country.

Other factors that make Amboseli ecosystem attractive for visitation include proximity to other important destinations. For instance, it's only about 2 hours' drive from Nairobi, and is easily booked as a one day excursion from Nairobi by many visitors in the city whose time budget cannot allow extended travel and safaris. Amboseli National Park also is only 50km off the Nairobi – Arusha highway from the Namanga border, used by many visitors from Kenya going to safaris in Northern Tanzania. Hence, many visitors to Kenya and Tanzania include Amboseli in their itinerary because of convenience and also because it's regarded as the best viewing site for the Mt Kilimanjaro.

The relatively good road network between Nairobi and Namanga on the Western side of the ecosystem and Oloitoktok on the Eastern side makes Amboseli appealing to many local visitors who can easily access the ecosystem, including the park, by private vehicles without incurring huge costs of safari vans and guided safaris.

The high tourism potential and diverse opportunities for investments in the ecosystem has naturally attracted numerous investors at different levels of the tourism hierarchy leading to many, sometimes uncoordinated, developments. In effect then, the AE is under great pressure and threats which are of great interest to stakeholders and whose resolution calls for long term planning and management

The main concerns are:

- **Standards decline** – The tourism product of the AE is in sharp decline in quality and is likely to undermine its quantitative growth by downgrading the destination's appeal among discerning visitors. This decline is due to rapid and unplanned development of tourism facilities on the bor- der of Amboseli National Park thanks to poor and weak regulations and controls. These high endand budget tourism facilities largely depend on the Amboseli Park as they key attraction and wildlife viewing location. This leads to a sharp increase in visitor densities in Amboseli National Park, while these facilities make minimal contribution to conservation or community livelihoods in the wider ecosystem.

- **Environmental impacts** – The growth of tourism enterprises in the Ecosystem is having adverse impacts like disruption and closure of wildlife dispersal areas and migration corridors to the east of Amboseli National Park. For instance, the development of many lodges next to each other with elephant-proof electric fences on small plots in the Kimana area to the east of Amboseli National Park has disrupted elephant migration corridors that connect Amboseli National Park with the Chyulu Hills and Tsavo ecosystem, and with wetland areas to the east of the park.

- **Land Use changes** – The AE has witnessed rapid land use changes over the recent past. These changes are incompatible with conservation, especially subdivision of formerly community land into small plots, growing sedentarization of the previously mainly nomadic people, which leads to increase in more settlements and associated activities like agriculture and fencing. These land-use changes are mainly an economic imperative, as most of the tourism and conservation activities in the ecosystem do not generate direct income to the communities, who are forced to resort to competing land use activities like farming from which they can get direct economic benefits

Natural Resource Management Programme

The purpose of the Natural Resource Management Programme is *"to sustainably manage natural resources in the AE to continue providing ecosystems goods and services to the local community".*

Over the last four decades, the AE has undergone major ecological changes. Rangeland degradation mainly fueled by land subdivision, increasing sedentarization and heavy grazing has been observed across the entire ecosystem. The degradation has intensified impacts of persistent droughts, precipitating losses of livestock and wildlife and intensifying human-wildlife conflicts when extreme droughts occur.

The woodlands in the Amboseli basin have shrunk from covering 30% of the Amboseli Basin to a few scattered remnants covering less than 5%, mainly in fenced enclosures. The woodlands have been replaced by grasslands and bush lands and the swamps have increased by a half (Western, 2007).

Other indicator of a loss of ecological complexity includes plant and large herbivore diversity and dominance. The decrease in the relative abundance of grasses and rising dominance of a few species reflects a three-fold increase in grazing pressure. The decrease in the diversity of large herbivores reflects the heavy browsing pressure in the Amboseli National Park and a reduction in habitat diversity.

The viability of the carnivore populations, and the extent of human-wildlife conflict, hinge on the productivity of the plant community and large ungulate populations. The steady decline in wildebeest and zebra populations since the 1990s, culminating in the precipitous drops in the 2009 drought, saw a steep rise in livestock predation and reprisals.

The major water resource management challenges in AE include water scarcity. This is due to increasing demand from uses such as irrigation and subsequent over abstraction from the main water sources (riv- ers and swamps), particularly in the dry season. Another cause is vegetation clearance of wetlands to pave way for irrigated agriculture; pollution due to use of agro-chemicals in the farmlands; and siltation of rivers from sediments and silt from erosion process due to poor farming methods and loss of forest cover in the catchment areas.

4.2.3 Institutions and Governance Programme

The Ecosystem Institution and Governance Programme is geared towards coordination of different pro- grams in this management plan so that it can realize its purpose of conserving the ecosystem values and resources while delivering optimum benefits to the communities and stakeholders. The AE management challenges can only be managed through a rationalized process that promotes active engagement and partnership with all key stakeholders including KWS, landowners, investors and NGOS under central leadership of AET. The Governance Program therefore targets the stakeholders, management of personnel and the support services.

Intra and inter-transboundary issues associated with the implementation of the plan are related to wildlife management policy such as hunting that is allowed in Tanzania and illegal in Kenya. Land use practices on the border could also impact negatively on the migration of wildlife, and strong partnerships at the Institutions and Governance level with the neigbouring Tanzania Wildlife authorities through regular scheduked meetings would resolve potential inter and transboundary wildlife management contraints.

CHAPTER 5: DESCRIPTION OF BASELINE CONDITIONS

5.1 OVERVIEW

The Amboseli Ecosystem is dedicated to biodiversity conservation and is endowed with considerable natural and wildlife tourism resources and attractions. The Amboseli Ecosystem is approximately 5,700km^2, stretching between Mt. Kilimanjaro along the Kenya-Tanzania border to the south, the Chyulu Hills to the east, Tsavo West National Park to the south east, the Namanga area to the west and the Mbirikani area to the north. The specific areas in the scope included Amboseli National Park and the sur-rounding six group ranches namely; Olgulului/Olararashi, former Kimana/Tikondo group ranch, Eselengei, Mbirikani, Kuku, and Rombo as shown in the figure below. It also included the former 48 individual group ranches located at the foot slopes of Kilimanjaro that are sub-divided and mostly under rain-fed agriculture. The area is generally arid to semi-arid with a very small variation in its agro-ecological zones and is more suitable for pastoralism rather than cultivation with a high potential for conservation of wildlife and tourism enterprises. The proceeding text provides a summary of the landscape with detailed program specific conditions discussed in the next section.

5.2 Physical Environment

Topography

The main topographic features of the ecosystem are the flat and dry, arid plains/savannah making upthe main ecosystem. Outside Amboseli National Park are a number of geomorphologic features that stand out and are of tourism interest. These include Mount Kilimanjaro, Chyulu, Losoito, Lemipoti, Ilng'arunyoni, and Lemomo among others. In Amboseli National Park, the Observation and Ilmerisheri hills are of special interest. The Observation hill is the highest point in the Park and is commonly used by tourists as a picnic site. One is able to get a synoptic view of the Amboseli National Park from the top of Observation Hill.

Ground and Surface Water Characteristics

a) Groundwater Characteristics

The groundwater resources of an area are normally dependent on the nature of the parent rock, structural features, weathering processes, recharge mechanism and the form and frequency of precipitation. The Amboseli area is located in a hydrogeological zone characterized by low to medium groundwater potential. The area to the southeast towards Mt. Kilimanjaro covered by volcanic rocks has a good potential for groundwater due to recharge from the high rainfall around the mountain. The rest of the area is covered by metamorphic rocks of the Mozambique Belt andis characterized by low groundwater potential. Within the metamorphic rock area, groundwater can be encountered in alluvial deposits and within weathered and fractured zones of the underlying rocks. The recharge for the aquifers though is enhanced by the local streams/ river drainage system (seasonal streams) and fractured rock masses.

b) Surface Water Characteristics

Surface water resources are mainly from Mt. Kilimanjaro which receives high annual rainfall. The resources comprise springs, streams and swamps. These are the main water sources for the wild- life, local community and tourist facilities in the ecosystem.

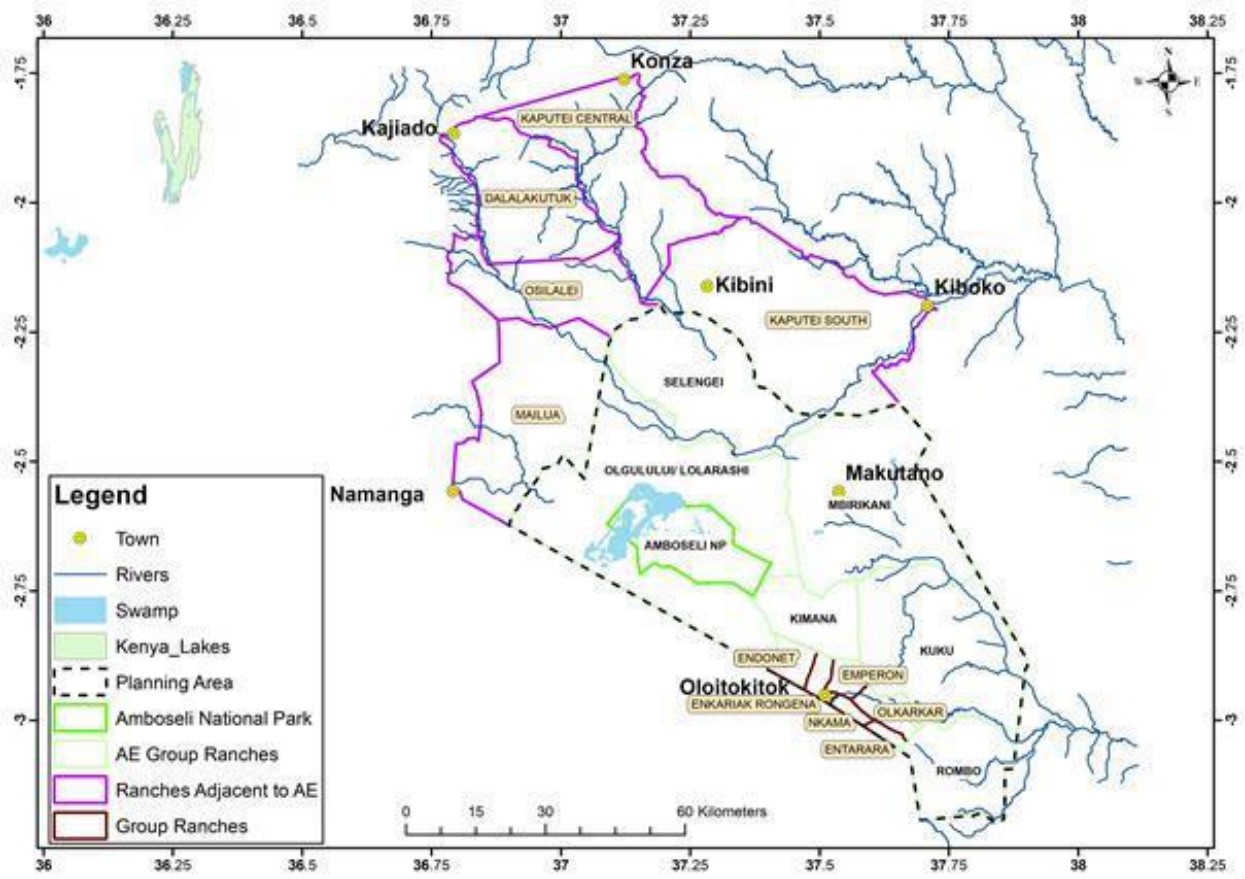

Figure 3. ***Drainage System of Project Area***

Climate and Weather Patterns

The Amboseli Ecosystem lies in an arid to semi-arid area characterized by low annual rainfall and high temperatures. Rainfall is concentrated in the months of March to May and October to December. Average annual rainfall around Amboseli is 700mm (https://en.climate-data.org/). However rainfall increases toward Mt. Kilimanjaro. Temperatures are highest in the months January to March; Annual mean temperatures are 23° C. Potential evaporation is between 1,600 and 2,200 mm per year and these losses are exacerbated by frequent high winds in the area.

Land Uses

The ecosystem has been divided into three broad zones i.e. arable agriculture, livestock production, and wildlife tourism, based on environmental and socio-economic considerations.

Table 1. Present and Potential land Uses in the Amboseli Ecosystem

	Olgulului/ Lolarashi	**Mbirikani**	**Eselengei**	**Kuku**	**Rombo**	**Kimana**	**Amboseli NP**
Current & Potential future land uses	i. Human set-tlement ii. Livestock grazing iii. Agriculture iv. Wildlife Tour-ism v. Social infra-structure vi. Commercial vii. Mining	ii. Human settle-ment iii. Livestock grazing iv. Agriculture v. Wildlife Tourism vi. Social infrastruc-ture vii. Commercial viii. Mining	i. Human settle-ment ii. Livestock graz-ing iii. Agriculture iv. Wildlife Tourism v. Social infra-structure vi. Commercial	i. Human set-tlement ii. Livestock grazing iii. Agriculture iv. Wildlife Tourism v. Social infra-structure vi. Commercial	i. Human settle-ment ii. Livestock graz-ing iii. Agriculture iv. Wildlife Tour-ism v. Social infra-structure vi. Commercial	i. Human settle-ment ii. Livestock graz-ing iii. Agriculture iv. Wildlife Tourism v. Social infra-structure vi. Commercial	i. Wildlife con-servation ii. Wildlife tour-ism

From the table, the ecosystem can be divided into the following four major zones that accommodate current and potential future land uses:

- Pastoralism (large and small livestock with nomadic and seasonal use of resources)
- Conservation and Tourism (especially protection of AE conservation targets, seasonal dispersal areas and migration routes, and development of premium permanent eco-lodges and mobile camps)
- Cultivation (rain-fed and irrigated crop production and horticulture)
- Settlement (both permanent and temporary seasonal villages and commercial and industrial areas)
- Physical infrastructure (roads and utilities)

Figure 4 gives a visual presentation of the land use in the area

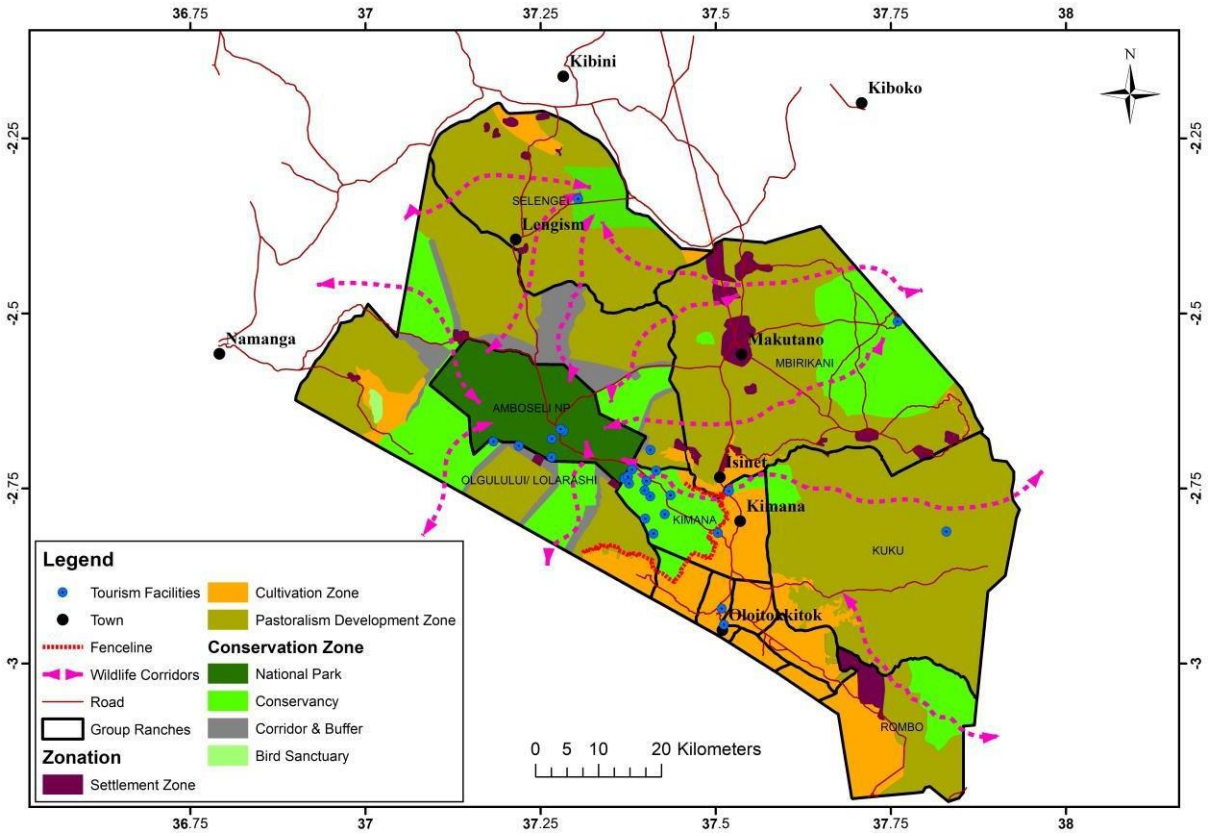

Figure 4. ***Land use Zones in the Amboseli Ecosystem***

5.3 PROGRAM SPECIFIC BASELINE CONDITIONS

Detailed baseline situation analysis was undertaken in accordance with each of the four programmes in the management plan with an aim of establishing current state of environment, key environmental challenges, and potential future ecosystem scenarios. The findings are presented in accordance to the programmes objectives.

5.3.1 Community Livelihoods and Social Economic Programme

The main sources of livelihood in AE are traditional pastoralism, wildlife tourism, intensive rain fed and irrigation agriculture, trade and commerce. The predominant activity on which the large majority of the community depends on is pastoralism. Traditional pastoralism has been demonstrated to be the most economically viable and sustainable land use over the long term and has historically been the major source of income for the majority of the AE community members. This is because suitability for crop production through rain fed farming is limited by climatic conditions since majority of the area falls in the arid and a semi-arid zone. The area of the AE most suited for non-intensive rain fed agriculture is restricted to the agro ecological zones, Lower- Midlands livestock- Millet zone, and Upper-Midlands sunflower-Maize zone, at the foot slopes of Kilimanjaro.

Pastoralism combined with wildlife tourism has historically been one of the major sources of income for the majority of the AE residents. The AE group ranches act as dispersal areas and provide migratory corridors for wildlife movement from Amboseli National Park to Amboseli Group ranches and beyond. As such most of the land is under conservation and has great potential for wildlife tourism development.

Trade is also carried out in AE. The trade involves the sale of goods and services. Crops grown are used for domestic purposes and the surplus taken to the market to be sold. Cattle are also sold in order to getmoney for use.

The economic future of the local community in AE depends mainly on modernization of traditional pastoralism, diversification of tourism activities, the development of irrigation area and adoption of modern farm irrigation methods as well as adoption of modern technology and innovation, value addition, production of animal feeds and enhancing of commerce and trade. However, to secure and enhance sustainable socio-economic future of the AE community, the following key existing and anticipated issues that impact the livelihoods of AE community will have to be addressed:

Pastoralism

a) Traditional animal rearing practices.
b) Poor marketing of livestock and livestock products.
c) Overstocking and overgrazing.
d) Unimproved breeds and poor husbandry.
e) Inadequate livestock husbandry support services.

Crop production

f) Under exploitation of irrigation potential.
g) Poor uptake of modern technology in agricultural production

Infrastructure

h) Unplanned settlements
i) Poor roads conditions, poor infrastrucre and climate variability.

5.3.2 Tourism Development and Management Programme

The Amboseli ecosystem is one of the most important tourism destinations in Kenya. The high visitation is attributed to the presence of many unique and diverse natural landscapes that offer correspondingly diverse holiday attractions to both local and international visitors who include Amboseli in their holiday and safari itineraries.

The core of these attractions is the Amboseli National Park, famous for its beautiful plains whose back-ground spots the snow-capped Mt. Kilimanjaro. The Park also hosts a rich assemblage of wildlife species and populations, and is famous for large herds of elephants, especially during the dry season when wild-life from around the ecosystem congregates at the swamp in search of water and forage.

The park is surrounded by ranches which are ecologically connected to the national park, and which also host high populations of migratory and resident wildlife. This implies there are also numerous opportu- nities for tourism outside the park, and is the foundation of the thriving private and community tourism enterprises in the ecosystem. The ecosystem is mainly inhabited by the Maasai community whose au- thentic culture remains an enduring attraction to the ecosystem and to the rest of the country.

Other factors that make Amboseli ecosystem attractive for visitation include proximity to other im-portant destinations. For instance, its only about 2 hours drive from Nairobi, and is easily booked as a one day excursion from Nairobi by many visitors in the city whose time budget cannot allow extended travel and safaris. Amboseli National Park also is only 50km off the Nairobi – Arusha highway from the Namanga border, used by many visitors from Kenya going to safaris in Northern Tanzania. Hence, many visitors to Kenya and Tanzania include Amboseli in their itinerary because of convenience and also be-cause it's regarded as the best viewing site for the Mt Kilimanjaro.

The relatively good road network between Nairobi and Namanga on the Western side of the ecosystem and Oloitoktok on the Eastern side makes Amboseli appealing to many local visitors who can easily ac-cess the ecosystem, including the park, by private vehicles without incurring huge costs of safari vansand guided safaris.

The high tourism potential and diverse opportunities for investments in the ecosystem has naturally at-tracted numerous investors at different levels of the tourism hierarchy leading to many, sometimes un-coordinated, developments. In effect then, the AE is under great pressure and threats which are of great interest to stakeholders and whose resolution calls for long term planning and management.

The main challenges observed include:

a. **Standards decline** – The tourism product of the AE is in sharp decline in quality and is likely to undermine its quantitative growth by downgrading the destination's appeal among discerning visitors. This is decline is due rapid and unplanned development of tourism facilities on the bor- der of Amboseli National Park thanks to poor and weak regulations and controls. These high end and budget tourism facilities largely depend on the Amboseli Park as they key attraction and wildlife viewing location. This leads to a sharp increase in visitor densities in Amboseli National Park, while these facilities make minimal contribution to conservation or community livelihoodsin the wider ecosystem.

b. **Environmental impacts** – The growth of tourism enterprises in the Ecosystem is having adverse impacts like disruption and closure of wildlife dispersal areas and migration corridors to the east of Amboseli National Park. For instance, the development of many lodges next to each other with

elephant-proof electric fences on small plots in the Kimana area to the east of Amboseli National Park has disrupted elephant migration corridors that connect Amboseli National Park with the Chyulu Hills and Tsavo ecosystem, and with wetland areas to the east of the park.

c. Land Use changes – The AE has witnessed rapid land use changes over the recent past. These changes are incompatible with conservation, especially subdivision of formerly community land into small plots, growing sedentarization of the previously mainly nomadic people, which leads to increase in more settlements and associated activities like agriculture and fencing. These land-use changes are mainly an economic imperative, as most of the tourism and conservation activities in the ecosystem do not generate direct income to the communities, who are forced to resort to competing land use activities like farming from which they can get direct economic benefits.

5.3.3 Natural Resource Management Programme

Over the last four decades, the AE has undergone major ecological changes. Rangeland degradation mainly fueled by land subdivision, increasing sedentarization and heavy grazing has been observed across the entire ecosystem. The degradation has intensified impacts of persistent droughts, precipitating losses of livestock and wildlife and intensifying human-wildlife conflicts when extreme droughts occur.

The woodlands in the Amboseli basin have shrunk from covering 30% of the Amboseli Basin to a few scattered remnants covering less than 5%, mainly in fenced enclosures. The woodlands have been replaced by grasslands and bush lands and swamps have increased by a half.

Other indicators of a loss of ecological complexity include plant and large herbivore diversity and dominance. The decrease in the relative abundance of grasses and rising dominance of a few species reflects a three-fold increase in grazing pressure. The decrease in the diversity of large herbivores reflects the heavy browsing pressure in the Amboseli National Park and a reduction in habitat diversity.

The viability of the carnivore populations, and the extent of human-wildlife conflict, hinge on the productivity of the plant community and large ungulate populations. The steady decline in wildebeest and zebra populations since the 1990s, culminating in the precipitous drops in the 2009 drought, saw a steep rise in livestock predation and reprisals.

The major water resource management challenges in AE include water scarcity. This is due to increasing demand from uses such as irrigation and subsequent over abstraction from the main water sources (rivers and swamps), particularly in the dry season. Another cause is vegetation clearance of wetlands to pave way for irrigated agriculture; pollution due to use of agro-chemicals in the farmlands; and siltation of rivers from sediments and silt from erosion process due to poor farming methods and loss of forest cover in the catchment areas.

Maintaining a Minimum Viable Area for sustaining wildlife and pastoral herd. The AEMP 2008-2018 defined a Minimum Viable Area (MVA) for sustaining wildlife and pastoral herds, the threats to the integrity of the ecosystem, and proposed specific mitigation measures. This MVA has shrunk considerably in the last ten years of plan due to increased threats necessitating a revision and definition of a new MVA for the new ecosystem plan. The new MVA is shown in figure 5.3

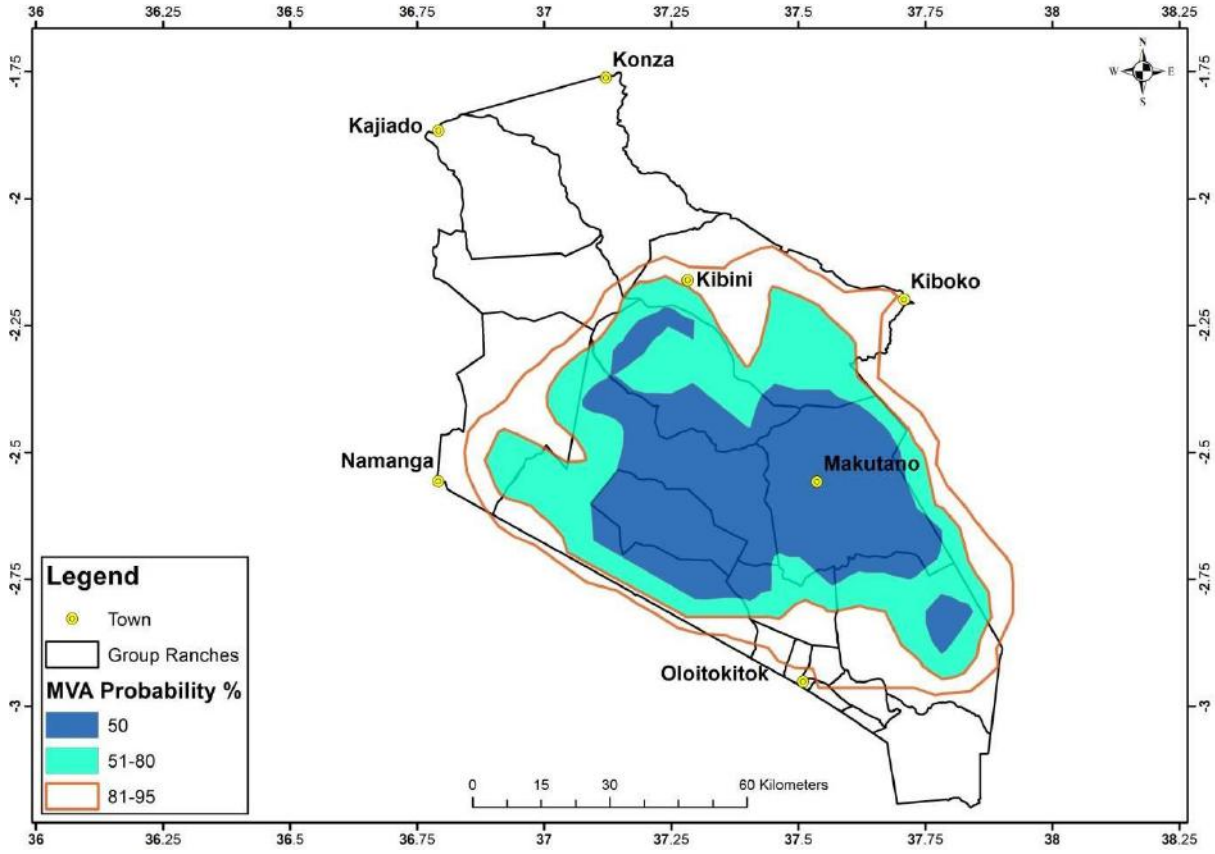

Figure 5: AE's Redefined Minimum Viable Area

Table 5.1 provides a summary of the state of environment in key wildlife dispersal and corridors in AE asobserved currently.

Table 2. State of the environment in key wildlife dispersal and corridors in Amboseli Ecosystem

Wildlife dispersal and corridor	General state of environment	Key environmental challenges
Kimana-Kuku	Bad and deteriorating	• *Overstocking* • *Land subdivision and sale especially in the former Kimana/Tikondo Group Ranch* • *Restoration of the collapsed Kimana and Namelok electric wildlife barrier fences in order for them to sustainably reduce human-wildlife conflicts in the two critical farming zones* • *Expansion of Maasai cluster settlements coupled by mushrooming urban centres e.g. Namelok and Inkisanjani* • *Prevalence of soil erosion* • *Loss of important grasses species which affects availability of grazing good resources* • *Prevalence and expansion of farming activities*
Elerai-Kilimanjaro	Average	• *Observations in the neighbourhood of Elerai conservancy towards the Kenya-TZ border revealed a high concentration of human settlements and farming activities* • *Environmental degradation in water zones such as boreholes and livestock watering points* • *Expansion of human cluster settlements* • *Prevalence and expansion of farming*

Wildlife dispersal and corridor	General state of environment	Key environmental challenges
Kitenden-Longido	Average but deteriorating	• *Overstocking in some areas* • *Environmental degradation in water zones such as boreholes and livestock watering points* *Expansion of human cluster settlements* • *Prevalence and expansion of farming* • *Land sub-division (this is one of the key concerns AWF is trying to address including the prevalence of farming activities especially near the TZ border)* • Loss of important grasses species which affects availability of grazing good resources
Mbirikani-Chyulu	Poor	• *Overgrazing and soil erosion especially along the water pipeline. SEA enquiries revealed that soil erosion is actually quite prevalent in most parts of the group ranch* • *Increased land sub division* • *Loss of important grasses species which affects availability of grazing good resources* • *Environmental degradation in water zones such as boreholes and livestock watering points* • Expansion of human cluster settlements • *Recent mushrooming irrigated agriculture farms especially along the pipeline and its environs*
Rombo-Tsavo	Average	• *Overgrazing in some areas*

Human-Wildlife Conflicts. Wildlife continues to affect the AE community negatively through incessant crop raiding, human injury and livestock predation. Crop raiding is rampant in irrigated areas around wetlands, and in the rain-fed agricultural areas at the foot of Mt. Kilimanjaro. Wildlife (especially elephants) continues to expand their range to cover new areas, creating new HWC fronts in community areas. Despite implementation of HWC mitigation measures such as wildlife barriers being installed in HWC prone areas, HWC seems to be increasing particularly in the cultivated areas leading to increased resentment of wildlife. To gain support for conservation in the ecosystem, effective measures to curb HWC need to be put in place.

AET has a comprehensive grievance redress mechanism which is implemented through various community committees such as Human wildlife interaction committee, Rangelands Committee, the AEMP Plan Implementation Committee (PIC), and Zone Grazing Committees. Different Group ranches have also purposed to install suggestion boxes outside their offices where complaints are received and addressed accordingly.

Controlling and monitoring water abstraction from rivers and swamps. Water abstraction is largely unregulated and there is significant water wastage at abstraction points. This has led to reduction in the volumes and availability of water throughout the year in rivers, springs and aquifers. The lack of water utilization plans has led to uncontrolled off takes from the rivers and streams and the main beneficiaries are largely unorganized. This kind of scenario poses a big problem to the ecosystem, which has led to insufficient in-stream flows to sustain domestic and agricultural uses.

The upper water catchment of Kimana–Kikarankot river system, which is arguably the most extensive and reliable water source outside Amboseli National Park, has been cleared for cultivation. The lower sections of the river are fed by underground springs few of which are protected and consequently face degradation through tree felling and trampling by livestock. Water is diverted from the springs that feed Kimana River into irrigation canals or is piped for use elsewhere reducing water flow downstream. There is evidence of high level of pollution from pesticides used to control crop pests in the irrigated horticul-

tural farms. These pesticides are washed into the rivers through run-off. Table 5-2 provides a summary of the status of water in AE.

Table 3. State of environment in key rivers and wetlands in the Amboseli Ecosystem

River/Swamp	General state of environment	Key environmental challenges
Amboseli swamps	Poor	• *Declining swamp area* • *Widespread loss of swamp vegetation due to heavy use by wildlife and livestock* • *Reduction in available water* • *Given that all the swamps and rivers in the ecosystem get their water from Mt. Kilimanjaro, climate change and variability is therefore a key environmental challenge*
Nolturesh River	Poor	• *Most of the river has been diverted into the Emali-Sultan Hamud-EPZ water pipeline* • *Severe riverbank degradation coupled by prevalence of soil erosion and loss of riparian vegetation* • *Emergence of irrigated agriculture coupled by high levels of water abstraction* • *Loss of wildlife habitats through agricultural encroachment* • *Heavy use of agro-chemicals along the river in the farms* • *River no longer perennial*
Ilkisonko River	Poor	• *Unsustainable dryland irrigation and massive water abstraction* • *Severe river bank degradation coupled by prevalence of soil erosion and loss of riparian vegetation*
Rombo River	Poor	• *Widespread encroachment especially near the Illasit Trading Centre* • *Widespread abstraction of water for irrigation* • *Unsustainable furrow irrigation methods*
Isinet River & Swamps	Deteriorating	• *Widespread diversion of river water for irrigation with cases of water abstraction using pumps even at the source* • *Unsustainable furrow irrigation methods* • *Loss of wildlife habitats through agricultural encroachment* • *Heavy use of agro-chemicals along the river in the farms*
Kimana River & Swamps	Deteriorating	• *Widespread diversion of river water for irrigation* • *Numerous water pumps especially between our camp and the entrance to Kimana sanctuary near the bridge to Isinet* • *Unsustainable furrow irrigation methods* • *Loss of wildlife habitats through agricultural encroachment* • *Heavy use of agro-chemicals along the river in the farms* • *Prevalence of sheet erosion along the river bank*
Namelok Swamps	Poor	• *Widespread water abstraction and diversion for dryland irrigation* • *Destruction of the papyrus swamp vegetation* • *Unsustainable furrow irrigation methods* • *Loss of wildlife habitats through agricultural encroachment*

5.3.4 Institutions and Governance

The Institutions and Governance Programme focuses on building and maintaining ecosystem as well as group ranch level institutional and governance structures to ensue land owners receive tangible economic and other benefits that derive from the ecosystem. Without strong and accountable institutions to oversee social and natural resource governance, the vision for the ecosystem cannot be attained. Thisis in view of the ongoing trend to subdivide the group ranches into individually owned land parcels which implies that land use decisions will be made by individual land owners. Hence, for individuals to subscribe to collective land use decisions they need to receive tangible incentives, otherwise some of them might decide to act individually.

Land owners in the AE still support traditional natural resource governance institutions as livestock production through pastoralism is favoured by the majority. As such, although group ranches have decided to subdivide, subdivision will be mainly on paper to give land owners security of tenure but land use will be largely guided and controlled through the agreed Land Use Zoning Scheme developed for the ecosystem. This will ensure that the preferred major land uses, pastoralism and wildlife tourism, that require extensive land will continue to thrive. Implementation of this Zonation scheme therefore requires strong, effective and efficient institutions that will ensure equitable access to resources and benefits accruing from them.

This Programme is geared towards coordination of different programs in the management plan so that itcan realize its purpose of conserving the ecosystem values and resources while delivering optimum ben- efits to the communities and stakeholders.

The AE management challenges can only be managed through a rationalized process that promotes active engagement and partnership with all key stakeholders including KWS, landowners, investors and NGOs under central leadership of AET.

The existing group ranch institutional arrangements are suitable where land is communally owned and where institutions dictate that land management decisions are made communally. This will have to change with subdivision of the group ranches into individually owned land parcels. Hence, this calls for replacement of existing institutional and governance systems with other innovative institutions that fullyrecognize the new private land tenure system that is taking over from communal land ownership. Fur- ther, implementation of the management actions contained in the plan requires establishment of stronginstitutions.

CHAPTER 6: STAKEHOLDERS AND PUBLIC ENGAGEMENT

6.1 OVERVIEW

The key tool for the identification of existing impacts was through discussions with the proponents and stakeholders and observations from site visits. Brainstorming among the study team members after careful review of the proposed activities also aided in the identification of impacts. Impacts were identified by characterizing the impact causes and effects and their consequences on the physical, biological and the human environment.

Analysis and evaluation of adverse impacts was deemed necessary to determine whether they are signif-icant enough to warrant mitigation. To achieve this, the study team reviewed relevant literature (com- parison with laws, regulations and standards, consistency of project objectives with government policy); and brainstorming sessions among the study team guided by the collected data. Consultations and dis- closures with key stakeholders were also held. The analysis of impacts was based on a criterion that tookinto account the following parameters:

- Magnitude- refers to the absolute or relative change in the size or value of an environmental feature
- Direction- will the impact generate a beneficial or negative change?
- Extent- will the impact affect a small, medium or large area?
- Duration- the period over which an impact will be felt. Is it short-term or long-term?
- Reversibility- the permanence of the impact. Is the impact reversible particularly for negative ones?
- Likelihood of occurrence- the possibility of the impact occurring as predicted.

6.2 Stakeholder Identification and Analysis

Stakeholders were identified on the basis of whether they will affect the implementation of the management plan or they will be affected by it. Identification of stakeholders was informed by a desk study, recommendations made by the project proponent and expert judgment of the SEA team.

Table 4. Summary of the stakeholders consulted during the SEA process

Stakeholder category	***Stakeholder identity***	***Justification***
Local community	Amboseli Ecosystem Trust (AET)	This is the cross-sectoral institutional structure which was created by the Amboseli Ecosystem Management Plan to coordinate and pro vide leadership for the implementation of the plan.
	Amboseli Tsavo Group Ranches Association (ATGRA)	is he umbrella framework which coordinates the affairs of the local people in the six group ranches in the Amboseli ecosystem. The association forms the key structure for tourism revenue sharing. In addition, they represent the interest of the main stakeholders who have the biggest contribution of land in the ecosystem which is used by wildlife and the truth is that the future of the ecosystem and its wildlife depends on securing and protecting the key changes in the group ranches. Further, the community they represent should be worn now and in future if they are to continue to allow wildlife to freely use their land and associated resources
	Conservancy Landowners Committee	The conservancies are located within the group ranches in the ecosystem and are critical in sustaining the wildlife dispersal and migratory corridors which are seriously threatened by the on-going land

Stakeholder category	***Stakeholder identity***	***Justification***
		sub division, sale of land, farming activities and expansion of human settlements and associated infra-structure development
	Amboseli Tsavo Game Scout Association (ATGSA)	This is the umbrella association coordinating the operations of the wildlife game scouts and water scouts in all the group ranches. It provides an important avenue for linkages with KWS, Kenya Police and other conservation organizations such as Big Life Foundation
	Water Resource Users Associations	These are associations of local communities located in a number of areas within the ecosystem especially along rivers and around critical springs and wetlands. They provide an avenue for collaborative water resources management at grass root level and easy partnership with WRMA
	Amboseli Cultural Villages	The villages are operated by local communities around the Amboseli National Park and provide a window for tourism revenue trickle down to the local people in the ecosystem
	Amboseli Curio Traders	The curio shops are operated by local communities around the Amboseli National Park and provide a window for tourism revenue trickle down to the local people in the ecosystem
	African Conservation Centre and Amboseli Conservation programme (ACP)	This is a regional conservation NGO which is working in the area. Started in 1967, the Amboseli Conservation Programme (ACP) aims to explain the factors that govern the structure, dynamics, and changes of the ecosystem and the interactions between wildlife and people. ACP is also dedicated to the conservation of Amboseli eco- system and its biodiversity endowments. The programme was direct- ly involved in the planning, establishment, and development of Am- boseli National Park. It has played a continuing role in the conservation of the park and ecosystem over the years since. It is championed by Dr. David Western
	Big Life Foundation	Big Life was founded in Sept. 2010 by photographer Nick Brandt and conservationist Richard Bonham as a non-profit organization dedicated to the preservation of Africa's wildlife and ecosystems. It has now expanded to employ 315 rangers, with 31 outposts and 15 vehicles protecting 2 million acres of wilderness in the Amboseli-Tsavo ecosystem of East Africa. It is the only organization in East Africa with co-ordinated cross-border anti-poaching operations especially in the Amboseli region
	School for Field Studies	is an affiliate of Boston University USA which is located in the ecosystem. It trains students and undertakes research on the steady shift in land use from purely pastoral to mixed agro pastoral systems in the Maasai group ranches that occupy the land between Amboseli and Tsavo West National Parks in southern Kenya. It has been in the region since 1999, and has managed to generate substantial socio-ecological data especially in the former Kimana/Tikondo group ranch, Kuku, Mbirikani and Olgulului-olololorashi. This findings have consistently been shared with diverse stakeholders including local leaders and communities
	IFAW	The IFAW Amboseli Elephant project was launched in 2010 to protect elephants in Kenya called the Amboseli Elephant Project. The Amboseli Elephant Project focuses on three elements critical to the survival of the Amboseli ecosystem and the elephants that depend on it for survival: • Helping the Kenya Wildlife Service (KWS) better protect the core area of Amboseli National Park • Assisting the world-famous Amboseli Elephant Research Project with ground-breaking scientific research on elephants • Partnering with a community group ranch outside the park to help secure land vital to migrating elephants and local Maasai people

Stakeholder category	***Stakeholder identity***	***Justification***
National Government Officers	Local Administration	The government officers are playing the role of implementing government policies, plans and programmes in the Amboseli ecosystem including the enforcement of various legal frameworks on environment and natural resources. Government isntitutions and especially the Lead Agencies and NEMA have the overall mandate of enforcement to ensure compliance with the recoomedations af the AEMP 2020-2030 and its SESA.
	Senior Warden, KWS Amboseli National Park and Team	
	KWS Regional Warden, Director General,NEMA and NEMA County Director	
	Sub-Regional Manager, WRMA	
	Livestock Development	
	Agriculture	
	Education	
	Health	
Olkejuado County Government Officers	County Governor	The county government is in charge of all governance issues within the ecosystem and is expected to support the implementation of the Amboseli Ecosystem Management Plan
	Deputy County Governor	
Tourism Investors	Mada Camp	The investors are involved in a wide range of tourism businesses in the Amboseli ecosystem thereby earning the country vital revenue aswell as creating employment
	Amboseli Serena Lodge	
	Oltukai Lodge	
	Tawi Lodge	
	Ol Donyo Wuas Lodge	

The issues identified through public and key stakeholders' consultations broadly touched on environmental and socio-economic issues in the proposed AEMP. These were considered in order to provide a high level of protection of the environment and to contribute to the integration of environmental considerations in the implementation of the AEMP. The concerns and suggestions from stakeholders were broadly categorized as stakeholder workshop, Key informant interviews and household survey.

CHAPTER 7: IMPACT ANALYSIS AND ALTERNATIVE OPTIONS

7.1 OVERVIEW

Under each of the **FOUR** programs in the Amboseli ecosystem management plan, there are objectives, actions and activities. These activities are the drivers of impacts whose mitigation measures are suggested in the matrices. Details of the four programs are contained in boxes 1-4 below for ease of reference and detailed analysis of the potential impacts from the plan activities are provided in the tables as per each program. Suggested mitigation measures to potential negative impacts are also provided in the tables under section 7.1 for all the proposed activities.

Four (4) alternative options to the plan identified by the experts and subjected to analysis were:

No Amboseli plan option, Amboseli spatial plan option, Amboseli National Park Plan option, and Amboseli Ecosystem Management plan option.

In order to agree on the best option, the four options were subjected to analysis through subjective rat ing based on the comments generated on each option by experts as presented below.

Table 5. Options and rating

No	Plan Option	Expert Rating	Explanation
1	No Plan	1-Not preferred	This option means maintenance of status quo. This is bad option for sustainability
2	Spatial Plan	2-Least preferred	This option is global and not very specific on sustainable land use but good for administrative and jurisdiction purposes. Kajiado Spatial Plan is awaiting launching and gazettement. All other County development and other plansincluding the AEMP 2020-2030 are anchored on it for effective enforcement. Generally, the Kajiado Spatial Plan is the frame work for other plans in the county.
3	Park Management Plan	3-Preferred	This option though preferred, it only restricts itself to the land uses within the Amboseli National Park. The National Park Plan will be part of the Amboseli Ecosystem Management Plan and was separately prepared by KWS. It is effective in enforcing compliance at the National Park level BUT Not at the Amboseli Ecosystem level.
4	Amboseli Ecosystem Management Plan	4-Most preferred	This option encompasses the entire land uses in details taking care of all stakeholders within the larger Amboseli area. This option also ensures social, economic and ecological benefits to the present and future generations. It ensures enforcement and compliance with the recommendations of the plan and it's SEA through a well-structured governance system (AET). Options 2,3 and 4 will however, contribute towards the overall sustainability of the AE

Boxes 1-4 below are the four programmes of the Amboseli Ecosystem Management Plan with their objectives, actions and activities that will be analysed for impacts and mitigation measures suggested. The analysis was carried out through brainstorming exercises by the SEA Experts.

BOX 1: Community Livelihoods& Socio-economic Programme

Objective 1: Livestock production through pastoralism improved

Action 1.1: Improve the livestock grazing range for sustainable livestock production

Activities

Establish grass banks (Olopololi)
Develop and implementing traditional grazing plans
Rehabilitate degraded grazing areas
Increase water supply for livestock

Action 1.2 Improve livestock breeding and husbandry

Activities

Crossbreeding the local livestock breeds for increased production of meat and milk.
Control livestock diseases.
Maintain cattle dips.
Conduct livestock vaccination campaigns.
Establish a model breeding farm to serve the entire ecosystem

Action 1.3 Improve the livestock marketing system

Activities

Reclaim livestock holding grounds
Support existing livestock markets.
Develop livestock marketing guidelines.
Form a livestock marketing association.
Establish linkages with local and international livestock markets.
Improve existing slaughter houses.
Implement a livestock fattening programme and establish a milk processing plant

Objective 2: Adoption of sustainable agriculture is improved

Action 2.1: Adopt modern technology in production, value addition and storage of agricultural produce to minimise waste and economic losses

Activities

Adopt modern crop production technologies.
Establish a horticultural canning factory.
Work with county and national governments to source for investors in cold storage facilities and grain dryers.
Work with county government in training agricultural extension officers for effective extension services.

Action 2.2: Work with finance institutions to make it easy for farmers to access credit

Action 2.3: Empower farmers with market information and direct access to markets to minimize exploitation by middlemen

Activities

Form a producer's association to advance farmers' interest.
Use standard nets and packaging and enforce the packaging regulations.
Use modern communication to access market information on prices and tastes.

Objective 3: The living standard of the local community is improved through enterprises, natural resourceuse and planned settlements

Action 3.1: Establish nucleated human settlements
Action 3.2: Establish infrastructure to support social development in the AE
Action 3.3: Support establishment of new enterprises and employment to improve household incomeAction 3.4: Strengthen education and health services

BOX 2: Tourism Development and Management Programme

Objective 1: Tourism developments in the AE are coordinated to ensure proper standards, distribution and sustainability

Action 1.1 Control and regulate infrastructure growth
Action 1.2 Provide incentives for investments
Action 1.3 Open connecting circuit between ecosystems
Action 1.4 Develop designated entry points and information centres for the conservancies
Action 1.5 Develop tourism accommodation and recreation facilities
Action 1.6 Create large conservation areas
Action 1.7 Identify high tourism potential areas
Action 1.8 Establish a tourism monitoring programme
Action 1.9 Monitor tourism activities in the ecosystem
Action 1.10 Conduct EIA/EA on tourism projects
Action 1.11 Establish a tourism stakeholders' forum

Objective 2: Local communities are adequately engaged to build local capacity and ensure optimum benefits from tourism

Action 2.1 Review leases where necessary
Action 2.2 Empower the community and create systems for effective tourism management
Action 2.3 Promote and facilitate development of cultural tourism
Action 2.4 Establish community curios
Action 2.5 Develop guidelines for human resource services at ecosystem level

Objective 3: Tourism products in AE are diversified to give visitors greater variety and better experience

Action 3.1 Establish a Visitor Centre at Nonkotiak Resource Centre
Action 3.2 Promote adventure tourism
Action 3.3 Train local tour guides
Action 3.4 Develop nature trails
Action 3.5 Promote regulated Balloon safaris
Action 3.6 Promote volunteerism
Action 3.7 Conduct night game drives in the group ranches and conservancies
Action 3.8 Promote Horse riding, hiking, filming and photography
Action 3.9 Promote Research tourism
Action 3.10 Promote Mountain biking/outdoor sports
Action 3.11 Develop a framework of cultural tourism

Objective 4: Marketing of tourism in the AE is devolved and modernised to attract high end local and international tourists to different attractions in the ecosystem
Action 4.1 Develop a brand identity for AE
Action 4.2 Form a single marketing secretariat
Action 4.3 Adopt latest marketing technology
Action 4.4 Develop products for domestic market
Action 4.5 Market through local and international media
Action 4.6 Develop guide books and maps
Action 4.7 Start an annual event
Action 4.8 Design innovative packages
Action 4.9 Explore use of royalty programmes

BOX 3: Natural Resource Management Programme

Objective 1: Habitat conservation improved

Action 1.1 Secure wildlife corridors
Action 1.2 Initiate new and support existing habitat, protection, restoration and rehabilitation measuresAction 1.3 Develop and implement pasture management and livestock grazing plans
Action 1.4 Develop and implement a climate change adaptation and mitigation action plan
Action 1.5 Promote use of sustainable energy sources to curb habitat degradation
Action 1.6 Develop a fire preparedness and response strategy

Objective 2: Wildlife conservation enhanced

Action 2.1.1 Support the Amboseli Human-Wildlife Co-existence Committee
Action 2.1.2 Implement the AE wide Human-Wildlife Interactions protocols to reduce HWC and prevent retaliatory wildlifekilling
Action 2.1.3 Rehabilitate and maintain wildlife barriers Action 2.1.4 Establish an ecosystem-wide consolation fund
Action 2.1.5 Create awareness on Human-Wildlife conflict mitigation strategies

Action 2.2.1 Strengthen the Community Wildlife Scouts units to effectively carry out their functions
Action 2.2.2 Intensify patrols
Action 2.2.3 Work closely with KWS and other security agencies
Action 2.2.4 Liaise with Tanzania's wildlife authorities on cross-border natural resource protection

Objective 3. Water resource management improved

Action 3.1 Monitor and control illegal water abstraction from both surface and groundwater sources
Action 3.2 Develop and implement water allocation plans
Action 3.3 Catalyse and collaborate with WRUAS to manage AE water concernsAction 3.4 Monitor ground and river water sources
Action 3.5 Train communities in rainwater harvesting techniques and associated mitigation for wildlife interactionsAction 3.6 Train communities in rainwater harvesting techniques and associated mitigation for wildlife interactions
Action 3.7 Collaborate with WRA to support WRUAS in water resource assessment studies to discern water availability and requirements
Action 3.8 Establish and maintain boreholes and wells
Action 3.9 Support protection and conservation of critical water sources and riparian land from degradation and initiate restoration activities in degraded riparian land
Action 3.10 Protect Kimana swamp from encroachment
Action 3.11 Support establishment of measures to reduce water pollution in AE's water bodies

BOX 4: Institutions and Governance Programme

Objective 1: New institutional and governance mechanisms established and operationalised and existing ones strengthened

Action 1.1: Strengthen the institutional and governance capacity of AET
Action 1.2. Work closely with relevant conservation entities to develop a viable conservation model
Action 1.3 Establish effective mechanisms for plan implementation and monitoring

Objective 2: Conservancies Operational Model Strengthened

Action 2.1: Strengthen conservancies to support tourism development, conservation and livestock production
Action 2.2: Explore possibility of establishing conservation companies
Action 2.3: Explore possibility of outsourcing management of conservancies to an appropriate conservation Management Company
Action 2.4: Establish tourism concessions with suitable tourism investors
Action 2.5: Establish Conservation Trusts to take the lead in fund-raising and implementation of social development and conservation projects
Action 2.6: Establish financial mechanisms for distributing economic benefits to conservancy members
Action 2.7 Carry out research on ecological, economic and social status of conservation in the Amboseli Ecosystem

Objective 3: Collaboration mechanisms established

Action 3.1: Establish MoUs with key partners
Action 3.2: Identify Amboseli Ecosystem Services with a view to developing a scheme for payment of opportunity costs
Action 3.3: Integrate the AEMP with the Kajiado County plans

7.1 IMPACT CHARACTERIZATION FOR THE POTENTIAL POSITIVE AND NEGATIVE IMPACTS

Table 6. Community Livelihood and Social Economic Programme

Potential negative impact	**Probability and risk of occurrence**	**Duration of impact**	**Magnitude**	**Reversibility**	**Importance**
Impact of establishing grass banks (Olopololi)	Low	Long term	Big	Reversible	High
Impact developing and implementing traditional grazing plans	Low	Long term	Medium	Reversible	Moderate
Impact of rehabilitating degraded grazing areas	Low	Long term	Big	Reversible	Moderate
Impact of increasing water supply for livestock	Medium	Long term	Big	Reversible	Moderate
Impact of establishing a livestock disease free zone	Low	Medium term	Big	Reversible	Moderate
Impact of Crossbreeding the local livestock breeds for increased production of meat and milk	Low	Medium term	Big	Reversible	Moderate
Impact of reclaiming livestock holding grounds and supporting existing livestock markets	Low	Medium term	Big	Reversible	Moderate
Impact of establishing linkages with local and international livestock markets	Low	Medium term	Big	Reversible	Moderate
Impact of Improving existing slaughter houses	Low	Medium term	Big	Reversible	Moderate
Impact of adopt modern crop production technologies.	Medium	Long term	Big	Reversible	Moderate
Impact of establishing a horticultural canning factory	High	Medium term	Big	Irreversible	Moderate
Impact of land subdivision with nucleated settlements where social amenities can be provided	High	Medium term	Big	Irreversible	Moderate
Impact of improved infrastructure (especially roads)	High	Medium term	Big	Irreversible	Moderate

Potential negative impact	Probability and risk of occurrence	Duration of impact	Magnitude	Reversibility	Importance
Impact of strengthening education and health services	Low	Medium term	Big	Irreversible	Moderate

Table 7. Tourism Development and Management Programme

Potential impact	Probability and risk of occurrence	Duration of impact	Magnitude	Reversibility	Importance
Impact of control and regulation of infrastructure development	Low	Long term	Small scale	Reversible	Moderate
Impact of diversity of tourism attractions and facilities	Low	Long term	Small scale	Reversible	Moderate
Impact of opening up a connecting circuit with Maasai Mara	Low	Long term	Small scale	Reversible	Moderate
Impact of the construction of the Visitor Centre on range environment	Low	Long term	Small scale	Irreversible	High
Impact of development of eatery and entertainment facilities	Low	Long term	Small scale	Irreversible	High
Impact of establishing a tourism monitoring programme	Low	Long term	Small scale	Reversible	High
Impact of quarterly inspections of facilities to assess their adherence to environmental mitigation measures	Low	Long term	Small scale	Reversible	High
Impact of strengthening community lease funds management offices	Low	Long term	Small scale	Irreversible	High
Impact of establishing well designed, large and environmentally friendly curio shops	Low	Long term	Small scale	Irreversible	High
Impact of development of nature trails	Low	Long term	Small scale	Reversible	High
Impact of developing a common ecosystem wide marketing strategy	Low	Long term	Small scale	Reversible	High

Table 8. Natural Resource Management Programme

Potential impact	**Probability and risk of occurrence**	**Duration of impact**	**Magnitude**	**Reversibility**	**Importance**
Impact of securing wildlife dispersal areas and corridors	Low	Long	Small scale	Reversible	High
Impact of ban on charcoal trade on poverty reduction	Low	Short	Small scale	Reversible	Moderate
Impact of restriction of quarrying activities	Low	Long	Small scale	Reversible	Moderate
Impact of off road driving in the conservancies	Low	Long	Small scale	Irreversible	High
Impact of development of pasture management and livestock grazing plans	Low	Long	Big	Reversible	High
Impact of climate change mitigation adaptation action plans	Low	Long	Small scale	Irreversible	High
Impact of promotion of alternative cooking methods and materials	Low	Long	Small scale	Reversible	High
Impact of implementing prudent measures to manage the escalating HWC	Low	Long	Big	Reversible	High
Impact of ensuring that the fences are rehabilitated and maintained	High	Medium	Big	Reversible	Moderate
Impact of the establishment of an ecosystem wide consolation fund	High	Medium	Big	Reversible	Moderate
Impact of creating awareness on HWC mitigation strategies among the community	High	Medium	Big	Reversible	Moderate
Impact of strengthening community wildlife scouts	High	Medium	Big	Reversible	Moderate
Impact of water allocation enforcement	High	Medium	Big	Reversible	Moderate
Impact of establishment of a ground water monitoring network	High	Medium	Big	Reversible	Moderate
Impact of training on rainwater harvesting technologies	High	Medium	Big	Reversible	Moderate
Impact of securing critical water sources	High	Medium	Big	Reversible	Moderate
Impact of implementation of water pollution control	High	Medium	Big	Reversible	Moderate

Table 9. Institutions and Governance Programme

Potential negative impact	**Probability and risk of occurrence**	**Duration of impact**	**Magnitude**	**Reversibility**	**Importance**
Impact of consolidation of activities of NGOs, KWS, the tourism industry and group ranches under AET	Low	Long term	Big	Reversible	High
Impact of promoting integrated land use development and recognizing conservation as a key land use in Kajiado County	Medium	Long term	Medium	Reversible	Moderate
Impact of AET mobilizing its partners to support the existing conservancies and establishing new ones	Low	Long term	Big	Reversible	Moderate
Impact of outsourcing management of conservancies	Medium	Long term	Big	Reversible	Moderate
Impact of integration of AEMP with county spatial plan	Low	Long term	Big	Irreversible	Moderate

7.1 Impact Mitigation

Table 10. Community Livelihood and Social Economic Programme

Activities and Potential impact	**Potential Nature of impact (+/-)**	**Proposed Mitigation**	**Comments**
Impact of establishing grass banks (Olopololi)	Overharvesting and degradation in harvesting areas (-)	Ensure controlledharvesting and carry-ing out EIA and follow up EA on potential impacts	Increased availability of animal feed and strong livestock.
Impact of developing and implementing traditional grazing plans	Disagreements(-)	Proper engagementof the community for ownership of the pro- gram. Carry out an EIA prior to implementation	Better management of pasture within AE
Impact of rehabilitating degraded grazing areas	Lack of grazing plans Potential conflict with community on restricted grazing during rehabilitation	Develop grazing plansand adhere to them Carry out an EIA priorimplementation Enlighten communityon potential benefits of rehabilitation	Improved pasture
Impact of increasing water supply for livestock	Soil erosion and removal of vegetation while laying pipes, potential increase in animal population due to increased water availability	Carry out EIAs before laying water pipes and comply with therecommendations, Assign quotas to wa-ter use among the community	Improved livestock
Impact of establishing a livestock Disease Free Zone	Community Disagreements	Ensure community meetings under competent leadership. Put in place proper dispute resolution	Community cohesiveness leading to Improved livestock healthCommunity ownership of program

Activities and Potential impact	**Potential Nature of impact (+/-)**	**Proposed Mitigation**	**Comments**
		mechanisms	
Impact of Crossbreeding the local livestock breeds for increased production of meat and milk	Lack of Veterinary services, lack of market for improved breeds products	Engagement with potential markets for the improved production of meat and milk Engagement of county government for provision of AI improved breed services	Improved livelihood among resident community and revenue stream
Impact of reclaiming livestock holding grounds and supporting existing livestock markets	Low marketing capacity, degradation of holding grounds and increased demands from community on county government to support marketing infrastructure	Establishment of proper strategies to engage community on the need for holding grounds. Involve county government in planning for the marketing infrastructure to allow allocation of funds in their budget	Improved management of livestock market
Impact of establishing linkages with local and international livestock markets	Low networking capacity, potential strain to ecosystem due to increased demands and thus animal numbers,	Need to carry out potential market analysis and EIA of potential impact on ecosystem due to increased demand resulting from the created linkages	Increased alternative markets for livestock products
Impact of improving existing slaughter houses	Limited knowledge, Increased effluents from slaughter houses and pollution	EIA/EA on the potential impact of slaughterhouses on environment	Increased safety of the meat products
Impact of adopting modern crop production technologies.	Increased agro-chemical impacts, Increased and fragmentation and	Mitigate against negative effects from improved technologies such as use of chemi-	Increased crop production

Activities and Potential impact	**Potential Nature of impact (+/-)**	**Proposed Mitigation**	**Comments**
	pressure on land	cals in crop production, work with county government to control land fragmentation	
Impact of establishing a horticultural canning factory	Waste disposal and air pollution	Implementation of EMP for the proposed facility	Increased traffic around facility
Impact of land subdivision with nucleated settlements where social amenities can be provided	Reduced space for livestock and wildlife movements, Increased pressure on land due to fragmentation	Implementation of EMP for the proposed settlements	Increased degradation around settlements
Impact of improved infrastructure (especially roads)	Dust and loss of biodiversity, Increased traffic and noise pollution affecting the animals	Implementation of EMP for the proposed roads	Increased degradation around the road network
Impact of strengthening education and health services	Improved health and literacy,	None	Improved health and literacy

Table 11. Tourism Development and Management Programme

Activities and potential impacts	**Nature of Impact**	**Proposed Mitigation**	**Comments**
Impact of control and regulation of infrastructure development	Potential for conflicts and litigations, Loss of employment opportunities due to restricted infrastructural development	Ensure Environmental and Social Impact Assessment (ESIA) Studies are undertaken to guide sustainable developments.	AET to develop data base of all potential developments within theEcosystem and ensure compliance.
Impact of diversity of tourism attractions and facilities	Potential for off-road driving biodiversity loss, Increased noise pollution and disturbance to animals, Destabilisation of ecosystem in areas previously not disturbed	Tourism activities and facilities to be undertaken in designated areas as per the zonation maps.	Placement of facilities to be guided by project EIAs and Conservancy management regulations developed by AET.
Impact of opening up a connecting circuit with other ecosystems such as Maasai Mara	Potential for increased traffic leading to ecosystem degradation, Potential conflict between stakeholders due to reduced revenue within their circuits	AET and other stake- holders to recruit and mobilize adequate community ranger patrols.	There is need for proper entry points to all conservancies in theEcosystem to maximize on increased revenue streams.
Impact of the construction of the Visitor Centre on range environment	Potential for biodiversity loss, soil erosion and land degradation among others.	Carry out project En-vironmental impact assessment	The visitor centre will lead to increased knowledge among visitorsand enhanced revenue for the local economy
Impact of development of eatery and entertainment facilities	Increased traffic, noise and littering leading to environ-	AET with stakeholdersin the tourism sector to develop rules for	Compliance with the EMPs and ecosystem rules as well as individual conservancy rules/guidelines will ensure a holistic healthy AE.

Activities and potential impacts	**Nature of Impact**	**Proposed Mitigation**	**Comments**
	mental pollution, Potential health hazards due to increased waste and scavengers around the eateries	Such activities within ecosystem and ensure compliance with individual project EMPsand conservancy rules.	
Impact of establishing a tourism monitoring programme	Better management of the ecosystem	None	Better management of the ecosystem
Impact of quarterly inspections of facilities to assess their adherence to environmental mitigation measures	Better protection of the AE, Potential conflicts and litigation with facility owners who do not adhere to set standards	Establishment of proper dispute resolution mechanisms among the stakeholders	Better protection of the AE
Impact of strengthening community lease funds management offices	Improved welfare among communitymembers and appreciation of the AEMP	Need for establish- ment of proper struc- tures of fund man-agement to for thebenefit of all stakeholders	Improved welfare among community members and appreciation of the AEMP
Impact of establishing well designed, large and environmentally friendly curio shops	Potential degrada-tion of the ecosys- tem from increased human traffic	Ensuring strict imple-mentation of the EMPs of the developed facilities	Potential negative impact on the AE
Impact of development of nature trails	Potential degrada-tion of the ecosys- tem	Ensuring strict imple-mentation of the EMPs of the developed trails	Potential degradation of the ecosystem
Impact of developing a common ecosystem wide marketing strategy	Increased revenue stream, Potential destabilization of the social structures within the community due to increased incomes	Sensitization of community on proper usage of generated revenue in uplifting the living standards among families.	Increased revenue stream

Table 12. Natural Resource Management Programme

Activities and Potential Impact	Nature of Impact	Proposed Mitigation	Comments
Impact of securing wildlife dispersal areas and corridors	Restriction of fenc- ing by land owners and possibility of HWC, Increased loss of pasture for livestock and animals from predators	Proper engagement of community for ownership of the pro- cess and adequate compensation in cas- es of injury and loss	Restriction of fencing by land owners and possibility of HWC
Impact of ban on charcoal trade on poverty re- duction	Loss of livelihood fortraders, potential increase in insecuri- ty due to loss of income stream	Establishment of al-ternative sources of livelihood by the pro- ject	Loss of livelihood for traders
Impact of restriction of quarrying activities	Loss of livelihoodincome by employ-ees and revenue by quarry owners, Loss of supporting businesses due to loss of market	Training on environ- mental friendly quar- rying and proposal for alternative sources of income for the em- ployees	Loss of livelihood income by employees and revenue by quarryowners
Impact of off road driving in the conservancies	Degradation of the ecosystem, In-creased dust and noise pollution and animal disturbance	Restriction of off road driving to specified areas. Establishment of rotational off road driving to allow for healing	Degradation of the ecosystem
Impact of development of pasture management and livestock grazing plans	Restriction of com- munity activities and movement within the AE, po- tential for increased conflicts due to re-stricted animal movement	Community sensitiza-tion on the im- portance of the pro- posed program forownership and reduc- ing conflicts with the project	Restriction of community activities and movement within theAE
Impact of climate change mitigation adaptation	Reduced degrada-	None	Reduced degradation of the ecosystem resulting in positive impacts

Activities and Potential Impact	Nature of Impact	Proposed Mitigation	Comments
action plans	tion of the ecosystem and leading to posi-tive impact,		
Impact of promotion of alternative cooking methods and materials	Improved ecosystem due to reduced use of wood and charcoal, Loss of revenue stream among charcoal and firewood merchants	Provision of alterna- tive sources of energy to community through subsidized purchase and alterna-tive sources of revenue for affected traders	Improved ecosystem due to reduced use of wood, char-coal and reduced carborn emissions contributing to reduced potential global warming and climate change related disasters
Impact of implementing prudent measures to manage the escalating HWC	Reduced HWC and better community engagement in conservation	None	Reduced HWC and better community engagement in conser-vation
Impact of ensuring that the fences are rehabili-tated and maintained	Improved security and reduced HWC	None	Improved security and reduced HWC
Impact of the establishment of an ecosystem wide consolation fund	Improved source of livelihood among the local community	Sourcing of resources from donors and oth- er stakeholders forsustainability of the fund	Improved source of livelihood among the local community
Impact of creating awareness on HWC mitigation strategies among the community	Reduced HWC	Continued community engagement for sus tainable reduction in HWC	Reduced HWC
Impact of strengthening community wildlife scouts	Probability of har-assment of the local community	Proper training of the scouts on civil engagement with the community and proper handling of those in the wrong	Probability of harassment of the local community by thescouts
Impact of water allocation enforcement	Reduced availability of water for farming and likely water	Proper engagement and sensitization of the affected users prior to enforcement	Reduced availability of water for farming and likely conflicts

Activities and Potential Impact	Nature of Impact	Proposed Mitigation	Comments
	conflicts among users		
Impact of establishment of a ground water monitoring network	better management of the ground water and reduced depletion rate	None	better management of the ground water and reduced depletion rate
Impact of training on rainwater harvesting technologies	Increased availability of water for domestic use and reduced pressure on existing sources	None	Increased availability of water for domestic use and reduced pressure on existing sources
Impact of securing critical water sources	Better management of the sources and reduced accidents	None	Better management of the sources and reduced accidents
Impact of implementation of water pollution control	Conflict with the farmers	Sensitization of the farmers and community in general on the advantages of reduced water pollution	Conflict with the farmers

Table 13. Institutions and Governance Programme

Activities and Potential Impact	Nature of Impact	Proposed Mitigation	Comments
Impact of consolidation of activities of NGOs, KWS, the tourism industry and group ranches under AET	Better management of AE and reduction of duplication, Potential conflicts among the stake-holders due to vari-ation of priorities	Proper engagement of all stakeholders to avoid conflict over territories	Better management of AE and reduction of duplication
Impact of promoting integrated land use devel-opment and recognizing conservation as a key land use in Kajiado County	Sustainability of the AE,Potential conflict with various alter-native land users due to lost oppor-tunities	Proper engagement with County planners at early stage of im-plementation	Sustainability of the AE
Impact of AET in mobilizing its partners to sup-port the existing conservancies and establishing new ones	Increased conserva-tion of habitat	Engagement of com-munity and other stakeholders for ownership	Increased conservation of habitat
Impact of outsourcing management of conserv-ancies	Better management of conservancies	Engagement of com-munity at early stage to avoid conflict	Better management of conservancies
Impact of integration of AEMP with county spa-tial plan, Impact of Effective Coordination and strong linkages amongst stakeholders under by AET	Better managed Ecosystem Better managed ecosystem	None None	Better managed ecosystem Better managed ecosystem

Chapter 8: STRATEGIC ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN (SEMMP)

8.1 OVERVIEW

The aim of the Strategic Environmental Management and Monitoring Plan (SEMMP) is to detail the actions required to effectively implement the mitigation measures and recommendations in the SEA. These actions are necessary in order to minimize the negative impacts which might originate from the plan implementation and instead enhance positive impacts of the AEMP. It is also important in order to support the long term management and monitoring of the environmental issues during plan implementation. The SEMMP is dynamic in that it can be updated and amended as new information is realized in the period of implementation.

8.1.2 STRATEGIC OBJECTIVES

The specific objectives of this Strategic Environmental Management and Monitoring Plan areto:

i. Provide guidelines for appropriate management of environmental issues resulting from all activities associated with implementation of all the AEMP Master Plan components that include the: Natural Resource Management, Tourism, community livelihoods and Institutions and governance programs.
ii. Highlight the environmental concerns of the stakeholders and appropriate protection measures.
iii. Provide detailed standards and specifications for the management and mitigation of ac-tivities that have the potential to impact negatively on the physical and social environ- ment.
iv. Provide guidelines to project implementers regarding procedures for protecting the en-vironment and minimizing negative environmental effects, thereby supporting the Master

8.1.3 INSTITUTIONAL ROLES AND RESPONSIBILITY

Clear institutional roles and responsibilities in the implementation of Strategic Environmental and Social Management Plan (SESMP) is crucial for effective implementation of the SESMP. It isa necessary to identify the relevant institutions, agencies, authorities or persons and their re- spective roles in the process. Thus, the following identified entities among others ought to be involved in the implementation of the SESMP throughout the project cycle or as AET deems fit.

For environmental sustainability of the Amboseli Ecosystem, there is need for close and commit-ted monitoring of all the activities. The study therefore proposes that AET establishes an Envi- ronmental Management Unit (EMU) to take responsibility of overseeing the implementation ac- tivities. Such a unit can be run by a team of three officers consisting of an Environmental Man- ager and two assistants. Their main responsibilities will be to understand the environmental re- quirements of the ecosystem, ensure full implementation of the recommended actions, monitorthe performance of the environment, ensure compliance by all agencies, generate and keep records of the trends and write reports. The unit personnel will be expected to understand all the environmental laws and by-laws relevant to implementation of the SESMP and all theequipment required to monitor environmental parameters using the appropriate indicators.

Secondly, the unit will be expected to liaise with the departments responsible for environmentalmatters at the Kajiado County Office, national government agencies and the implementingagencies to ensure effective implementation of the SESMP.

Key implementing agencies include Kenya Wildlife Service, ACC, ATE, AWF, SFS, WARMA, IFAW,Big Life and Lion Guardians.

The National Environment Management Authority (NEMA) is the key institution of the Government overseeing implementation of environmental policy and laws in Kenya.

The authority will take responsibility for general supervision and coordination of all environmental matters. In addition to reviewing environmental reports on the progress of the Ecosystem Plan, the authority's inspectors will be expected to visit any of the projects on routine basis during implementation period to ensure compliance with the recommendations of this SEMMP.

AET may wish to look for a way of mobilizing resources from the investors within Kenya and outside to support sustainable management of the ecosystem.

Institutional arrangement for implementing the Ecosystem Plan is summarized in Table 8.1.4 below:

Table 14. Institutions and responsibilities

INSTITUTIONS	KEY RESPONSIBILITIES
AET	-AET being the plan owners to participate in the entire SEMMP process and take up the administration role,.
Environment Management Unit (EMU)	-EMU to oversee implementation of the EIA and ESIA of all developments within the Ecosystem.
Kajiado County Government	-Provide oversight and advisory services during the
	implementation by volunteering information and services if needed by AET, undertake gazettement of all county development plans and ensure alignement with the County Spatial Plan, ensure all county spatial programs(immediate, short term and long term) are aligned to the gazzeted County Spatial Plan.
All relevant State Departments	
National Government	
Ministry of Industrialization and Enterprise Development	-Policy direction on industries and trade
	-Provide funding,
	-Facilitate in coordination of trade and associated matters
Ministry of Agriculture, Livestock and Fisheries Development	-Capacity building and technical assistance to livestock and crop farmers (farm level value addition).
Ministry of Environment and Natural Resources	-Capacity in enhancing tree cover within the ecosystem and policy guidance on issues of climate change and mitigation strategies.
National Land Commission	-Land and land tenure Issues
	-Approval of land use plans for other developments with potential to degrade the ecosystem.
Implementing Agencies	
Kenya Urban Roads Authority	-Overseeing construction of the roads, foot paths, storm water, and drainage in the ecosystem.
WRMA	-Supply of clean water
	-Regular monitoring of water quality within the ecosystem
	-Monitoring of water abstraction rates. -Monitoring of water quality - pollution of water sources – rivers and boreholes.
National Environment Management Authority	-Review Environmental Impact Assessment (EIA) reports for proposed projects
	-Review environmental audit (EA) reports.
	-Approve EIA and EA reports.
	-Deal with cases of non-compliance.
AET	Overall coordination and marketing of the Amboseli Ecosystem
Kenya Wildlife Service	Coordination of Amboseli Park Activities and human/ wildlife interactions
ACC	Long term Research and Monitoring studies in partnership with others
ATE	Elephant movement and behavioral studies

AWF	Cross border/AE studies
Big Life	Tourism and community ranger support (Mbirikani)
Lion Guardians	Lion studies within the ecosystem
SFS	Monitoring land use changes, generating scientific and social information and Capacity Building
Investors	-Construct and invest according to the ecosystem zones and environmental guidelines and regulations.
NEMA	-Ensuring compliance with county, national and international quality Standards.

The AEMP 2020-2030 has proposed that Noonkotiak Community Resource and Cultural Centre becomesthe focal point for research and monitoring, visitor interpretation, environmental education and AE ad- ministration headquarters**.**

The six actions proposed under the establishment of Noonkotiak Resource and Cultural Centre (NRCC)are to:

(ii) Establish an Environmental Education Centre (Associated infrastructure, library, community conference halls, meeting rooms, exhibition rooms);

(iii) Establish a Research and Monitoring Centre (computer labs, staff houses, science analytical labs, student hostels, kitchen, guest houses, incinerator);

(iv) Establish a Visitor Centre (the Visitor Centre will be a focal point for Ecosystem interpreta- tion and visitor information on the Amboseli Ecosystem. It will be developed and equipped to provide visitor information in a welcoming and friendly way, an amphitheatre where in- troductory lectures will be delivered;

(v) Provide and maintain traditional Maasai homestays (16 manyattas already in place, build more cultural manyattas, water supply, boma fencing, boma security, high end cottages, classrooms for teaching culture, wildlife, environment and how they integrate**);**

(vi) Manage the NRCC sustainably (the NRCC will be a complex development housing several thematic Sub-Centres -Culture, tourism, and Research). As such, for the NRCC to be sustain- able it will require high-level managers for various components (Research, Hospitality, Mu- seum and Education programs).

Noonkotiak Centre will also purpose to generate its own revenue by charging fees for use of its facilities and services by visitors and researchers. Furthermore, staff and the cultural manyatta community mem- bers will be trained in visitor handling so that they can ensure that visitors to the NRCC have memorable experiences**.**

A NRCC website will be created and it will be linked to websites of tourism and research partners in the ecosystem. Marketing materials, such as brochures and leaflets giving information on facilities and ser- vices provided at the NRCC will also be produced and disseminated through the internet and it will also be availed at visitor outlets in the ecosystem such as park entry gates and tourist accommodation facili- ties.

It is important to note that at the time of finalizing this Ex-Post SESA, at least three of the above six actions had been implemented by AET and partners, and implemeation of others are in progress.

8.2 SEMMP SCHEDULE

The SEMMP schedule below outlines the plan activities, environmental management and monitoring actions to be undertaken, institutions responsible, monitoring frequency, monitoring indicators and standard guideline where applicable as shown in the table below.

Table 15. THE SEMMP for Implementation of AEMP

Mitigation Measures and Alternative	**Management and Monitoring Actions**	**Institution Responsible**	**Monitoring Frequency**	**Monitoring Indicators**	**Standard Guidelines**
Establishing grass banks	Capacity building	AET	Annually	No of banks	AEMP
Developing and implementing traditional grazing plans	Engagement of the community	AET/MoA	Annually	Implemented plans	AEMP/Ministry of Agriculture
Rehabilitating degraded grazing areas	Assess status and implement rehabilitation plans	AET	Annually	Rehabilitated area	AEMP
Increasing water supply for livestock	Establish alternative water supplies	AET	Monthly	Identified water supplies	Water Act 2012
Establishing a livestock Disease Free Zone	Establish suitable locations	AET	Annually	No of DFZ	-
Crossbreeding livestock breeds for increased production	Engagement with potential markets	AET	Annually	No of new markets	
Reclaiming livestock holding grounds and supporting existing livestock markets	Engage community	AET	Annually	No of new holding areas	-
Establishing linkages with local and international livestock markets	Engagement with potential markets	AET	Quarterly	No of new markets	
Improving existing slaughter houses	Engage relevant stakeholders	AET	Annually	No rehabilitated	
Adopting modern crop production technologies.	Capacity build on new crop production technologies	AET/MoA	Annually	No adopted	
Establishing a horticultural canning factory	Feasibility study of the facility	AET/KCG	Annually	Study report	

Land subdivision with nucleated settlements where social amenities can be provided	Baseline survey and EIA studies	AET/KCG	Annually	New sub divisions	
Improved infrastructure (especially roads)	Feasibility study	AET/KCG	Annually	No of new infrastructure	-
Strengthening education and health services	Baseline survey on current infrastructure	AET/MoH/MoE	Annually	No of new facilities	MoE/MoH
Control and regulation of infrastructure development in AE	Establishment of management committees for infrastructure development	AET/KCG	Annually	No. of new facilities	AEMP/KCG Spatial Plan
Diversification of tourism attractions and facilities	Promotion of new attractions and establishment of facilities	AET/MoT	Quarterly	No. of new attractions and facilities	Wildlife Act
Opening up a connecting circuit with Maasai Mara	Establishment of proper mechanism to mitigate effects of increased traffic	AET/KCG	Annually	No. of visitors using the corridor	-
Construction of a Visitor Centre on range environment	Capacity building on environment	AET	Monthly	No of visitors	AEMP
Development of eatery and entertainment facilities	Ensuring strict implementation of the EMPs of the developed facilities	AET/NEMA	Annually	No of facilities	EMCA (1999)
Establishing a tourism monitoring programme	Establishment of necessary infrastructure	AET	Annually	Monitoring Reports	AEMP
Quarterly inspections of facilities to assess their adherence to environmental mitigation measures	Establishment of inspection unit	AET/NEMA	Monthly	No of inspections	EMCA
Strengthening community lease funds management offices	Capacity building	AET/KCG	Annually	No of new leases	AEMP

Establishing well designed, large and environmentally friendly curio shops	Ensuring strict implementation of the EMPs of the developed facilities	AET/NEMA/KCG	Annually	No of shops	EMCA
Development of nature trails	Ensuring implementation of the EMPs	AET/NEMA	Annually	Level of implementation	EMCA
Developing a common ecosystem wide marketing strategy	Establishment of implementation committee	AET	Quarterly	Level of engagement	-
Evaluate the impact of securing wildlife dispersal areas and corridors	Carry out EIA/EA of the proposed activity	AET	Annually	EA	-
Enforce charcoal ban regulations	Establish a baseline survey of current status	AET/KFS	Monthly	Number of kilns	KFS act (2002)
Enforce environmental friendly quarrying	Carry out regular EIA/EA of mining activities	AET	Annually	Number of Quarries	Mining Act
Implement restriction of off road driving to specified areas. Establishment of rotational off road driving to allow for healing	Assess extent of off road driving in the conservancies	AET	Annually	No of off-road tracks	-
Enforce restriction on pasture and livestock grazing to established plans	Implement pasture management and livestock grazing plans	AET	Annually	No of management plans	-
None	Impact of climate change mitigation adaptation action plans				
Provision of alternative sources of energy to community through subsidized purchase	Assess the effect of alternative cooking methods and materials	AET	Annually	No of adopted alternatives	Energy Act
Implementing prudent measures	Assess the effect of HWC man-	AET/KWS	Annually	No. of Conflicts	Wildlife Act

to manage the escalating HWC	agement				
Ensuring that the fences are rehabilitated and maintained	Map the fencing, rehabilitation and maintenance	AET/KWS	Monthly	Length covered	AEMP
Establishment of an ecosystem wide consolation fund	Audit availability of resources and use	AET	Annually	Amount collected	AEMP
Continued community engagement for sustainable reduction in HWC	Awareness creation on HWC mitigation strategies among the community	AET	Monthly	No of meetings	-
Proper training of scouts on civil engagement with the community and proper handling of suspects	Strengthening capacity of community wildlife scouts	AET/KWS	Annually	No. of capacity building workshops	Wildlife Act
Engagement and sensitization of the affected in enforcement of water allocation	Regular engagement of water users through meetings	AET/WRA	Monthly	No. of meetings	-
Establishment of a ground water monitoring network	Establishment of infrastructure for regular ground water monitoring	AET/WRA	Annually	Quality and Quantity	-
Training on rainwater harvesting technologies	Carrying out regular training workshops on rainwater harvesting	AET/MoW	Quarterly	No. trained	Water Act
Securing critical water sources	Establishing protection infrastructure for water sources	AET/MoW	Annually	No. secured	Water Act
Sensitization of the farmers and community in general on the advantages of reduced water pollution	Baseline survey on water pollution awareness	AET/WRA	Annually	Water quality	Water quality act
Consolidation of activities of NGOs, KWS, the tourism industry and group ranches under AET	Proper engagement of all stakeholders	AET		Consolidated activities	-

Promoting integrated land use development and recognizing conservation	Engage with County planners	AET/KCG	Annually	Integrated regions	AEMP
Support of existing conservancies and establishing new ones	Feasibility study	AET/KWS	Annually	New conservancies	AEMP
Outsourcing management of conservancies	Consult stakeholders	AET	-	Outsourced managers	-
Integration of AEMP with county spatial plan	Engage KCG	AET/KCG	-	Integrated document	-

8.2.2 The AEMP 2020-2030 has identified ten (10) major issues of concern to be addressed by the SESA. These issues (impacts), their suggested mitigation measures, responsibilities for implementing the measures, time frame/ frequency and implementation costs are depicted in the matrix below.

Table 16. Major issues of concern and their mitigation measures

	Activity	**Impact**	**Mitigation Measure**	**Responsibility**	**Timeframe/Frequency**	**Cost where applicable**
1	Pastoralism and conservation	Decreasing range, human/wildlife conflicts	Prepare grazing management plans and comply with them, capacitate ranger re	Group ranch/conservancy management, grazing committees, KWS	Annually	Management to work out

			sponse teams			
2	Land subdivision	Loss of habitat, blockage of livestock and wildlife routes	Ensure land use activities of the subdivided lands are compatible with pastoralism and environmental conservation	AET, MOA, WRA, KWS	Routine	Management to work out
3	Bush meat poaching	Loss of Species	Enhance community ranger monitoring and educate communities	KWS, AET and partners	Routine	Management to work out
4	Reduction in woody species	Loss of browsing species associated with woodlands	Undertake habitat restoration measures	AET, SFS, KWS, ATE	Routine	Management to work out
5	Overgrazing	Loss of grassland, livestock and wildlife	Establish grass banks, undertake counts	Grazing Committees, KWS, AET	During rainy season and annually	Management to work out
6	Unsustainable land use	Climate Change (draughts)	Promote tree planting programmes within the ecosystem	AET, KWS, KFS, SFS and partners	During rainy periods	Management to work out
7	Increasing agricultural activities in marginal areas	Blockage of wildlife and livestock corridors	Open up closed corridors	AET, KWS, NEMA and land owners		Management to work out
8	Land sale outside the Maasai community	Conversion of pastoralism land to cultivation and tourism use, Loss of landscape and pastoralism mode of livestock production	Promote land use that ensures viable minimum area for wildlife and pastoralism.	AET, Group Ranch Management Committees.	When necessary	Management to work out
9	Reduction of rangelands	Human/wildlife conflicts	Increase ranger patrols, install fences, compensate, consolation programmes.	KWS, AET, partners	Throughout the year	Management to work out

10	Socio-economic and demographic changes	Highly transformed landscape shaped by human activities, competition between wildlife, livestock and people, shrinking space and resources, increased infrastructure.	Restrict human activities to the provisions of the integrated land use plan prescribed by the AEMP	AET in collaboration with all stakeholders	Immediately	Management to work out

8.2.3 The AEMP 2020-2030 has also identified six (6) Key Wildlife Corridors that are likely to be lost and the table below has outlined the corridor, impact, suggested mitigation measure, mitigation responsibility and timeframe.

Table 17. Mitigation Measures for AE key Wildlife corridors

Wildlife Corridor	Impact	Mitigation Measure	Responsibility	Timeframe
1. Amboseli NP-Olgulului South-Kitenden-Kilimanjaro NP Corridor	Potential for agricultural expansion into Olgulului-Ololarashi GR part of the corridor	Encourage compatible land use by developing a conservation lease programmes.	AET, Group Ranches and Partners	Immediately
2. Amboseli NP-Kimana-Kuku-Chyulu West Corridor	Irrigated farming through borehole drilling, proliferation of tourism developments, settlements and fencing along the corridor.	Ensure that Osupuko, Nailepu, Kilitome and Kimana Sanctuary in former Kimana Group ranch and Motikanju in Kuku Group ranch conservancies remain intact.	AET, GR Committees	Immediately
3. Amboseli NP-Olgulului North-Selengei Corridor	Increasing population and settlements	Maintain the corridor to facilitate wildlife access to the wet season grazing areas in Selengei and beyond	AET	Immediately

Wildlife Corridor	**Impact**	**Mitigation Measure**	**Responsibility**	**Timeframe**
4. Amboseli NP-Olgulului North-Mbirikani Corridor	Road kills along Emali-Loitokitok tar road; Uncontrolled expansion of farming along the Mbirikani pipeline, .	Mobilize road use patrols, educate road users, install signage and bumps Control farming along the Mbirikani pipeline and maintain the Olgulului section as a dry season livestock grazing area.	AET AET	As is practicable
5. Amboseli NP-Olgulului West-Ilaingarunyoni Hill	Increasing human activities including charcoal burning, settlements and irrigation	Set aside land around Ilangarunyoni Hills, in both Olgulului and Mailua, as conservancies to enhance protection of ecological linkages and to protect this important pastoralism and wildlife zone.	AET/GR Committees	Immediately
6. Amboseli NP-Olgulului South- Enduimet Wildlife Management Area (Tanzania) Corridor	Human development activities	Promote establishment of conservancies such as Kitirua in Olgulului to salvage this important wildlife and livestock dispersal area. Engage the relevant Tanzanian Authorites	AET, WWF and KWS	Immediately

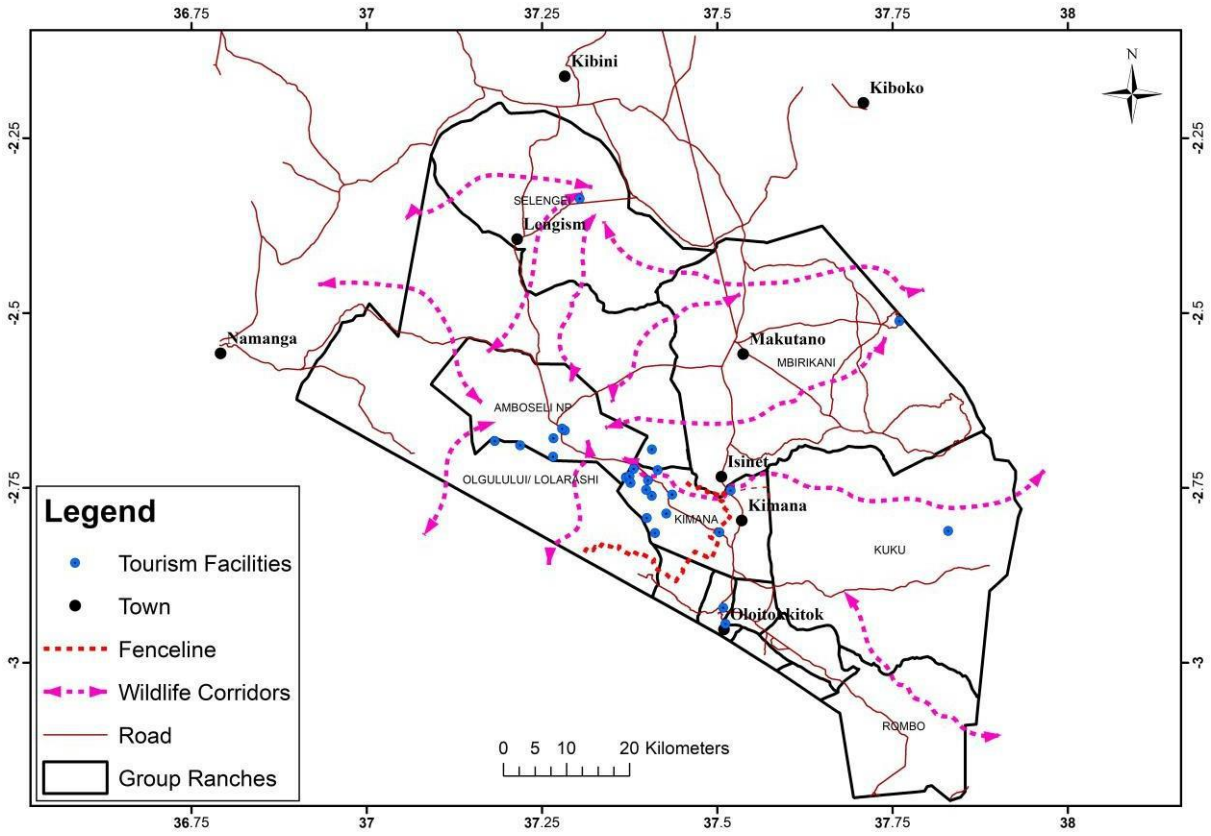

Figure 6: Key Wildlife Corridors in the Amboseli Ecosystem

CHAPTER 9: CONCLUSION AND RECOMMENDATIONS

9.1 Overview

The broad objective of the SEA was to integrate environmental considerations into the Amboseli Ecosystem Management Plan (AEMP). The specific objectives were to:

1. incorporate environmental sustainability measures in the plan,
2. Provide guidelines for sustainable management of environmental aspects of the AE
3. Provide guidelines for incorporation of environmental issues in the sub-projects of themaster plan
4. Provide environmental quality bench marks for monitoring future environmental qualityof the ecosystem, and
5. Recommend institutional arrangements for sustainable management of environment inAE.

9.2 Conclusions

Based on the analysis of all the programmes contained in the AEMP 2020-2030, the SESA for the Amboseli Ecosystem Management Plan concludes that: -

viii. The AEMP (2020-2030) provides a sustainable framework for the implementation of the four proposed programs.

ix. The plan owner (AET) and all stakeholders must ensure compliance with the Strategic Environmental Management and Monitoring Plan (SEMMP).

x. The plan owner (AET) takes up the cardinal role of coordinating and creating linkages with all in- terested and affected parties including funding institutions at national, regional and international levels for effective implementation of all the programmes.

xi. The plan owner and all stakeholders should carry out research and monitoring of the programmes for continual improvement.

xii. It is important to appreciate that there are many group ranches in Amboseli Ecosystem which are managed independently and whose members are members of AET. Membership in AET does not presuppose homogeneity and members are free to make independent decisions at the local levels. AET was created to oversee implementation of the AEMP and safeguard the ecosystem. AET is as an admistration arm of the AE and does not interfere with the internal management of its members but only provides guidance on sustainable implementation of activities/proposals within the ecosysystem

9.3 Recommendations

Reference to the above concluding statements, the following **recommendations a**re made:

a) NEMA to approve the SESA for the gazetted AEMP 2020-2030 under EMCA (Amendment), 2015 for effective enforcement by the plan owner and stakeholders.

b) The Implementation Structure should incorporate all the stakeholders including nation- al government, County Governments, group ranch owners, Private Sector Actors, NGOs and the local communities.

c) The AET to be the overall overseer in the ecosystem governance and all stakeholders in-cluding donors and investors to support AET.

d) Noonkatiak Center be promoted and upgraded as a social and scientific monitoring hubfor all activities within the Amboseli Ecosystem ***(Appendix 8: Noonkatiak Community Resource and Cultural Centre- Concept Ideas).***

e) The Amboseli Ecosystem: Status, Changes and Recommendations by Amboseli Conser-vation Programme for the Amboseli Ecosystem Management Plan (***Appendix 9)*** to be followed during the implementation period of the plan and this SESA.

f) The SESA for the AEMP 2020-2030 be considered as the mother SESA, and other individual Group

Ranch SESAs to be aligned with the mother SESA. This in essesne means that all other plans within the Amboseli will be aligned to AEMP 2020-2030 and where there is conflict, the provisons of the AEMP 2020-2030 and its SESA 2020-2030 will take precedence in guiding decisions on proposed activity or activities within the ecosysytem.

g) The Lead Agencies and Kajiado County Government to support the AET in enforcement of the recomendations of the AEMP 2020-2030 and the SESA of the Plan to ensure compliance and achievement of sustainability for the Amboseli Ecosysyem.
h) The Kajiado Government County Spatial Plan be gaztted and annex the AEMP-2020-2030 and its SEA for effective and regular monitoring by the enfocement officers of all institutions coordinated by AET.
i) The Implementation Structure, Plan Implemetation Committee (PIC) should incorporate all the stakeholders including national government, County Governments, group ranch owners, Private Sector Actors, NGOs and the local communities. The PIC should develop effective communication channels to dissemeniate information, educate and cerate awarenes for effective and sustainable implemetaion of the recommndations.
j) The plan owner to coordinate all stakeholders in mapping out ecologically sensitive areas within the ecosysytem and have them be gazetted as restricted or controlled zones under the county Spatial Plan or any other applicable legal instrument for purposes of strengethening the NRM Program and ensuring sustainability of species and their habitats.
k) AET supported by the PIC becomes the Lead Institution that advises all land owners on the best land use practices, and ensures enforcement and complince with the recommendations of both the AEMP 2020-2030 and its SESA.
l) Developers/investors to undertake individual SESAs for the respective group ranches for the purpose of addressing the different and unique priorities of the respective group ranches such as subdivision, a situation that didn't exist but has eventually happened, due to the changed circumstances, that have led to the decision by the group ranches members to go ahead with the subdivision to avoid transitioning to the Community Land Act 2016.

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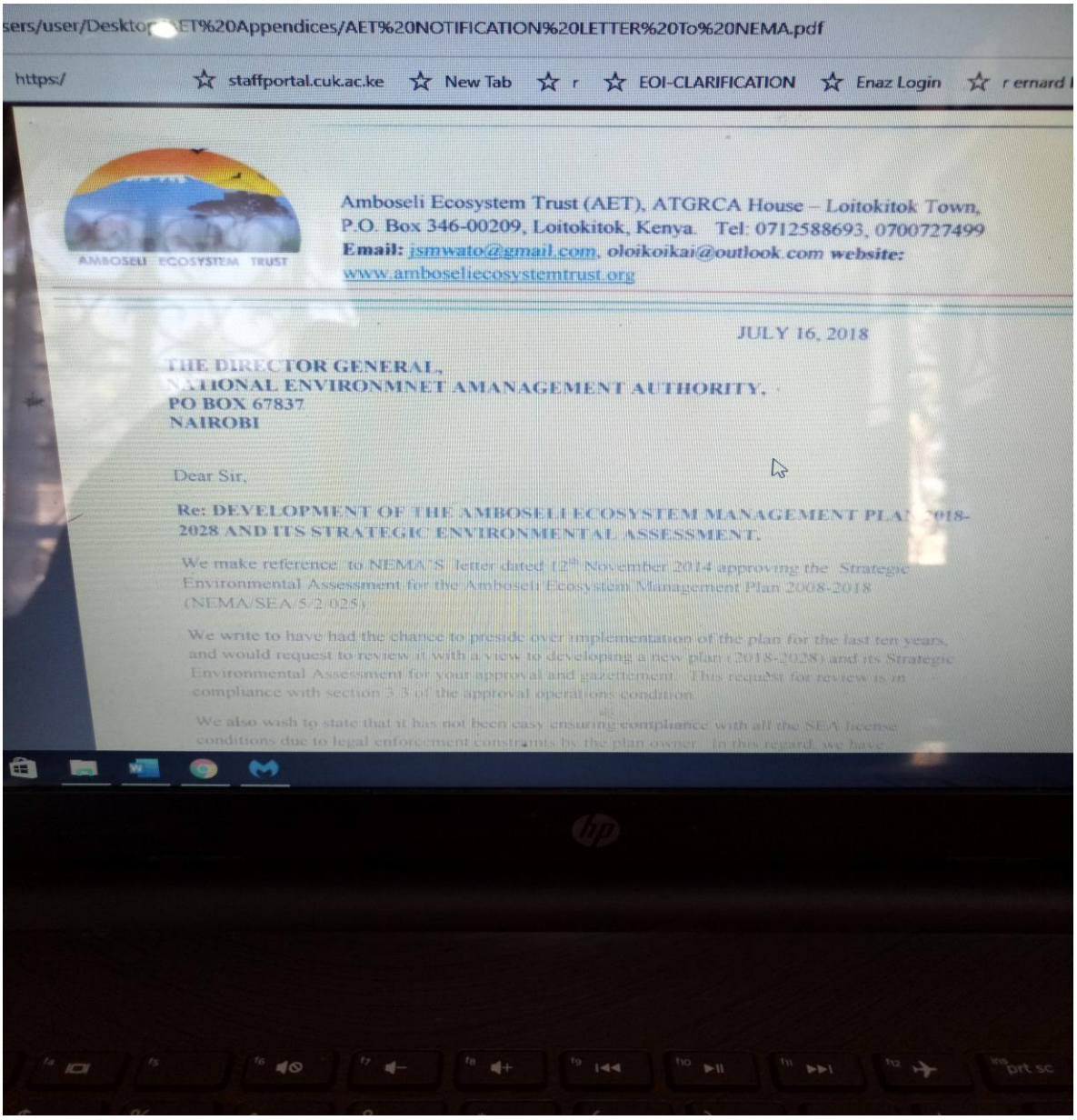
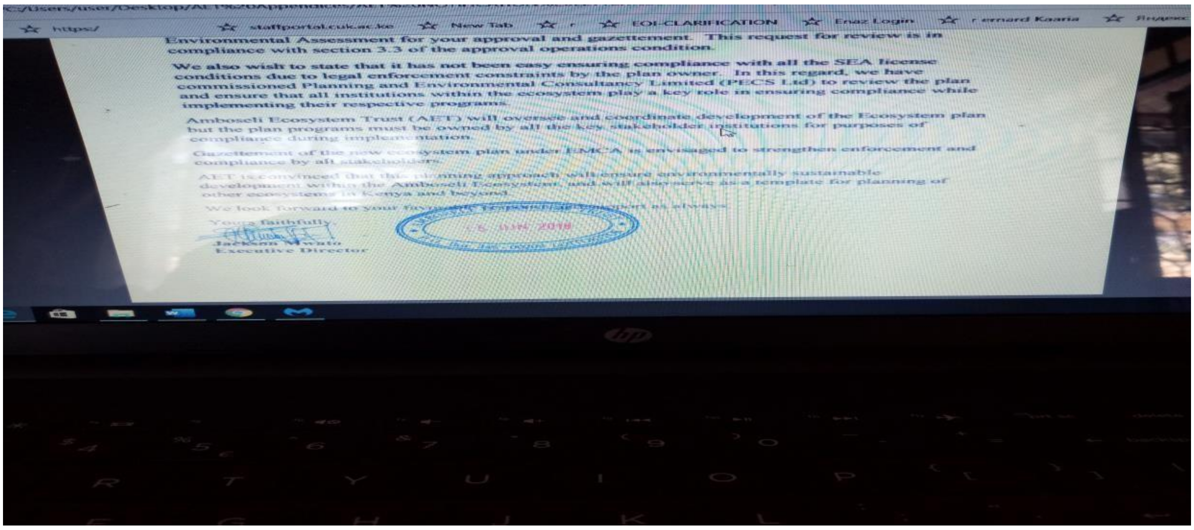
APPENDICES

APPENDIX 1a: AMBOSELI ECOSYSTEM TRUST NOTIFICA TION TO NEMA TO REVIEW THE AEMP 2008-2018 AND THE NEMA AUTHORIZATION LETTER





Environmental Assessment for your approval and gazettement. This request for review is in compliance with section 3.3 of the approval operations condition.

We also wish to state that it has not been easy ensuring compliance with all the SEA license conditions due to legal enforcement constraints by the plan owner. In this regard, we have commissioned Planning and Environmental Consultancy Limited (PECS Ltd) to review the plan and ensure that all institutions within the ecosystem play a key role in ensuring compliance while implementing their respective programs.

Amboseli Ecosystem Trust (AET) will oversee and coordinate development of the Ecosystem plan but the plan programs must be owned by all the key stakeholder institutions for purposes of compliance during implementation.

Gazettement of the new ecosystem plan under EMCA is envisaged to strengthen enforcement and compliance by all stakeholders.

AET is convinced that this planning approach will ensure environmentally sustainable development within the Amboseli Ecosystem, and will also serve as a template for planning of other ecosystems in Kenya and beyond.

We look forward to your favourable response and support as always.

Yours faithfully

Jackson Mwato
Executive Director

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

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website: www.nema.go.ke

NEMA/SEA/5/2/025

31st July 2018

Managing Director,
Amboseli Ecosystem Trust,
ATGRCA House,
P.O Box 346 – 00209
Loitokitok

Att: Jackson Mwato

RE: DEVELOPMENT OF THE AMBOSELI ECOSYSTEM MANAGEMENT PLAN 2018 – 2028 AND ITS STRATEGIC ENVIRONMENTAL ASSESSMENT.

The National Environment Management Authority (NEMA) acknowledges receipt of your letter on the above subject matter and notes the contents therein.

The Authority commends you for the work you are doing to ensure compliance with the relevant environmental laws while implementing the respective programs under the Amboseli Ecosystem Management Plan. National Environment Management Authority (NEMA) has reviewed your letter in line with the SEA approval conditions issued on 12th November 2014.

In view of this, the Authority has no objection to the review of the Amboseli Ecosystem Management Plan with a view of developing a new plan (2018 – 2028). The new plan will need to be subjected to the Strategic Environment Assessment (SEA) Process in line with the provisions of section 57A of the Environment Management and Coordination Act, (EMCA) CAP, 387 and the National Strategic Environmental Assessment Guidelines, 2012.

Thanks for your willingness to comply.

MARGARET NJUKI
FOR: DIRECTOR GENERAL

CC: The Director General
Kenya Wildlife Service
P.O. Box 40241 - 00100
Nairobi

Appendix 1b: SESA Process Approval Letters

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

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P.O. Box 67839, 00200
Popo Road, Nairobi, Kenya
E-mail: dgnema@nema.go.ke
Website: www.nema.go.ke

NEMA/SEA/5/2/080 **13th April 2023**

The Director,
Amboseli Ecosystem Trust
P.O Box 346-00209
LOITOKTOK

RE: APPROVAL OF THE SCOPING REPORT FOR THE STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSMENT (SESA) FOR AMBOSELI ECOSYSTEM MANAGEMENT PLAN (AEMP) 2020-2030, KAJIADO COUNTY

The National Environment Management Authority (NEMA) has reviewed the issues addressed to the scoping report that was submitted to the Authority on 11th April 2023.

In light of the provisions of section 57 A of the Environmental Management and Coordination Act (EMCA), Regulations 42 and 43 of the Environmental (Impact Assessment and Audit) Regulations, 2003 and the National Guidelines for Strategic Environmental Assessment 2012. The scoping report for the proposed Amboseli Ecosystem Management Plan (AEMP) 2020-2030 is hereby **APPROVED.** However, the issues raised vide our letter dated 27th February 2023 *(copy attached)* needs to be comprehensively incorporated during the SESA study.

As you prepare to undertake the SEA study, the Authority informs you that effective and sustained stakeholder's engagement and appropriate communication methods are vital for a successful SEA process.

Ensure that linkages between the Master Plan and other regional, National and local plans are taken into consideration. You are informed to engage your SESA experts *(Planning & Environmental Consultancy Services (PECS) Ltd)* who shall conduct the SESA process and prepare the draft SESA report for submission to NEMA.

Along with the prescribed fees of Kshs. 1 million (1,000,000) submit ten hard copies and one electronic copy of the draft SESA report (which should include a non-technical summary and the submission form).

MARGARET NJUKI
FOR: DIRECTOR GENERAL

Appendix 2a: Proceedings of the Plan Scoping and Screening by the Core planning Team at African Conser- vation Center (ACC), Nairobi.

First Core Planning Team Meeting

Agenda

1. **Meet face to face**
2. **Get to know the team**
3. **Review of the planning process**

The meeting was held at ACC Karen on 11th July, 2018.

Opening Remarks: The Chair of the meeting Mr Johnson started off the meeting by welcoming members and asked all to introduce themselves. After introductions, the AET CEO Mr Jackson welcomed the PECS Ltd Consultants led by Dr. Bernard Kaaria and congratulated them for demonstrating capability to un- dertake the AEMP preparation. He also said that the contract to the consultancy firm is now officially granted and that work should start immediately.

The following are the key highlights of the meeting:

- It was noted that process has one year time frame starting from 15th July, 2018, to be ready same time next year, around July 2019
- It was agreed that the consultants will need to meet the Senior researchers and stake holders inthe Amboseli ecosystem
- That the plan needs to be participatory and remarkably from the existing plan, by incorporatingcomponents of that were previously missing like community and grazing activities
- The meeting noted that AET is now fully functional and effectively coordinating other ecosystemstakeholders.
- Dr. David Western gave a background on origin and evolution of the plan since 2004.He empha-sized the need to understand the concept of minimum viable area
- He also emphasized importance of data collected by ACP, which he recommended to the con-sultants to make reference.
- He also indicated to the team that he has prepared a 45 page summary of the issues surround-ing the plan and promised to make it available to the consultant
- He reported that the new wildlife strategy recognizes the minimum viable conservation area (MVCA) planning concept.
- Challenged the consultants to come up with plan that can serve as a template for other inte-grated ecosystem plans
- The planning process should take account of Noonkatiak Community Resource Monitoring andCultural Center and factor its operations in the plan.
- The plan process should take into consideration the spatial plan being developed by Kajiado County Government, the grazing and land use plans by individual group ranches with a view tointegrating them in the plan
- The consultant will play coordination role of the planning process and ensure effective participa-tion by all stakeholders

- The Chairman tasked the consultant to develop a work plan and share with the Core Planning team to enable forward planning.
- The consultant was requested to give a minimum of 14 days' notice when planning for important consultation meetings with stakeholders
- Finally the consultant made a short power point presentation of the Planning and Strategic Environmental Assessment process.

Appendix 2b: Proceedings of the Plan Scoping Work-shop for Amboseli Ecosystem Held on 11 October 2018 at Ol Tukai Lodge

Annex 3: Amboseli Ecosystem Plan Scoping Meeting Agenda

8:45 – 9:00 Registration
9:00 – 9:10 Introductions
Welcome remarks-AET

9:10 – 10:30 Amboseli Ecosystem Plan Foundation

ACP: The Ecology and Changes of the Amboseli Ecosystem
AET : The AEMP 2008-2018 and SEA implementation and lessons learnedKWS: Amboseli National Park-Management Issues and Options
NEMA: Compliance with the ecosystem management plan at implementation levelPECS: The AEMP Planning Road map and progress to date

10:30 – 11:00 Tea

11:00-13:00 Plan Scoping

- Defining the Geographic Scope
- Identifying plan owners
- Identifying key values
- Identifying Issues, Problems and Opportunities to be addressed by the plan

13:00-14:00 Lunch

14:00-16:00 Plan Scoping continued

- Developing the AE vision
- Identifying stakeholders
- Developing a stakeholder participation and communication strategy
- Information requirements for planning

16:00-16:30 Tea

16.30-17.00 Next Steps and closing

Introduction

This report sets out the proceedings of a stakeholder plan scoping meeting for Amboseli Ecosystem (AE) held on 11 October 2018 at the Ol Tukai Lodge Amboseli. This was the first stakeholder meeting organized for development of a new management plan for the Amboseli Ecosystem. This document outlines the key decisions made by stakeholders at this meeting.

Workshop Objectives

The principal objective of the Plan Scoping Meeting was to discuss and agree on:

- Who owns the management plan and is responsible for its implementation;
- The geographical scope of the plan;
- The management problems & opportunities to be addressed by the plan;
- Management Programmes to address these problems and opportunities;
- The exceptional resource values in the AE;
- A provisional long term vision statement of the AE; and
- Stakeholders potentially affected by the plan

Opening remarks

Remarks by Jackson Mwato, Executive Director, AET
In his opening remarks, Mr. Mwato welcomed participants to the meeting and pointed out that:

- That the AEMP 2008-2018 has expired, hence need for a new one
- The scoping meeting is a mini launch of the planning process as the main launch is slightly de-layed by protocol issues
- That after 2 month trying to fix the date for actual launch, it has become difficult because of thepacked diaries of the officials targeted to grace the occasion
- That AET decided to unlock the process with the mini launch as the official launch is waited

He also noted that:

- AET is now established as the coordinating body for the ecosystem plan, making it easier nowunlike before
- Before AET, KWS was steering stakeholder meetings and activities
- AET has made Amboseli ecosystem way ahead of other areas because it is the only place with anecosystem level plan that is being implemented
- AET is now coordinating small management plans for the group ranches/conservancies

- The success of Plan Implementation Committee – PIC – which has hitherto played a big role in regulating developments in the ecosystem– Example, it vetoed vision 2030 project that wanted to set up a tourism city at Mashenani area. It also put pressure to realign road initially designed to pass via Amboseli National Park. It also managed to move an upcoming town next to Kimana Gate. This was noted as a big plus for PIC and the new management plan was asked to give it more leeway to handle its mandate of harmonizing divergent interests
- The review of the AE plan is being supported by many organisations including UNDP, Big life, IFAW, Lion Guardian, KWS, Ol Tukai Lodge among others

Remarks by Kenneth Ole Nashu, Senior Warden, Amboseli National Park

In his remarks, the Senior Warden noted that:

- The management plan would be a milestone for integrated management plans
- The mini launch was vital before the official launch to give participants time to interrogate theplan review process
- Previous plan has xpired and there is need for a new one to guide management for the next 10years
- There is great concern over many land use activities in the ecosystem that are inimical to con-servation. Hence there is need for a management plan to guide land use regulation
- There is need to safeguard the ecosystem to protect all interests – livestock, people, wildlife etc
- All stakeholder are appreciated for collective efforts to manage the ecosystem
- there are many issues in Amboseli National Park that would benefit attention by the manage-ment plan
- that shrinking space - for livestock and wildlife is a big challenge
- degradation in the ecosystem has increased competition for pasture and concentration of wild-life within the park. Example, 950 elephants were counted inside the park two weeks ago
- human wildlife conflict is another problem –closely related to lack of space, and increase in oth-er land uses like agriculture
- Another challenge in the park is administrative – staffing issues especially shortage of rangers,which is complimented by staff employed by stakeholders like big life etc
- Another problem -congestion of tourists, which is a big challenge because the park is small
- He said options lie with working better with community. E.g. Kitenden conservancy, which as-sists in lessening pressure on the park
- Another challenge is roads, noting that there very bad roads outside the park – which are classi-fied roads by government and ambit of KURA but which is too bureaucratic to deal with.
- there is need for modern structures for curios/beadworks
- that trans boundary issues are very important eg elephant and wildebeest and asked the plan toconsider cross border issues
- Water is an important subject in the plan – for wildlife and livestock
- Infrastructural development – to be regulated in consideration of livestock and people – eg un-derpasses and overpasses.
- Degradation and invasive species – plan to manage the invasive species before they mess theecosystem

Remarks by Dr. David Western, ACP

In his remarks, Dr. Western pointed out that:

- Fifty years (50) of data has been compiled into a report already given to the consultant. Henceno need for more comprehensive submission at the meeting
- No other ecosystem has as much information as Amboseli and hence it should be possible to take advantage of all this knowledge to come up with the best plan

- history is vital to guide the new developments and proposals. For instance, historically, wildlife used to move away together with livestock, but now we have resident populations of both cate- gories, including people.
- The biggest change has been observed with elephants – whose population dropped from about 1000 in 1970s and increased to about 1500 recently. And now they have started concentrating in Amboseli Park causing huge impact
- Also, most Maasai don't migrate as before and this sedentarization need to be understood and factored in the plan
- the above changes have created conflicts which become very serious during drought and assuch, how to manage the conflicts is very important
- the plan must also consider human development, including shambas and settlements e.g. 80% of herbivores are livestock and 20% wildlife and there is need to plan for all these sectors.
- There is degradation of pastures affecting livestock. The plan has to concentrate on livestock de-velopment – productivity by allocating big land for cattle and wildlife to minimize losses. It should also explore possibility of moving livestock from subsistence production to commercial production in order to create space for wildlife
- The plan is not about wildlife alone and must not be perceived to be about wildlife by the public.That it must get land use planning right as that is what will save wildlife
- resource assessors who tell us the condition of everything is important
- Centerpiece of the plan must be the Nongotiak centre. Centre of information and research, which in future will also become planning centre

Remarks by the planning consultant, Dr. Benard Kaaria - PECS

In his remarks, Dr Kaaria:

- Informed the workshop that the previous management plan was gazetted under KWS Act 2013. And since KWS has no control of land use outside the park, it poses a challenge on who will ga- zette the plan and under what law
- Gave the workshop detailed account of his efforts to engage NEMA and get them to commit to gazette the new plan
- noted the need for the plan to be gazetted under EMCA 2015 which allows plan owner to have more teeth in enforcing compliance
- noted that there is need for high level participation and commitment

Summaries of the deliberations of the plan scoping workshop discussions and the decisions made re-garding each of the points outlined under the workshop objectives section above are set out in the fol-lowing sections of this report. Details of participants of the plan scoping workshop are given in Annex 1 while annex 2 presents the agenda for the Plan Scoping Workshop.

Geographical Scope of the Management Plan

In deciding on the geographic scope of the plan the meeting was guided by the following questions:

1. ***Which ecological processes link the different geographic components of the AE E.g. Livestock movement patterns, wildlife migration***

2. ***Social connections in the ecosystem***

The workshop agreed that the plan will cover the six group ranches (Olgulului/Olorarashi, Selengei, Mbi- rikani, Kuku, Rombo, Kimana group ranch (now subdivided) and Amboseli National Park, which together host over 95 per cent of the wildlife populations in the Amboseli Ecosystem. The migratory wildlife spe- cies in Amboseli, such as elephants and wildebeests, although they spill over to adjacent ecosystems, mostly forage in the six ranches and the park.

Plan ownership

The question of who owns the plan and has lead responsibility for its implementation has important im- plications for how the planning process will be carried out and how stakeholders will be involved.

In identifying the plan owners the meeting deliberated on the following issues:

- Who are the competent authorities (legal owners) in regard to land and land use in the planning area?
- The plan will contain Prescriptions and Limits of Acceptable Use (e.g. on tourism use). The plan owners will need to agree on these, and then enforce them.
- The plan will contain Activities that will need to be implemented if it is to succeed. The plan owners will need to agree on these activities, assign responsibility for delivering them, and allocate the necessary re- sources.
- The plan owners will need to sign the Approval Page of the plan, agreeing that they will implement the contents of the plan
- An alternative to being a plan owner is to simply be a stakeholder. Stakeholders are not directly responsi- ble for plan implementation, and plan activities will therefore address stakeholder needs to a lesser ex- tent

The workshop deliberated on plan ownership and agreed that ***the plan will be owned by community – represented by AET***. The AET Governing council is made up of land owners who endorse all decisions. AET coordinates the implementation of the 2008-2018 management plan with support from the multi- agency Plan Implementation Committee.

Problems and Opportunities to be addressed

In a brainstorming session, workshop participants identified what they considered to be the major man- agement problems and opportunities facing the AE. This analysis provides a foundation for the identifi- cation of the management programmes the plan should contain (discussed in the following section), as well as for the development of each management programme's objectives and actions at subsequent planning events.

Table 1 and 2 present the outcome of the problems and opportunities analysis respectively.

8.1.1.1.1.1 Problems to be addressed by the management plan

1. Incompatible land uses eg. agriculture in wildlife corridors 2. Encroachment into wildlife areas 3. Recurring droughts 4. Deforestation 5. HWC 6. Implementation hiccups brought about by legal issues 7. Land Subdivision 8. Insecurity 9. Climate change 10. Increasing sedentary lifestyle 11. Habitat Fragmentation 12. Limited Resources to fund implementation 13. Charcoal burning 14. Sand harvesting 15. Poaching 16. Land and soil Degradation 17. Disagreements between stakeholders 18. Conflicts of interest by the legal document holders 19. Lack of transparency in distribution of communal income 20. Development in the wrong places; Lack of control on development along water course 21. Migration of wildlife 22. Lack of or delayed compensation 23. Lack of benefits from the wildlife/ Amboseli National Park 24. Lack of support from government/ KWS on conservancies 25. Poor Governance structures 26. Population increase	27. Inadequate Livestock and grassland management 28. Disconnect between government (KWS) and conservation 29. Politics in the ecosystem 30. Overgrazing and Overstocking 31. Reduced space for wildlife conservation movement and livestock grazing 32. Poorly planned tourism development 33. Increase poverty levels among community 34. Local community exploitation by outsiders 35. Poor infrastructure 36. Fencing 37. Poor planning on Water distribution 38. Lack of ways of curbing fire and fire fighting process 39. Lack of security rangers patrol 40. Unplanned settlements 41. Lack of consultation incase of plan implementation 42. Little benefit to the community/ wildlife accrued benefit 43. Mining 44. Corruption 45. Illiteracy 46. Diseases 47. Communication 48. Land sale bringing people with different land use plans 49. Insufficient Management capacities 50. Ownership of the land should the organization go into insolvency

8.1.1.1.1.2 Opportunities to be addressed by the management plan

1. Wealth of documented information 2. Model of community based conservation approach 3. Availability of un-subdivided community land 4. An intact culture 5. Management plan 6. Policy environment 7. Community goodwill 8. Amboseli Ecosystem Trust 9. Many stakeholders eager to contribute 10. Existence of the previous plan 11. skills 12. Livestock economy 13. Community projects to improve livelihood 14. Equipped rangers 15. Fundraising plan 16. Awareness creation 17. Creation/ development of community conservancy	18. Productive rangelands if managed properly 19. World renowned ecosystem and tourism value 20. Scholarships 21. Well equipped hospitals 22. Available open communal land 23. Communal land ownership 24. Management plan fully implemented 25. Resource centers 26. Development of land bank to purchase land 27. Compensation fund

Preliminary Management Programme Identification

The problem and opportunities analysis described in the previous section provided the basis for the pre- liminary identification of plan management programmes. The four management programmes the plan islikely to contain are:

- **Community Livelihood and Use Programme**
- **Natural Resource Management Programme**
- **Tourism Development and Management programme**
- **Institutions and Governance Programme**

Each of these programmes, and the principal management themes identified under each of them, are presented in Table 3 below. The themes will provide the basis for the development of management pro- gramme objectives and actions at subsequent planning events.

8.1.1.1.1.3 Potential management programmes and major themes

Community Livelihoods and Use	**Natural Resource Management**	**Tourism Development and Management**	**Institutions and Governance**
• Livestock Management • Agricultural Development • Other Socio-Economic activities	• Habitat management • Wildlife Management • Water resource management	• Infrastructure development • Product diversification • Tourism Investment • Administration & Management • Marketing	• Institutional collaboration • Natural resource governance

Amboseli Ecosystem's Exceptional Resource Values

The AE Exceptional Resource Values (ERVs) describe the area's key natural resources and other features that provide outstanding benefits to local, national and international stakeholders and that are especial- ly important for maintaining the ecosystem's unique ecological, scenic, and socio-cultural characteris- tics. Table 4 presents all the ERVs identified at the scoping workshop..

8.1.1.1.1.4 AE's Exceptional Resource Values

Category	Exceptional Resource Value
Biodiversity	• Wildlife Corridors
	• Big tusker elephants
	• Large Carnivores
	• Birds
	• Buffaloes
	• wild dogs
	• Ostriches
	• Acacia woodlands
	• Black rhino
	• Grasslands
	• medicinal herbs
	• Natural Forest
	• Livestock
	• Ecological services
Scenic	• Mt. Kilimanjaro
	• Valleys
	• Chyullu hills
	• Kitirua area
	• Loosikitok hill
	• Swamps and rivers
	• Lake Amboseli
Socio-cultural	• Traditional Pastoralism
	• Bead works
	• spiritual development
	• Rich Maasai culture & local people
	• Employment
	• Tourism
	• mining potential
	• Cross-border connections
	• Health – medicinal materials
	• Education
	• Totems
	• Income generation

Provisional Vision Statement

A management plan vision is an inspiring forward looking statement that describes the planning area as it could be in 10 years as a result of implementing actions and resolving issues related to:

- The important features of the planning area;
- The way people value and support the place and
- How they experience it.

The purpose of a vision is to establish common ground among those involved with and affected by the plan, communicate the unique and important special characteristics of the planning area, to inspire sup- port for it, and to provide an overarching framework for the more specific management objectives.

The workshop deliberated on the vision statement for AE by brainstorming on the future desired states regarding the AE's socio-ecological system. The individual contributions of the workshop participants arelisted in box 1 below

Box 1: List of AE's future desired conditions proposed by workshop participants

1. A balanced ecosystem where resources are shared equitably for the betterment of the land ownerslivelihoods
2. A more inclusive management plan that will cut across the views and to take into consideration ofpeople/ communities to be able to achieve the plan goals looking into the future
3. To have an exemplary conservation community with pristine wilderness and coexistence with peo-ple, farming that is sustainable and people who are happy and proud of their natural heritage
4. To see a well-managed ecosystem in which all the interrelated living and non-living organisms are inharmony with one another and that communities derive maximum benefits on land resources
5. Ecosystem with freedom of movement for all people and animals (livestock and wildlife) and wellSecured connectivity
6. Holistic grazing on communal land
7. No shoats
8. Improved livestock breed and viable manageable livestock population
9. Improved infrastructure and well-coordinated ecosystem management in both tourism and otherkey facilities or issues
10. Cross-border security
11. Communities around the park benefiting almost or more than KWS because of conservation
12. Conservancies becoming self-sustainable
13. More people from the communities around the park being employed in the tourist facilities aroundthe park
14. more conservancies and wildlife corridors Created
15. Maintenance of wildlife numbers living compatibly with traditional pastoral lifestyle
16. Controlled land selling
17. More graduates in the community
18. Improved health care
19. Improved culture
20. Improved security
21. Fence in water catchment areas
22. Afforestation

23. The management plan effective and implemented
24. Improved livelihood of the communities around the ecosystem
25. Improved tourism environment
26. Amboseli Ecosystem should have a vibrant governing system that will reduce human wildlife conflicts
27. It should be a role model to be adapted in other ecosystems in the country
28. Improved infrastructure
29. In all planning is important to consider balance especially livestock and tourism and asked the members to appreciate significant role played by tourism in the ecosystem and national economy

The following is the provisional Vision Statement for the Amboseli Ecosystem:

"A balanced ecosystem where resources are shared equitably for the betterment of the land owners livelihoods"

- ***Community livelihoods and Use:*** ***Pastoralism remains the mainstay of the community's livelihood. The ecosystem is providing a wide range of goods and services that meet socio-economic needs of the community. The communities' resident in the ecosystem support conservation efforts through active participation in conservation programmes and they show case their rich and diverse culture to diversify tourist attractions.***

- ***Natural Resource Management:*** ***Amboseli Ecosystem features a diversity of ecological processes, with rich and varied biodiversity interactions. This has resulted in increasing healthy populationsof wildlife. Critical wildlife habitats such as dispersal areas, migratory corridors, and dry season wildlife watering and grazing areas have been secured. Improved protection and management of critical springs, swamps and rivers, and rainwater harvesting has increased supply of water for people, livestock and wildlife.***

- ***Tourism Development and Management:*** ***The visitors are guaranteed a transformational and memorable experience as they interact with the AE in a peaceful, serene and secure environment. A variety of culture and nature based tourism activities are enjoyed.***

- ***Institutions and Governance:*** ***The Ecosystem has effective management institutions and clear governance systems.***

Stakeholder Analysis

The workshop participants analyzed the key organizations, institutions or groups potentially involved inor affected by the plan and grouped them according to the following categories:

- Implementers
- Supporters/Beneficiaries
- Partners/Collaborators
- Policymakers
- Opponents/Losers

This analysis is an important precursor for identifying which stakeholders should be involved in particular planning events. The results of the stakeholder analysis are presented in Table 5 below.

8.1.1.1.1.5 A preliminary analysis of stakeholders for the Amboseli Ecosystem Management Plan

Implementers	Supporters	Part-ners/collaborators	Beneficiaries	Policy Makers	Opponents/ Losers
• Local Com-munity • KWS	• NGOs • KWS • KWCA	• NGOs • KWS • Research Groups • Tourism Partners • ACC • AET • IFAW • Big Life Foundation • Private Sector • Private Land Owners • NEMA • WRMA • County Government • Community conservancies	• Local communi-ties • KWS • Land owners • Business com-munity	• KWS • County govern-ern-ment • WRMA • NEMA	• Poachers • Land grab-bers • communit ymembers

Further, the workshop made the following recommendations:

- Core planning team – The CPT should be broadened from previous one, which was more wildlife focused, to reflect diversity of mandate. It should include AET, KWS, IFAW, NEMA, Big Life, Am- boseli Trust for Elephants, ACC, AWF and Ministries responsible for Land, Water, Agriculture and Livestock
- Discussion on stakeholder participation strategy to wait for stakeholder planning meeting to be convened later
- Stakeholders from the tourism sector should be consulted and they should be encouraged to participate and commit to the planning process

Management Planning Activities for the Next Eight Months

The workshop deliberated on management planning activities that will be implemented between Octo-ber 2018 and June 2018 and agreed on the following next planning steps:

1. Stakeholder Planning Workshop
2. Village level consultative meetings
3. Expert Working group meetings
4. Final Plan drafting
5. Plan endorsement and approval
6. Plan gazettement

APPENDIX 3: PROCEEDINGS OF THE WORKSHOP FOR THE AMBOSELI ECOSYSTEM MANAGEMENT PLAN KYAKA MACHAKOS 26-27TH MARCH 2019

Background

The Amboseli Ecosystem (AE) planning process began in October 2018, with a "Plan Scoping Meeting" held at Ol Tukai Lodge. This meeting defined the geographic scope of the AE management plan, and the major problems and opportunities in the AE that the plan should address. This meeting was followed by the collection and synthesis of resource base information and the launch of stakeholder consultations necessary for plan development. The consultations are be- ing held through small consultative meetings and large planning workshops. In addition, four working groups (WGs) have been formed to develop the eight management programmes that have been agreed upon by stakeholders and will form the heart of the new AE Management Plan. These working groups and the programmes developed are:

AEMP Working Groups

Working Group	Management programme
1. Natural Resource Management	1. Habitat
	2. Wildlife
	3. Water
2. Tourism	4. Tourism Development & Management
3. Socio-economic	5. Livestock
	6. Agriculture
	7. Socio-economic
4. Governance	8. Institutions and Governance

The WGs are intended to be technical forums, and therefore group membership is selected on a technical, not representational, basis. The outputs of the WGs will later be reviewed and dis- cussed by all stakeholders involved in the planning process at the subsequent Stakeholder Plan Validation Workshop.

A. Tasks

The **Natural Resource Management Working Group** will be responsible for elaborating the following aspects of each of the AE plan's Habitat, Wildlife and Water resource management programmes:

1. Developing an overall programme purpose and strategy that provide general statements of policy to guide habitat, wildlife and water resource management activities in the AE over the next 10 years, and which is linked to national and county policies and strategies.
2. Reviewing and elaborating the 10-year provisional programme management objectives, and identifying management actions to achieve the management objectives.
3. Reviewing the provisional AE zoning scheme and management prescriptions and guidelines for each zone to ensure that AE's ecological integrity is maintained.

The **Tourism Management Working Group** will be responsible for elaborating the following aspects of the AE Plan's Tourism Development and Management Programme:

1. Developing an overall tourism strategy for the AE, that provides a general statement of policy to guide tourism development and management activities in the AE over the next10 years, and which is linked to national and county tourism policies and strategies.
2. Reviewing and elaborating the 10-year provisional tourism management objectives, and identifying management actions to achieve the management objectives of the Programme
3. Reviewing the provisional AE zoning scheme including developing specific tourism development and management prescriptions and guidelines for each zone (including "Limits of Acceptable Use" for tourism activities, concession development, bed numbers, etc.)

The zoning scheme and the associated tourism management prescriptions and guidelines, de- signed to control use of and minimise pressures on AE tourism features and facilities, are re- garded as an especially important aspect of the Tourism WG's outputs, given the anticipated growth in tourism in Kenya over the coming years and the need, as identified by AE stakehold- ers, to maintain the AE's ecological integrity.

The **Socio-economic Working Group** will be responsible for elaborating the following aspects of each of the AE plan's Livestock, Agriculture and Socio-economic management programmes:

1. Developing overall programme purpose and strategy that provide general statements of policy to guide programme management activities in the AE over the next 10 years, and which are linked to national and county policies and strategies.
2. For each programme, review and elaborate the 10-year provisional programme manage- ment objectives, and identify management actions to achieve the management objectives.
3. Reviewing the provisional AE zoning scheme and management prescriptions and guidelines for each zone to ensure that zoning considers socio-economic development.

The **Governance Working Group** will be responsible for elaborating the following aspects of each of the AE plan's *Institutions and Governance* management programme:

1. Reviewing and developing overall programme purpose and strategy for the Institutions andGovernance programme that provide general statements of policy to guide Institutions andGovernance management activities in the AE over the next 10 years, and which are linkedto national and county policies and strategies.
2. Reviewing and elaborating the 10-year provisional programme management objectives, and identifying management actions to achieve these management objectives.
3. Reviewing the provisional AE zoning scheme and management prescriptions and guidelines for each zone.

B. Time Schedule

It is expected that the above TOR can be accomplished in a 3-day meeting of the Group, with po-tentially some additional individual contributions after the meeting. The ground to be covered atthe meeting is shown in the box below.

C. WG Meeting

- Review and development of the AE Livestock, Agriculture and Socio-economic Strategies
- Review of Livestock, Agriculture and Socio-economic Programmes Objectives
- Identification of management actions to meet the Programmes management objectives
- Review of AE Zoning Scheme and management prescriptions

D. Working Groups Membership

The following Core Planning Team members and Socio-economic experts will be invited to

par-ticipate in the AE Socio-economic WG:

S/N	WORKING GROUP	MANAGEMENT PROGRAMME	MEMBERS	ORGANIZATION
1	Natural Resource Management	1. Habitat 2. Wildlife 3. Water	1. KoikaiOloitiptip	AET
			2. KenethNashuu	KWS
			3. Vicki Fishlock	ATE
			4. Anthony Kiande	WARMA
			5. Leela Hazah	LION GURDIAN
			6. Daniel Metui	MBIRIKANI CHAIR
2	Tourism	Tourism Development and Management	1. Daniel Kaaka	AET
			2. Jeremy Goss	BIGLIFE
			3. Johnston Sipitiek	ACC
			4. Nelly Palmares	AD-KWS
			5. Florence Mwikali	NEMA
			6. Samuel Kaanki	ALOCA
3	Social Economic	1. Livestock 2. Agriculture 3. Socio-Economic	1. Peter Solonka	ACC
			2. Apollo Kariuki	KWS
			3. Daniel Leturesh	OLGULULUI-CHAIR
			4. NdundaZakayo	Min-AGRICULTURE
			5. Esther Solonka	Min-LIVESTOCK
			6. Abraham Loomuna	AET
4	InstitutionAnd Governance	Governance	1. Jackson Mwato	AET
			2. Keen Parashina	COUNTY GOVT
			3. Evans Mkala	IFAW
			4. Emmanuel Mpararia	GOVERNANCE CHAIR
			5. Moses Okelo	SFS
			6. Joel Ketukei	KUKU

2. WORKING GROUP PRESENTATIONS

A. NATURAL RESOURCE MANAGEMENT WORKING GROUP

The participants were as follows: -

Name	***Organisation***
1. Koikai Oloitiptip	AET
2. Kenneth Nashuu	KWS
3. Christine Mwinzi	KWS
4. Tal Manor	ATE
5. Katitio Sayialel	ATE
6. Luke Mamai	LG
7. Jackson Mereesi	EGR

Management Programme 1: Habitat Management			
Problems & Opportunities	**Actions**	**Priorities (H,M,L)**	**Partners**
Habitat degradation	1. Soil restoration 2. Woodland regeneration/ enclose fences 3. Re- seeding programs (grass, indigenous species) 4. Soil erosion control 5. Managing off road driving in conservancies 6. Pasture management/ livestock grazing plans 7. Establishing grazing committees and enforcement bodies for grazing plans on local level 8. Opening avenues for local communities to establish profitable livelihoods from their traditional lifestyle 9. Environmental education programs/ outreach	1. H 2. H 3. H 4. H 5. M 6. H 7. H 8. H 9. H	KWS, NGO, GR
Invasive Species	1. Physical removal of invasive plants	H	KWS, NGO, GR
Logging / Charcoal Burning	1. Ranger patrols 2. Education programs 3. Providing alternatives for cooking firewood e.g. biogas, solar	1. H 2. H 3. M	KWS, NGO, GR
Mining of resources	1. Control and monitoring of quarrying activities 2. Surveys for mining opportunities in the AE provided they are eco-friendly	1. M 2. M	KWS, BL, NEMA PAC and respective land owners
Unplanned human settlements / developments	1. law enforcement 2. Local leadership engagement	1. H 2. H	AET, NEMA
Fire outbreaks	1. Building fire breaks 2. Provision for fire fighting equipment	1. L 2. L	KWS, GR
Management Programme 2: Wildlife Management			
Problems & Opportunities	**Actions**	**Priorities (H,M,L)**	**Partners**
HWI	1. HWI protocols 2. Intensification of patrols 3. Identification of hotspots 4. Compensation/ Consolation programs for live-	1. H 2. H 3. H 4. H	KWS, NGO, Community Representatives

	stock loss from wildlife 5. Establishing a unified/ collaborative fund for consolation 6. Conflict mitigation and education 7. Intervention of lion hunts 8. Mobile ranger units (rapid response) 9. Fences in Agricultural areas to prevent crop loss as well as people illegally settling in wild-life areas 10. Environmental education programs to avoid human injuries or casualties 11. Agricultural areas need interventions for HWI	5. H 6. H 7. H 8. H 9. H 10. H 11. H	
Wildlife dispersal areas / migration corridors	1. Engagement with National Wildlife Corridors and Dispersal area Taskforce 2. Engagement with NEMA to control develop-ment 3. Education programs 4. Developing tourism income in the corridors to encourage alternative land-use 5. Establish conservancies/ long -term leases in connectivity area 6. Discourage land-use which damages wildlife movement 7. Providing support for communities (pastoral or agricultural) to promote coexistence (i.e. find-ing lost livestock, repair bad bomas, mock hunts, hydroponics) 8. Regular Wildlife Monitoring & aerial surveil-lance of corridors for early intervention 9. Regular reports to partners regarding status of corridors 10. Engaging with new communities to increase dispersal areas and tourism areas in the AE	1. H 2. H 3. H 4. H 5. H 6. H 7. H 8. H 9. H 10. H 11. M	Government sectors, NGO, GR, Community
Wildlife Population Dynamics	1. Regular surveys on population dynamics for shared database 2. Research on carrying capacity	1. H 2. M	ATE, LG, ACC, KWS, Baboon Research
Diseases	1. Undertake disease surveillance (research) 2. Disease transfer between livestock and wildlife requires intervention	1.M 2. M	KWS
Wildlife Security	1. Poaching for bushmeat / wildlife products 2. Wildlife Trafficking e.g. pangolin 3. Stopping retaliation killing 4. Livestock theft assistance 5. Wildlife poisoningintervention 6. Engage with bordering communities regarding poisoning of wildlife e.g. Kaputei, Matapatu (Osewan, Kunchu), Kilinyet	1. H 2. H 3. H 4. M 5. M 6. H	KWS, NGO, GR, Community Scouts
Management Programme 3: Water Resources			
Problems & Oppor-tunities	**Actions**	**Priorities (H,M,L)**	Partners
Relieving water	1. Creating rain water catchment dams in areas	1. H	GR, KWS, NGO

shortages	without permanents water sources 2. New boreholes / wells for communities & wildlife 3. Large scale rainwater harnessing projects 4. Maintenance of boreholes & wells	2. H 3. H 4. H	
Destruction of water catchments	1. Restoration of rivers	H	KWS, NGO, GR
Shallow wells that trap wildlife	1. Unused wells that trap wildlife need to be closed and communities provided an alternative i.e. Kitirua 2. Engage grazing committees on alternative water points for livestock	1. H 2. H	AET, KWT, GR
Northern Pipeline & maintenance	1. Regular service & repair	H	TANA ATHI, OGR, KWS
Nolturesh Pipeline usage issues	1. Adhere to specific GR management/ zonation plans for the pipeline	M	Kuku, Mbirikani, Selenkay GR
Agricultural chemical water pollution in farmed regions of the AE	1. Encourage organic farming	H	AET

B. TOURISM WORKING GROUP

i) Group Discussion Members

Name	**Organisation**
1. Daniel	PECS
2. Ken Naine	OGR
3. Joseph Kipaai	OGR
4. Lydia Biri	MWCT
5. Jonah Maai	Eselengei
6. Florence Mwikali	NEMA
7. Jeremy Goss	Big Life Foundation
8. Nelly Palmeris-	KWS
9. Johnson Sipitiek-	ACC
10. John Sitelo–	Rombo Chairman
11. Daniel Kaaka	AET

ii) Attractions

- Amboseli National Park
- Lake Amboseli
- Views of Kilimanjaro – from everywhere in ecosystem
- Wildlife in the group ranches
- Large elephant herds habituated to human presence
- Presence of large charismatic wildlife species, and high levels of biodiversity
- Authentic Maasai culture
- Scenery and geographical features (eg.Chyulu Hills)
- Accessibility – easy drive from Nairobi
- Hospitable climate and all-year accessibility

iii) Tourism infrastructure

Roads

- Roads inside the park are not good, and the existing road network for tourist access togroup ranches is both not sufficient and of poor quality.
- Lack of connectivity between tourism destinations, without having to go back to Nairobi e.g. Amboseli – Mara and Amboseli - Tsavo

Visitor facilities

- Need active visitor education center (Noonkotiak coming up)
- Signage (good in park, little on group ranches)
- Info panels (good in park, little on group ranches)
- Picnic areas (Observation Hill in the park, but no real options on group ranches)
- Entrance gates and payment systems non-existent on group ranches
- Perhaps an app for getting information on the area (?)

Infrastructure within group ranches is not good enough, and so we can't capitalize on tourists to Amboseli. Tourists access the ranches during the times of the year when wildlife has left thepark.

There's need to avoid white elephants such as 'Maasai Museum' at Lemong'o, and look at ways to utilize it.

iv) Community Benefits

Cultural tourism

Types of cultural tourism (existing and potential)

- Manyatta visits
- Beadwork (see enterprise) and curios
- Cultural dances in lodges
- Cultural food (not being done presently, but a potential opportunities)
- Cultural story-telling in lodges
- Local knowledge nature walks, sharing of indigenous knowledge – guiding / herding /stick-carving etc.
- Homestays

Community don't understand tourism, but they want to benefit – lack of awareness and skills to benefit from tourism.

- ***Manyatta Visits***

Challenges:

- Exploitation of cultural Manyatta visits. There is currently exploitation by the tour drivers. For example drivers pay only 500 per person for a village visit, but charge the guests a lot more. Ticketing systems a challenge because people lose oppor- tunity to take their cut.
- There is also a problem from within, each boma has a chairman who are trying to get the drivers to visit them and so it becomes a 'race to the bottom', with the drivers going where they take the highest commission.This is part of a governance issue, and if there was a strong consolidated local position then there would notbe an opportunity for exploitation.

- Cultural 'exploitation' and misrepresentation/stereotypes of Maasai culture, oftenby Maasai guides. Tourists need to be better educated. Need to protect Maasai dignity, provide correct information and adhere to standards.
- Lots of pollution (plastics) in the ecosystem, and also challenges with women's sanitation at bomas.
- Harassment at gates with people selling curios.

Solutions:

- Start with outreach meetings with cultural manyattas, to gauge their interest in AET help. Maybe create Cultural Tourism Association for the ecosystem, and let them come up with solutions. Organise meeting with chairman of all of these bo- mas.
- Perhaps take charges for manyatta visits at the lodges?
- Or market directly to driver companies, and take the decision away from the driv- er.
- There are lots of cultural manyattas inside and outside the ecosystem, and so we could potentially push the drivers elsewhere. Need to be careful about too much regulation.
- Enhance connection and relationship between the manyattas and the lodges.
- Need transparent way of selecting which manyattas to send guests to.
- Opportunity to use Noonkotiakas a tourist education centre.

- ***Beadwork & Curios***
  - Need a focus on product quality and preference on client tastes.
  - Need to learn the market and see where the competitive edge. Avoid product fa- tigue, it's all the same across Kenya.
  - Need innovative cultural tourism products in Amboseli. Product and packaging of Maasai culture.
  - Need for training on appropriate products/experiences, but first need to identify and decide on what are those products/experiences.
  - Perhaps develop list of AET- approved cultural manyattas, according to set stand- ard of experience, and then a map thereof. These can then be marketed collec- tively.
  - Develop an agreed code of behaviour and rules of engagement.
  - AET pricing guides (range) for curios for tourists and for sellers.
  - Is there a way to ensure that all goods sold in local lodges are from local produc- ers?
  - Plan for establishment of curio seller stations at each Amboseli gate.
  - Recommend task force within AET to work on all of these cultural tourism issues, and develop an in-depth plan.

- ***Homestays***
  - Big opportunity for homestays, to experience the Maasai way of life, particularlyin the experiential and budget traveler market.
  - This could be overnight, or just a few hours in the day-time. Herding live- stock/milking cows/beading.
  - Once again, this needs strict certification and upholding of standards. Can wepartner with a Kenyan wide accreditation company?

- Maybe tender out the opportunity to run this business across the ecosytem?
- Needs proper infrastructure.
- Biggest challenge is how to market this to tour companies.
- Maybe start with one pilot homestay boma?

v) Benefit Sharing

- Current status is that benefits are largely extracted from the ecosystem.
- There are benefits that are accumulated through KWS, and benefits accrued directly to group ranches (through leases and employment).
- Some concern about the level of benefit-sharing from KWS, and that speed of processing is slow. Currently 20 million shared by KWS. AET can engage at government level on bene- fit-sharing policies and guidelines.
- Can we set basic employment quotas for locals, and level of contribution back to commu- nities? Some sort of guidelines. Is this practical and workable, or outside the remit of this plan?

vi) Charges and/or Standardized Rates

- This is highly variable, and should be up to communities to negotiate with investors. But equally, AET could perhaps provide a service of being available to communities for helping to negotiate with potential investors.
- But need to make sure that there are sufficient accommodation options and variation in accommodation costs.

vii) Tourism planning

- Need to come up on a bed density rate, variable across the ecosystem. Limit on number ofbeds. What is carrying capacity of Amboseli?
- Need further consultation with each ranch/conservancy to do this. Each conservancyneeds management plan, including tourism plan.
- Investors need certainty.
- How do we reduce the impact of subdivision on tourism?

viii) Marketing

- Lack of diversification and Amboseli is known as a 'one-night' destination. Need to proper-ly understand WHY this is. Need to examine how marketing is currently done, and how do we infiltrate that marketing network. Needs a careful strategy.
- Lack of appropriate product packaging and marketing.
- ANP does marketing from HQ.
- No coordinated marketing effort.

- Need ecosystem-wide coordinated marketing plan specific to Amboseli, jointly between KWS and land-owners. Perhaps a website that includes all lodges and accommodation op- tions, activities, booking links etc
- Marketing should move away from simply animal-viewing to include more experiencesand activities, and packaging them to keep guests in the ecosystem for longer.
- Could have suggested itineraries.
- Emphasize complementarity between ANP and ranches around, for instance can't do nightdrives in ANP but could do it in a neighboring conservancy.
- Involve tour operators in all of this, work with them to market various options.

- Need to agree on packaging of marketing information – website, app?
- Modernise marketing – employ a marketing contractor?

ix) Product and Service Quality

- Want to try to ensure a steady flow of guests, and not boom and bust cycles through theyear.
- Not capturing full value from tourists because of short stays
- Don't want to overcapitalize with too many facilities that stand empty.
- How do we incentivize eco-friendly building options that have a low impact.Prioritise eco-lodges.
- Need to look at ways to stimulate local tourist visits.

- ***Accommodation options:***
  - Large-scale lodges inside Amboseli and in Kimana
  - Smaller higher-end lodges in community conservancies/ranches (egPorini tentedcamp, OlDonyo Lodge, Kampiya Kanzi, Tortilis, Satao Elerai)
  - Smaller low-cost accommodation options (mainly in and around Kimana)
  - Limited campsites, particularly around the park, some in neighbouring ranch-es/conservancies
  - No hostels

- ***Opportunities:***
  - More campsites
  - Lodges inside the park are constrained during high season
  - Too many mid-market lodges, opportunity for more high-end accommodation closeto ANP
  - Also need to look at options for more high-end tourist products on the ranches
  - Lack of places to eat in or nearby the park.

- ***Opportunities for activities:***
  - Nature walks/birdwatching – local guides
  - Balloon rides (needs regulation and limits)
  - Night game drives
  - Horse-riding
  - Hiking
  - Research tourism
  - Mountain biking/outdoor sporting events (way to target local tourists)

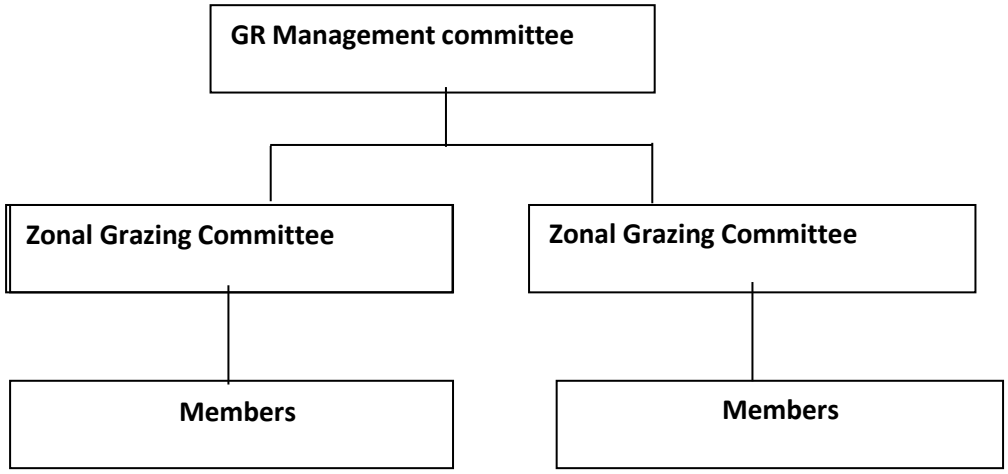
- ***Training needs:***
  - Guiding – where are guides trained, what information is passed on (nature interpre-tation)
  - Hospitality for service in manyattas
  - Training of women in beadwork and curio industry
  - Tourism hospitality training for high-demand positions (need to identify these)
  - Customer service in general
  - Governance and business planning (so that industries don't fail because of the prob-lems that come with money and success)

C. COMMUNITY LIVELIHOODS

1. Livestock Production

- **Goal:** *Winning space for livestock*
- **Thematic areas:** Grass, livestock husbandry, market

- **Organizational Structure of the Livestock Grazing System**



i) Roles and Responsibilities of the Committees

Committee	Responsibilities	Membership
GR Management Committee	-Oversee all zonal grazing committees -Setting dates for livestock movement -Solve conflicts arising from grazing zones -Overseeing grazing zone by laws are implemented -Disseminating information on livestock husbandry issues e.g. vaccination i.e. link between government agencies and livestock NGOs -Following up on zonal grazing committee requests -Approving grazing by laws	-Officials Grazing zonal committee members
Zonal Grazing Committee	-Implementation of grazing by laws -Marking grazing zones -Planning and controlling human settlement -Controlling migrating herders from other group ranches -disseminating relevant information to members form government agencies or development partners -Control hay prices	11 elected members; officials-chairman, secretary, treasurer; area chief
Members	-Members of the zone -Adhering to the grazing by laws -Sensitizing other members on the grazing by laws. -Participating in developing grazing by laws	Members of the zonal grazing area

ii) Livestock Grazing Action Plan

Problems & opportunities	Action	Priority (H,M,L)	Partners
Livestock Grazing zones			

Problems & opportunities	Action	Priority (H,M,L)	Partners
Lack or weak grazing bylaws	1. Develop strong effective grazing bylaws adopted by all Amboseli ecosystem members 2. develop and implement Grazing plans i.e. wet season and dry season; clear dates for movement of livestock; e.g. Olgulului, August 10th first movement 3. Establish and prioritize and empower grazing committees 4. Establish slaughter house 5. Value addition to livestock products 6. Improve livestock breeds to improve productivity 7. Train local para-vets to control livestock diseases	**H**	-Community members, -Ministry of Livestock & -Agriculture NGOs County Government -private sector
Unplanned settlement due to weak settlement controls	1. Set aside (zone) human settlement areas 2. develop and implement rules and regulations to control human settlement	**H**	-Community members, -Local administration Ministries of Health, land &housing, KWS NGOs
Degraded areas due to erosion	1. Control soil erosion through construction of gabions, furrows, water buns, stone lining 2. Rehabilitate degraded areas through reseeding 3. Establish enclosures to re-establish natural vegetation 4. Establish olopololi (grass banks) in every livestock zone for calves	**H**	Community members NGOs Ministry of Environment and Natural Resources NEMA
Poor water supply system	5. Establish water points in settlement areas to prevent degradation of grazing areas	**H**	Ministry of Water WRA WRUA NEMA County Government CDF NGOs
Lack of drought coping mechanisms	6. Produce hay from natural grass as well as plant exotic grass for hay production	**M**	Ministry of Agricultutre and Livestock NGOs Community Members
	Livestock husbandry		
Lack of quality breeds that are	7. Procure sahiwal bulls for cross breeding with local breeds	**H**	Minisitry and Agriculture

Problems & opportunities	Action	Priority (H,M,L)	Partners
disease and drought resistant and have high market value	8. Establish a breeding farm in every group ranch		and Livestock NGOs Community Members
Livestock pests and diseases	9. Establish cattle crushes, cattle dips, in every zone 10. Train and deploy paravets to work at the ecosystem level	**M**	Minisitry and Agriculture and Livestock NGOs Community Members
Human-wildlife conflict-livestock predation	11. Compensate for livestock losses	**H**	KWS NGOs
	Market		
Lack of value addition to livestock products	12. Establish a milk cooling plant in each Group ranch	**H**	Minisitry and Agriculture and Livestock NGOs Community Members
	13. Upgrade and equip the Mbirikani slaughter house to serve the entire ecosystem	**H**	Minisitry and Agriculture and Livestock NGOs Community Members
	14. Establish a milk processing plant to produce diverse milk products e.g. yoghurt, cheese, ghee, pasteurized milk, sour milk	**H**	Minisitry and Agriculture and Livestock NGOs Community Members
	15. Establish a tannery at Mbirikani	**M**	Minisitry and Agriculture and Livestock NGOs Community Members County Government
	16. Promote and advertise livestock products using electronic and print media and road show	**M**	Community members NGOs County Government
	17. Engage distributors of livestock products	**M**	Community members NGOs County Gov-

Problems & opportunities	Action	Priority (H,M,L)	Partners
			ernment
	18. Partner with other established livestock product companies to market the ecosystem's livestock products including bones	**M**	Community members NGOs County Government
	19. Establish livestock cooperative society	**H**	Community members NGOs County Government

2. Agricultural production

- **Goal:** Promoting sustainable agriculture
- **Thematic areas:** irrigated and rainfed agriculture
- **Location:** Agricultural zones

i) Major Issues

- Human wildlife conflict in Rain fed agricultural areas
- Water resource use conflict -livestock herders vs farmers in Kuku
- Role of WRUAs- Irrigation committees control water use

ii) Agricultural Production Action Plan

Problems & opportunities	Action	Priority (H,M,L)	Partners
Most perishable agricultural productsgo to waste e.g. tomatoes	Establish a horticultural products cold room	**H**	Ministry of Agriculture and Livestock Community members NGOs County Government
	Establish horticultural canning factory	**H**	Ministry of Agriculture and Livestock Community members NGOs County Government
Water resource use conflicts	Strengthen the WRUAs so that they can control water use effectively	**H**	Ministry of Agriculture and Livestock Ministry of Water Community members NGOs County Government
Lack of extension officers	Work with county government in training agricultural extension officers for effective extension services	**H**	Ministry of Agriculture and Livestock Community members NGOs County Government
Increase value for agricultural products	Promote organic farming	**M**	Ministry of Agriculture and Livestock Community members NGOs County Government
Grains with high moisture content prone to aflatoxin	Establish a grain drier at entarara and Entonet	**M**	Ministry of Agriculture and Livestock Community members NGOs County Government
Lack of value addition to maize products	Establish a maize milling factory at Kimana	**H**	Ministry of Agriculture and Livestock Community members NGOs County Government
Lack of standard packaging of products	Standardize the selling packaging for different products	**H**	Ministry of Agriculture and Livestock Community members NGOs County Government
Lack of coordination of production and marketing of agricultual products	Establish agricultural farmers association	**H**	Ministry of Agriculture and Livestock Community members NGOs County Government
Crop raiding	Install and maintain wildlife fences	**H**	KWS NGOs Community Members

3. Other Socio-economic Activities

- **Goal:** *To improve the living standards of the local community*
- ***Thematic areas****: Enterprises, natural resource use, settlement*
- **Location:** *different zones*

Other Socio Economic Activities Action Plan

Problems & opportunities	**Action**	**Priority (H,M,L)**	**Partners**
Unplanned settlement	Establish community service centers	**H**	Community members County government NGOs
Lack of alternative enterprises	Establish amboseli water bottling plant-enkogo narok water; shokut in Kuku;	**H**	Community members County government NGOs
	Promote bee keeping	**H**	Community members County government NGOs
	Establish a stone crusher Namelok, Enkongo Narok, Narok-enterit in Kuku GR	**H**	Community members County government NGOs
	Establish additional conservancies	**H**	Community members KWS County government NGOs
	Enhance mining, sand harvesting, ballast	**H**	Community members County government NGOs NEMA Ministry of Mining
	Lease land to investors	**H**	Community members County government NGOs

3. NATURAL RESOURCES DOCUMENTATION

A. NATURAL RESOURCES IN ROMBO

WATER RESOURCES	
RIVER	***LOCATION***
1. a) Rombo River	Rombo spring flowing through town to Tsavo national park
b)Agricultural area	It is along the Rombo river on both sides i.e. i. Kizioki canal ii. Oloishiro canal iii. Oltepesi canal iv. Kizipia canal v. Olchorro canal vi. Matepez canal vii. Esosian canal viii. Canann canal
c) Swamps	Eboliei swamps located two from Rombo towards Matepez center near Eboliei canal
d) Springs	Olchorro spring near Olchorro canal flow its water to Rombo River. Enyarru springs situated at Olgirra 2km from Oloirien secondary school
e) Water pan	Located at various agricultural Ranching area
f) Borehole	Bomas borehole near Bomas Primary School. Maarwe borehole located near Market
2. Wild Life Resources	Emambuli Conservancies with types of animal include: lion, wild beast, elephant wild dog hyena.
3. Salt licks	At Eboliei swamp Ilooitong near Olomnaru camp
4. Wildlife migratory corridor	Along corridor starting from Tsavo national park to Emambuli conservancy to kuku group ranch getting to Amboseli to Serengeti in Tanzania
5.Grazing area	Ormapitet grazing area border in KiitokiNdoomaniOlgirra and Tsavo national park
6. Forested Area a) Natural forest	We have a natural forest near Rombo town between Rombo mix Primary School and Rombo girl primary school.
b)Planted forest	This is personal planted by one of the farmer NkamerolMeliyo on his farm at Mungushi near Deral
7.Archeological and cultural sites	Eboliei- located between saint Clare and Matepez center. This used to be a cultural for the Masai boys before circumcision went there have a white soil apply their face and legs for identification before undergo initiation.
8.Building materials	Within the group ranch we have grass, stones, sand, post land, and twigs all rom the group's ranch.
TOURISM ATTRACTION	

a) view point	We have several hill situated within the group ranch i.e. Len-kopito hill border Emambuli conservancy. Kortuni hill along the high way Loitokitok.
b)Gorges and valleys	Tangwa valley flow from Tanzania passing Oloyiaparsei area Rombo River.
2 Cultural sites and cultural manyatta	We have two manyatta one at Lemongo and Moran manyatta near Orgirra.
9 Tended camp	We have one tended camp known as Olowaru camp situated 3km away from Olgirra center for the community
Tourism Attraction	Mount Kilimanjaro view Gama viewing Bird watching Photography
Ecology	No any
Secondary school	Oloirien secondary school Rombo hiri St. Clare
Water pipelines	Ormapinu/Aderkesi pipeline; Mailitatu, Olgirra pipeline Rombo, bomas, naiipa pipeline.
4)Churches and mosques	We have many churches but the main one are: Catholic, FPFK, Baptist and KAG.
Mosques	One at Rombo town
5) urban centers	We have five urban center i.e. Rombo, Matepez, Maili-tatu, Olgirra and Elevai
Market	Rombo market Maarwe market Elevai market
6) Livestock infrastructure	
Abatloirs	One slaughter at Rombo town.
Dipi	Nil
INFRASTRUCTURAL RESOURCES	
Road network	No developed road network into conservancy apart from Loi-tokitok to Taveta tarmac road.
Airstrip	There is one un-developed airstrip by bid life investors.
School and colleges, pipeline	We have primary and secondary school i.e.: primary ➢ -Olgirra ➢ -Oloborr-Soit Primary ➢ -Elerei Primary ➢ -Orgumaet primary ➢ -Ormapinu ➢ -Matepez ➢ -Oloyiaparsei ➢ -Rombo mix ➢ -Rombo girls ➢ -Enchurrai ➢ Munyurra

	➢ -BeihroofLemongo ➢ Bomas ➢ -Nasipa ➢ - Maili-tatu.
7) Quarantines	nil
8)Health infrastructure a)Hospital b)Dispensary c)Clinic	Nil • -Rombo mission • -Olgirien clinic • -Emumwenyi clinic • -Oloiborsoit clinic • -Nolosit clinic
9)Security infrastructure a) police station b)police camp c)Game- scout/camp d) KWS station	➢ Nil ➢ One at Rombo town ➢ Elevai ➢ Maili-tatu ➢ One at Iloitong ➢ One at Iloitong ➢ One at kombo head by community herder.
10) Research center	- Olownaru camp (lion research)
11) fences- wildlife barrier	nil

1. What form of land use are found Amboseli:

i. Tourism

ii. Livestock grazing
iii. Cultivation
iv. Wildlife conservation
v. Product harvesting: e.g. post, sand, stones grass and twigs

2. What form of land use might we have in the future?

i. Tourism
ii. Wildlife
iii. Large-scale irrigation
iv. Zero grazing
v. Potential of starting light industry because of large scale farming leading of agro-business.

SUMMARY OF LAND USE MATRIX: ROMBO									
	Tourism	Settlement	L.Grazing	Cultivation	Wildlife	P.Harvesting	L.Scale	Z.Grazing	Light industry
1. Tourism	NC	CM	Assist other	CM	NC	CM	CDM	CM	CDM
2. Settlement	CM	NC	NC	NC	CM	NC	NC	NC	NC
3. L.Grazing	LUA	NC	NC	NC	CM	NC	CM	NC	NC
4. Cultivation	CM	NC	NC	NC	CM	NC	NC	NC	NC
5. Wildlife	NC	CM	CM	CM	NC	NC	CM	NC	NC
6. P.Harvesting	CM	NC	NC	NC	CM	NC	NC	NC	NC
7. L.Scale	CDM	NC	CM	NC	CM	NC	NC	NC	NC
8. Z.Grazing	CM	NC	NC	NC	NC	NC	NC	NC	NC
9. L.Industry	CDM	NC	NC	NC	NC	NC	NC	NC	NC

1. No conflict (NC)
2. Conflict can be manage (CM)
3. Conflict difficult to manage (CDM)
4. Land use assist each other

B. NATURAL RESOURCES IN KIMANA LOCATION

SPRINGS	NAME
	I. Namelok
	II. EnchoroNkai
	III. Lemongo
	IV. Oltiani
	V. Isinet
	VI. Oloite
	VII. Kimana
	VIII. Enkumi
LODGES	NAME
	I. AA
	II. Sopa
	III. Mada
	IV. Kibo

	V. Elephant Gorge
	VI. Tawi
	VII. Zebra
	VIII. Setao
CONSERVANCIES	NAME
	I. Kilitome
	II. Olepolos
	III. Olarano
	IV. Nailepo
	V. Osupuko
	VI. Oltiani
	VII. Kimana (community)
FORESTS/HABITATS	NAME
	I. Unique riverline
	II. Woodland along Kimana river
	III. Grasslands, woodland
	IV. Bushland in conservancies
SALT LICKS	NAME
	I. Olkelunyet
	II. Kinluna sanctuary

MISSING SITES

i. Cultural sites
ii. Waterfalls
iii. Hiking trails (Potential in conservation)
iv. Canopy walks

GRAZING AREA

I. Areas allocated as grazing lands are absent except in conservancies

BULIDING MATERIALS	
HARDCORE STONES	Ohiani
	Naelepo
SAND	Laimuronya (ground)
	Lemongo (River)

TOURISM

Viewpoints:

1. Oltiani hills
2. Conservancies
3. Oldonyo

Anorua

ROADS	Limited (a few)
INFRASTRU CTURE	PK –Kimana PK-Namelok Kimana-Namelok

AIRSTRIPS	Kilitome(grass)
LIVESTOCK MARKETS AND ASSOCIATED	Kimana market
	Lemongo cattle dip
	Two slaughter houses
CHURCHES	Multitude (Christian)
	Two Mosques (Muslim)
SCHOOLS	Primary-10
	Secondary-4
	Colleges-2
	Research centers-1
TOWNS/MARKETS	Kimana
	Isinet
	Namelok
	Impironi
AGRICUTURE SPOTS	Namelok
	Isanet
	Kimana
	Impironi(Rainfed)
	Enchoro-Nkai
	Oloile/Noomanayiat
	NgariaRongena(Rainfed)
SECURITY	Local rangers-6 outposts in each conservancies
	KWS(Kimanagate)
FENCE BARRIERS	Kimana sanctuary
	Namelok
	NgariaOngena(near Sopa)

LIST OF LAND USERS

LAND USE CLASS	NAME
AGRICULTURE	Horticulture(onions, tomatoes, kales)
	Fruits(Avocado, pawpaw, bananas, oranges)
CONSERVATION	Conservancies
	Migration corridors
	Wetlands/springs/rivers/swaps
PASTROALISM/LIVESTOCK KEEPING	Grazing lands
	Cattle dips
	Markets for livestock
	Slaughtering houses
	Livestock production industries e.g. stock im-provemet
TOURISM	Public campsite
	Lodges(old and expected new)

	Diversified activities/attractions • Horse back • Balloons • Nature trails
	Good infrastructure (especially roads)
TOWNS/MARKETS/SETTLEMENTS	Kimana
	Isanet
	Namelok
	Growth in settlement

SUMMARY OF SETTLEMENT

AVOID	Agriculture	Conservation
	Tourism	Agriculture/settlement
	Conservation	Agriculture
	Settlement	Conservation/tourism
MANAGE	Pastoralism	Conservation
	Tourism	Pastoralism
	Conservation	Infrastructure development
PROMOTE	Conservation	Tourism
	Livestock improvement	Conservation
	Agriculture-settlements	Towns/markets
	Pastoralism	Settlement
	Conservation	

C. NATURAL RESOURCES IN IMBIRIKANI GROUP RANCH

1. WATER RESOURCE

- Inkoroshoni spring
- Isinet Springs
- Inchalai Springs
- Noolturesh Water Pipeline
- Water pans (Embaruetin-1, Kalesirua-3, Enkaji Naibor-1, Olmapitet-1, Ichalai-2, Olbili-2,Oltiasika-2, Olgosua-4, Imbirikani-6, Inkoisuk-4, Noosilale-3, Olagarama-3, Emukutan-3,Oldonyo Wuas-7)
- Isinet Swamp
- Inchalai Swamp
- Namelok Swamp
- Empakaai Swamp
- Embaruatin Borehole
- Nabulaa Borehole
- Isinet Borehole
- Kalesirua Borehole
- Ichalai Borehole
- Emukutan Borehole
- Olbili Borehole
- Oltiasika Borehole

- Simba cement Borehole

2. WILDLIFE RESOURCES

- Oldonyo Wuas
- Lemasusu-Oltiasika
- Emukutan-Oldonyo Sampu Area
- Loosikitok Area
- Marura Area (Hipo area, Birds Breeding area, Roosting area)
- Lenkiloriti

3. SALT LICKS AREAS

- Intinyika
- Enkeju oo losho

4. WILDLIFE MIGRATORY COORIDORS

- Inkoisuk-Emukutan-Lenkiloriti-Chyulu
- Loosikitok-Olangarrama-Noosilale-Chyulu
- Empakaai-Olgosua-Ilchalai-Chyulu
- Imbirikani-Ilchalai-Kuku
- Imbirikani-Oltiasika-Kuku
- Kimana sanctuary-Marura-Ilchalai
- Motikanju-Imbirikani

5. GRAZING AREAS

- Oldonyo wuas (Kotisha, Ilmao, Olosira)
- Loosikitok
- Emukutan
- Lemasusu/Oltiasika

6. FOREST

- Lava forest
- Cider forest
- Lemasusu

7. ARCHEOLOGICAL SITES

- Noonkiyia area

8. BUILDING MATERIALS

- Sand harvesting- Intinyika-Ilchalai seasonal river
- Sand harvesting-Imbirikani area-along the tarmac road
- Inkoroshoni-Isinet-building stones
- Limestone-Emukutan/olagarama

9. AGRICULTURAL AREAS

- Inkoroshoni
- Isinet
- Ilchalai
- Enkaji Naibor
- Lemasusu

- Along water pipeline

INFRASTRUCTURAL RESOURCES

1. **Road Network**
   - Emali-Loitokitok
   - Isinet-Namelok
   - Esambu-Ilchalai
   - Olngosua-Imbirikani
   - Siamalil-Amboseli
   - Imbirikani-Oldonyo wuas
   - Imbirikani-Olbili
   - Olbili-Oltiasika-Center
   - Emukutan-Oldonyo sambu-Oldonyo wuas

2. **AIR STRIPS**
   - Imbirikani
   - Oldonyo wuas

3. **SCHOOLS**
   - Primary Schools-16
   - Secondary Schools-5

4. **CHURCHES AND MOSQUES**
   - Churches and Mosques-35

5. **URBAN CENTERS**
   - Simba cement
   - Inkoisuk
   - Imbirikani
   - Enkaji Naibor
   - Ilchalai
   - Oltiasika
   - Isinet

TOURISM ATTRACTIONS

1. **VIEW POINTS**
   - Losikitok
   - El-Mau
   - Olosira
   - Ol-Donyio Wuas
   - Chyulu Area

2. **CULTURAL SITES**
   - Osiram Womens Cultural Manyatta
   - Moran Cultural Manyatta

3. **CAVES**
   - Lava Caves In Chyulu

- Losikitok Hill Caves

4. The area is of high potential for hiking trails and nature walks

5. LODGES

- Oldonyio Wuas Lodge

6. SPECIAL CAMPSITES

- Crater Campsite(Close to Kona Tatu)
- Pelican Campsite(Between El-Mau and Lenkiloriti

LANDUSE IN IMBIRIKANI GROUP

- Livestock farming (free range)
- Settlement (urban centres, rural homes)
- Crop farming
  Rain fed
  Irrigated
- Mining
- Tourism
- Transportation (mainly road network)
- Public utilities

FUTURE LANDUSE

- Establishment of wildlife conservation areas
- Industrial –mining industry (subject to discussion)

	Live-stock Farming	Settle-ment	Crop farm-ing	Min-ing	Tour-ism	Transporta-tion	Public Utili-ties	Wildlife Conserva-tion
Livestock Farming	NC	LCC	CCM	CCM	LCC	LCC	NC	CCM
Settlement	LCC	NC	LCC	CCM	CCM	NC	NC	CDM
Crop farming	CCM	CCM	NC	CDM	CCM	NC	CCM	CDM
Mining	CDM	CDM	CDM	NC	CDM	NC	CCM	CDM
Tourism	CCM	CDM	CDM	CDM	NC	NC	CDM	NC
Transporta-tion	NC	NC	NC	NC	NC	NC	NC	NC
Public Utili-ties	CCM	NC	CCM	LCC	CDM	NC	NC	CDM
Wildlife Con-servation	CCM	CDM	CDM	CDM	NC	NC	CCM	NC

NB: NC-No conflict
CCM-Conflict can be managed
CDM-Conflict difficult to manage
LCC-Landuse can coexist

D. NATURAL RESOURCES IN THE ESELENKEI GROUP RANCH

We grouped Eselenkei Group ranch into four zone

1. Iloirero
2. Iltuleta
3. Lenkism
4. Kiserian

Zone	***Categories-Natural resource***							
Iloirero	Water	Wildlife resources	Salt licks	Wildlife migratory corridors	Grazing areas	Forest	Archeological site	Building materials
	Enkii borehole							
	Kabukoki borehole							
	Noirr water pump							
	Oltotoi borehole							
	Selenkay safari camp borehole							
	Nolturesh pipeline water along the new Kajiado-Isaarag road							
	One Seasonal river							
	Dams- Mutenger, Nosirami,Logogolala,Kabukoki							

AE Zoning- current usage of land Eselenkei Group ranch

1. Livestock grazing
2. Agriculture
3. Tourism
4. Settlements
5. Conservancies
6. Trading centers
7. Social infrastructures

Land use-current –future

AE Zoning current	Livestock	Agriculture	Tourism	Conservancies	Trading centers	Social Infrastructure	Wildlife corridors	Land subdivision
Livestock grazing	1	2	2	2	1	1	2	3
Agriculture	2	1	3	3	2	1	3	2
Tourism	2	3	1	4	2	4	4	3
Conservancies	4	3	4	1	1	4	4	3
Trading centers	1	2	2	3	1	1	2	4

Social infrastructure	1	4	4	4	1	1	2	4
Wildlife corridors	1	2	4	4	2	2	1	4
Land subdivision	1	3	4	3	2	4	3	3

Code

1- No conflicts

2- Conflicts manageable3- Difficult to manage

4- The two land uses can help each other

E. NATURAL RESOURCES IN OOGR

1. NATURAL RESOURCES

i) Water Resources

Watering points- river systems, dams, swamps, springs, water pans, waterholes

Springs (4)	**Seasonal Rivers (9)**		**Shallow Wells (5)**	**Seasonal Lakes (1)**
Orkishungi spring (at Isinya mines)	Lekilesi	Orkejuloom ugurri	Laimutiak	Lake Amboseli
Lendikirr springs	Lekiteng	Eyata river	Ngararambuni	
Lemuny springs	Olala-rashi	Kitirua	Sinya mines	
Namelok Springs	Olgulului	Matasia	Kasiaka	
	Kitende n		Nebitirr	
Boreholes (30 Boreholes)				
Naipera	Misigiyo	Lemomo	Eluai	Loositima
Oldule	Mutrot	Embaringoi	Loolakirr	Lengism – Kijito
Olmoti	Entonet	Olgulului	Oltinga le Ngusero	Lengism
Oldepen	Elrai	Loomayianat	Oloilalei	Olepolos – Len-kism
Ilmarba	Olchorro	Emaambuli	Osewan	Olepolos - Murtot
Nchakita	Risa (2)	Noonkotiak	Osoit	
Piped water	**Wet-lands**			
Northern Pipe-line with source from Serena	Namelok			
	Sinya Mines			
Water pans (14)				
Sayialel	Ole Mwangi	Meshanani	Nchakita	Osoit
Oltemwae	Ole Seita	Loolakirr	Namelok - Osoit	Lenkism
Oltinga	Oldule	Risa x 2	Nkiito	

ii) Wildlife Resources

a) Wildlife concentration areas, hippo pools, roosting sites, breeding sites, burrows, dens,nesting sites, Beekeeping sites, fish ponds, game farms(11 rich wildlife areas with spe-cial animal and plant species)

- NadoSoitok elephant breeding site
- Naripi (Elephant Maternity)
- Osewan
- Matasia
- Lendikirr
- Engaboli
- Nairabala
- Ilaingarunyoni

- Narolokuny
- Kitenden
- Kitirua

b) Salt licks (6)

- Sinya mines
- L. Amboseli
- Engong Narok
- Kitirua
- Ilaimutiak
- Meshanani

c) Wildlife migratory corridors (4)

- Kitenden
- Ilaingarunyoni
- Ole Narika - Nairabala
- Kitirua

d) Livestock grazing areas (12)

- Olglului area
- Kitenden - Oldule
- Olmoti- Ilmarba – Murtot - Olepolos
- Meshanani
- Loolakirr – Oloilalei-Osewan
- Risa
- Nchakita
- Lenkism
- Nkiito – Risa
- NamelokOsoit
- MuruaOloiborr
- Engong Narok

iii) Forest areas

- Different forest/vegetation types/habitats, invasive species, unique plants
- Kitenden Woodlands
- Osewan
- Ole Narika
- Illaingarunyoni
- Mangula

iv) Archeological sites

- Different sites

v) Building materials

- Sand harvesting
  - Olugululi river
  - Kitenden river
  - Nkiito
  - Risa
  - Meshanani
- Hard core collection (Stones)
  - Engong Narok
  - Osoit
  - Embarinkoi
  - Risa

- Kitenden river
- Nkiito (quarry stones
- Risa
- Meshanani (quarry stones)

vi) Mining areas

- Sinya Mines (abandoned)

vii) Agricultural areas- irrigation and rain fed areas

- Olchorro
- Murtot-Lemai
- Entonet
- Misigiyo
- Namelok

2. Tourism attractions

i) Viewpoints, gorges & valleys

- Lendikirr – Lekilesi caves
- Siruai hill
- Lekiteng area
- Lemomo hill
- Osewan camps
- NadoSoitok
- Nairabala – Kitrirua
- Nairabala - Nchakita
- Ilmerishari
- Enkoinkumashi- Ildepen
- Kitirua hill
- Meshanani A&B
- Ilaingarunyoni

ii) Cultural Attractions

- Preserved and develop better cultural bomas
  - Tented camps
    - Tortilis
    - NadoSoitok 1 & 2
    - Kitirua
    - Narripi
  - Public campsites
    - Elkangere – Oltiani

3. Infrastructural Resources

i) Road network

- Namanga - Olgulului – Kitirua–Embarinkoi-Engong Narok-MuruaOldule-Ilmarba
- Namanga-Meshanai-Nkiito -Risa-Namelok
- Olglului – MuruaOloibor-Meshani
- Meshani–Nkiito-Risa-Namelok
- Meshanani-Lolaakirr – Osewan-Lenkism - Nkiito
- Meshani – Lenkism
- Lenkism – Risa-Namelok
- Kimana gate-Ilkilunyiet-Olmoti-Ilmarba-Misigiyo-Murtot-Entonet-Olchorro

ii) Airstrips

- Namanga Airstrip

- Lemomo
- Sinya mines
- Tortilis
- Nookotiak

iii) Schools & Colleges

- Olgulului Primary
- EluaiPri
- Meshanani
- Loolakirr
- OloilaleiPri
- NaorenkarePri
- Risa Pri.
- Osoit – NamelokPri
- Amboseli Pri
- OlmotiPri
- Engong Narok Pri
- EsitetiPri
- ImmisigiyoPri
- ImurtotPri
- EntonetPri
- Olchorro
- ParanaiPri.
- Oclchorro Sec.
- Entonet Sec.
- Amboseli Sec.
- Namelok Sec.

iv) Churches & mosques

- In all Community Service Centers

v) Community Service Centers - towns, markets places

- Olglului
- Meshanani
- Loolakirr
- Lenkism
- Risa
- Namelok
- Olkilunyiet
- Ilmarba
- Engong Narok
- Embarinkoi
- EsoitoPusi

vi) Livestock infrastructure - abattoirs, cattle dips, quarantine areas, livestock market centres

- In all Community Service Centers

vii) Health infrastructure -hospitals, dispensaries, clinics

- Meshanani
- Olgulului
- Loolakirr
- Amboseli / Ollkiluntyiet
- Murtot
- Engong Narok

- Olchorro
- Lenkism

viii) Security infrastructure – Police stations & camps, scout camps, KWS stations and camps

- Mangula
- Osewan
- Risa
- Ilmarba
- Lemomo
- Kitirua
- Lenkism police post/Admin Dos

ix) Research & information resource centers- camps

- Noonkotiak
- Nairrbala – Lion Guradians
- Public Camp site - Amboseli Baboon Research
- Risa - Born Free Foundation
- Amboseli Trust for Elephants
- Amboseli Conservation Program

x) Fences- wildlife barriers

- Namelok
- Murtot – Emisigiyo

xi) Habitat Restoration fences

- Kitirua
- NadoSoitok
- Noonkotiak
- Oloopoli
- Nkiito

4. AE Zoning

Activity 1: What forms of land use are found in the AE? Current land uses.

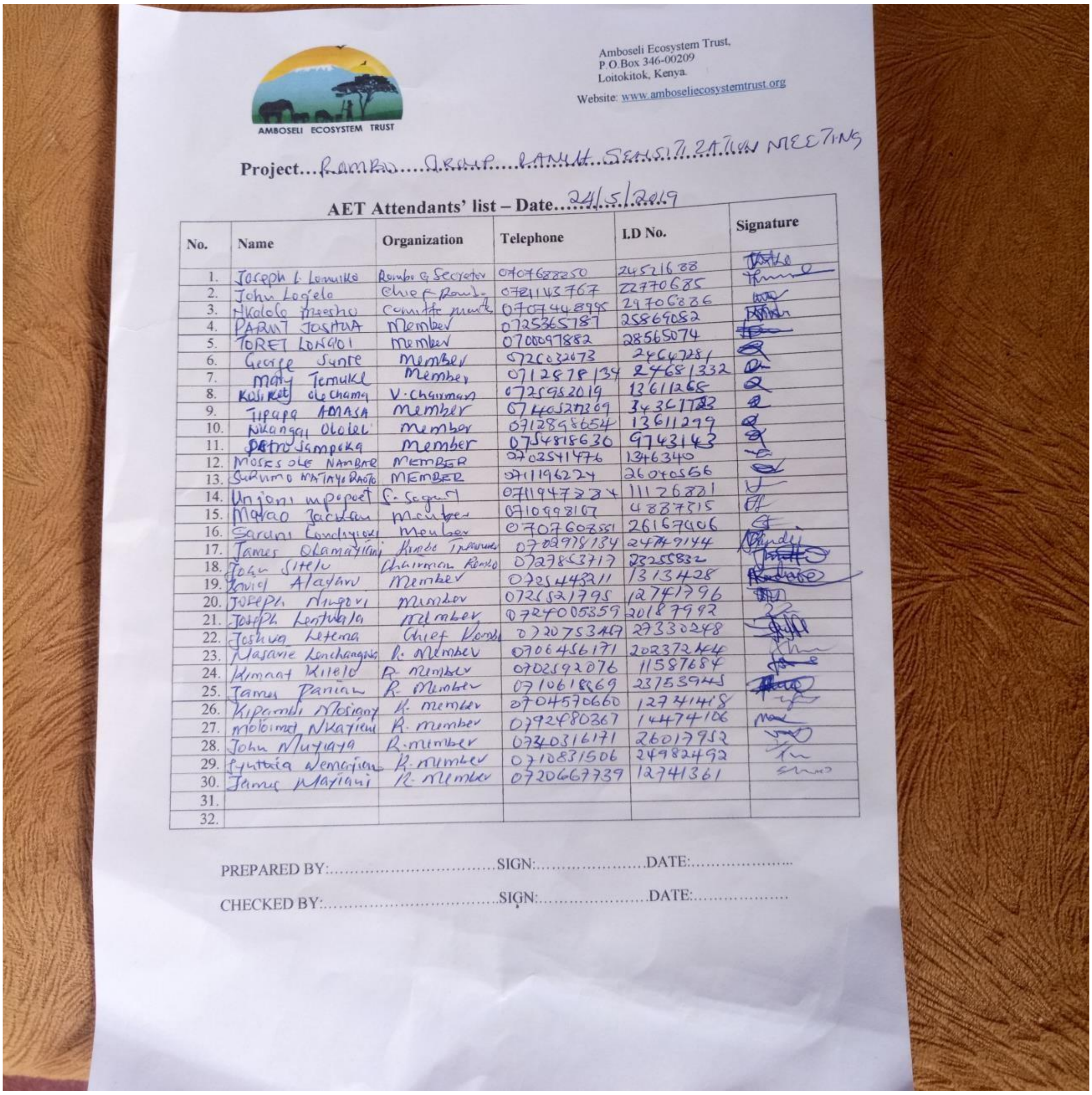
- Human Settlement
- Grazing
- Wildlife
- Farming / Agriculture
- Mining
- Tourism
- Infrastructure
- Dams and boreholes

Activity 2: What forms of land use might we have in the AE in the future?Future land use.

- Human Settlement
- Grazing committee managed pastoralism for the 12 grazing zones
- Silvopastoralism for the upper zone
- Wildlife Conservation
- Farming / Agriculture
- Mining
- Tourism
- Infrastructure – Roads,
- Dams and boreholes (Rain water harvesting)
- Recreational / Sports

- State of art centres of excellence (Institutions of higher learning)
- Factories for local products (Meat, Dairy, Leather,
- Factories for local agricultural products
- Mining (Salt licks, precious stones, limestone, etc)
- Promote genuine cultural practices and museum / traditional artefacts e,g. Educative and develop education tools for children to learn and practice true Maasai culture and way oflife.

APPENDIX 5a- Stakeholders Consulted, signed Consent forms and NEMA Certificates.



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AMBOSELI ECOSYSTEM TRUST

Project…Rombo Group Ranch Sensitization Meeting

AET Attendants' list – Date…24/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Joseph L Lomuike	Rombo G Secretary	0707688250	24521688	
2.	John Logelo	Chief Rombo	0721143767	22770685	
3.	Nkolele Meesho	Comittee member	0707448995	29706886	
4.	PARMT JOSHUA	Member	0725365787	25869052	
5.	TORET LONGOI	member	0700097882	28565074	
6.	George Sunte	member	0720032073	24647281	
7.	Mary Temuke	Member	0712878134	24681332	
8.	Kolikot ole chama	V.chairman	0725952019	13611268	
9.	Tipapa AMASA	member	0740527369	34361783	
10.	Nkangai Ololel	member	0712898654	13611299	
11.	Petro Sampeka	member	0754818630	9743143	
12.	MOSES OLE NAMBAE	MEMBER	0702541476	1346340	
13.	SURUMO MATAYO RAOTO	MEMBER	0711196224	26040566	
14.	Unjoni mpopoet	S. Sergeant	0711947884	11126881	
15.	Marao Jackson	member	0710998107	4887815	
16.	Saruni Londiyioki	Member	0707608551	26167906	
17.	James Olamayiani	Rombo Treasurer	0702978134	24749144	
18.	John Sitelu	Chairman Rombo	0727853717	23255832	
19.	David Alayiari	Member	0725443211	1313428	
20.	Joseph Ningori	Member	0726521795	12741796	
21.	Joseph Lentulala	member	0724005359	20187992	
22.	Joshua Letema	Chief Rombo	0720753467	27330248	
23.	Masarie Lenchanganai	R. Member	0706456171	20237244	
24.	Kimaat Kilelo	R. member	0702592076	11587684	
25.	James Panian	R. Member	0710618569	23753945	
26.	Kipambi Mosiany	R. member	0704570660	12741418	
27.	Moloimet Nkayiani	R. member	0792480367	14474106	
28.	John Muyiaya	R.member	0740316171	26017952	
29.	Syuttaia Wemaiyian	R.member	0710831506	24982492	
30.	James Mayiani	R. Member	0720667739	12741361	
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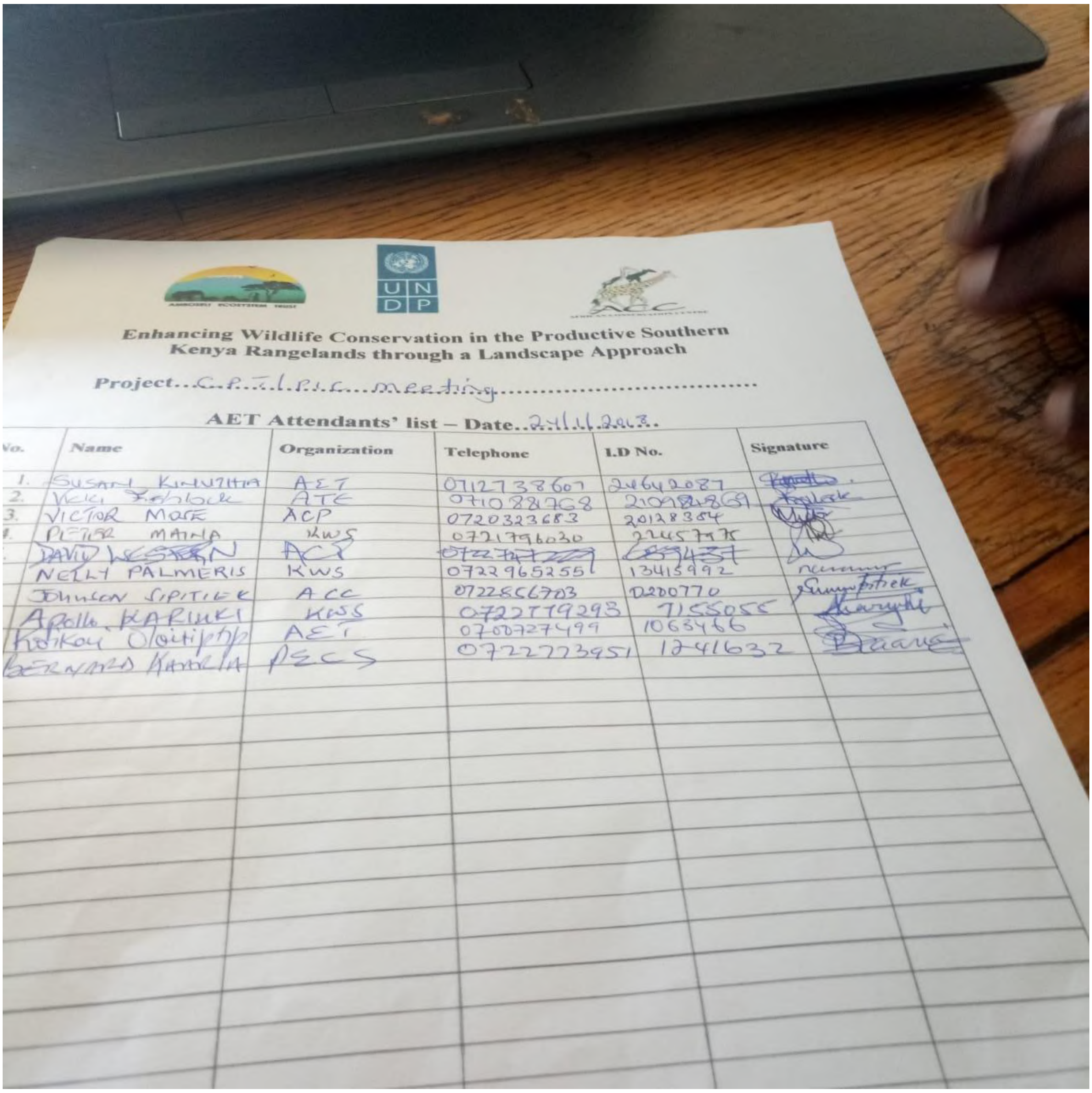

Enhancing Wildlife Conservation in the Productive Southern Kenya Rangelands through a Landscape Approach

Project...C.P.T.I.P.I.C. meeting...

AET Attendants' list – Date..24/11/2018..

No.	Name	Organization	Telephone	I.D No.	Signature
1.	SUSAN KINUTHIA	AET	0712738607	24642087	[signature]
2.	Vicki Fishlock	ATE	0710881768	21098469	[signature]
3.	VICTOR MOSE	ACP	0720323683	20128384	[signature]
4.	PETER MAINA	KWS	0721796030	22457975	[signature]
	DAVID WESTERN	ACC	0722747229	689437	[signature]
	NELLY PALMERIS	KWS	0722965255	13415992	[signature]
	JOHNSON SIPITIEK	ACC	0722856703	0200770	[signature]
	Apollo KARIUKI	KWS	0722779293	7155055	[signature]
	Koikai Oloitiptip	AET	0700727499	1063466	[signature]
	BERNARD KAMAU	PECS	0722773951	1241632	[signature]

AET Attendants list – Date:

No.	Name	Organization	Telephone
1.	Jackson Nkato	AET	0712588[illegible]
2.	KES Smith	ACC-EU	070651334
3.	JOHNSON SIPITIEK	ACC	072285670[illegible]
4.	TAL MANOR	ATE	070262740
5.	Moses Samuni	ATE	079811126
6.	Jeremy Goss	BLF	0718781354
7.	K. Nachuu	KWS	0714997[illegible]
8.	Daniel Sambu	BLF	07218882[illegible]
9.	ERIC OLE KESOI	LION GUARDIANS	0729739[illegible]
10.	Shadrack Ngene	KWS	0719701911
11.	Martin Kirasi	Amb. Rangers.	070412934
12.	David Kayian	Imbirikani	0724222025
13.	Lengen Victor	ACC	072279534
14.	Joel Ketukei	Kuku 'A' G/Ranch	0720815150
15.	JULIUS MURUKI	ACC	0722-289447
16.	Susan Kinyithia	AET	0712738607
17.	Daniel Metoe	MGR C/Man	0721291356
18.	Joshua Sayianka	MGR. Tkaan	0720580038
19.	Peter Selenka	ACC	0727413762
20.	Samuel Kaaniki	ALOCA	0723918068
21.	SADALLAH KOVIAKO	ALOCA	0722309434
22.	Daniel Njega	PECS	0720950500
23.	Dr. Bernard Kariu	PECS Ltd	0722773451
24.	Koikai Oloibobo	AET/ATGRCH	0700727499
25.	DAVID K. MAITUMO	ACC	0725831662
26.	Philip Mwengowe	IFAW	0727246220
27.	BENARD TULITO	IFAW	0724178512
28.	EVAN M. MKALA	IFAW	0722623771
29.	DANIEL MAPI	SCC-MGR	0727772240
30.	Looma Ngoreni	OOR	0712134553V

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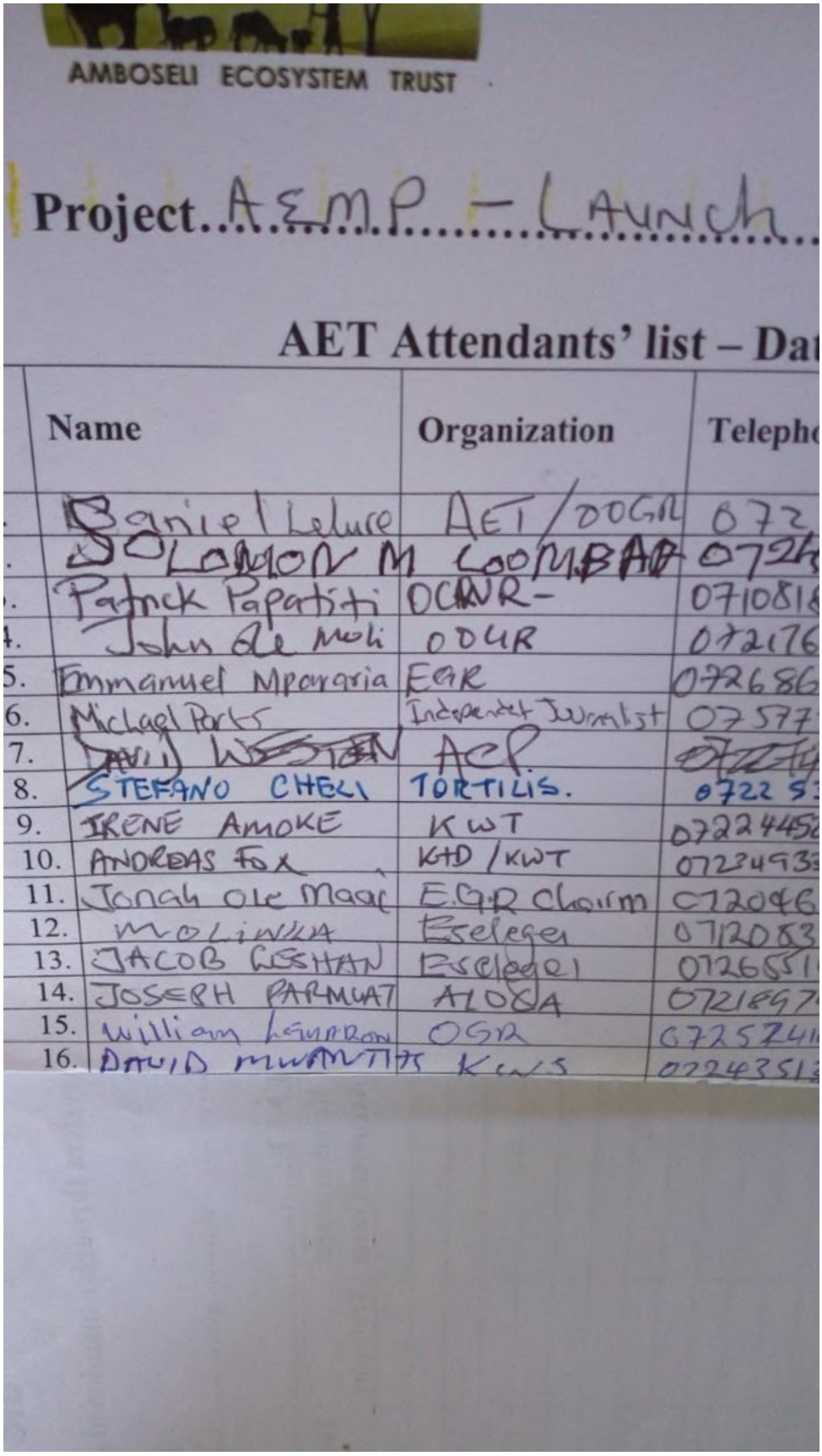

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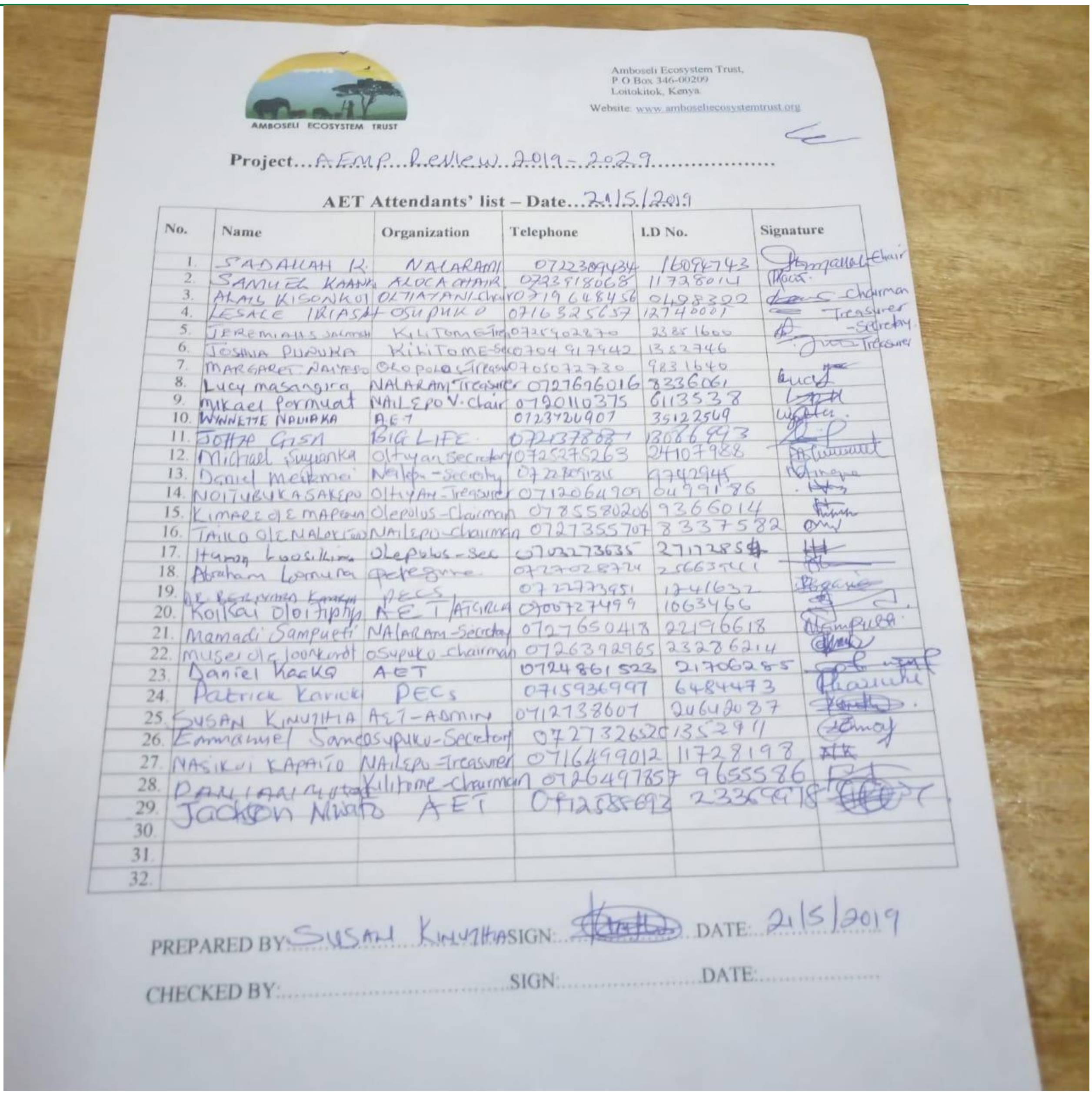
Project..A.E.M.P. – LAUNCH.....

AET Attendants' list – Dat

	Name	Organization	Telepho
	Daniel Lelure	AET/DOGR	072
	SOLOMON M LOOMBAR		072
	Patrick Papatiti	OCNR-	0710818
4.	John Ole Moli	DOGR	072176
5.	Emmanuel Mparaia	EGR	072686
6.	Michael Parks	Independent Journalist	07577
7.	DAVID WESTON	ACP	
8.	STEFANO CHELI	TORTILIS.	0722 5
9.	IRENE AMOKE	KWT	0722445
10.	ANDREAS FOX	KTD/KWT	0723493
11.	Jonah Ole Maoi	E.G.R Chairm	072046
12.	MOLINGA	Esselegei	0720853
13.	JACOB KESHAN	Esselegei	0726551
14.	JOSEPH PARMUAT	ALOSA	0721897
15.	William Lemaron	OGR	0725741
16.	DAVID MWANTHI	KWS	0724351



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Project...AEMP Review 2019-2029...

AET Attendants' list – Date...21/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	SADALLAH R.	NALARAMI	0722309434	16094743	[illegible] Chair
2.	SAMUEL KAANKI	ALOCA CHAIR	0723918068	11728014	[illegible]
3.	ALAIS KISONKOI	OLTIAYANI-Chair	0719648456	0498322	[illegible] Chairman
4.	LESALE IRIASH	OSUPUKO	0716325657	12740001	[illegible] Treasurer
5.	JEREMIAHS SALAASH	KILITOME-Tre	0725902870	23851600	[illegible] -Secretary
6.	JOSHUA PUAUKA	KILITOME-Sec	0704917942	1352746	[illegible] Treasurer
7.	MARGARET NAIYESO	OLOPOLOS-Treas	0705072730	9831640	[illegible]
8.	Lucy masangira	NALARAM Treasurer	0727676016	8336061	Lucy
9.	mikael Parmuat	NAILEPO V. Chair	0790110375	6113538	[illegible]
10.	WINNETTE NAUIAKA	AET	0723720907	35122569	[illegible]
11.	JOHN GISA	BIG LIFE	0721378087	13086993	[illegible]
12.	Michael Suyianka	Oltiyani Secretary	0725275263	24107988	[illegible]
13.	Daniel Meikmei	Nailepu-Secretary	0722809136	9742945	[illegible]
14.	NOITUBUKASAKEPU	OLTIYANI-Treasurer	0712064909	0499186	[illegible]
15.	KIMARE OLE MAPEUA	Olepolus-Chairman	0785580206	9366014	[illegible]
16.	TAIKO OLE NALOKIAU	NAILEPU-chairman	0727355707	8337582	[illegible]
17.	Haron Loosilkina	Olepolos-Sec	0703273635	27172854	[illegible]
18.	Abraham Lomuna	Peregrine	0727028724	25663511	[illegible]
19.	Dr. Benjamin Kanaya	PECS	0722773951	1241632	[illegible]
20.	Koikai Oloitiptip	AET/ATGRLA	0700727499	1063466	[illegible]
21.	Mamadi Sampueti	NALARAM-Secretary	0727650418	22196618	[illegible]
22.	Museiole Loonkerdi	OSUPUKO-chairman	0726392965	23286214	[illegible]
23.	Daniel Kaaka	AET	0724861523	21706285	[illegible]
24.	Patrick Karicki	PECs	0715936997	6484473	[illegible]
25.	SUSAN KINUTHIA	AET-ADMIN	0712738607	20640287	[illegible]
26.	Emmanuel Sande	Osupuku-Secretary	0727326520	135294	[illegible]
27.	NASIKOI KAPAITO	NAILEPU-Treasurer	0716499012	11728198	[illegible]
28.	DANIAAI [illegible]	Kilitome-Chairman	0726497857	9655586	[illegible]
29.	Jackson Nkato	AET	0712588693	23369978	[illegible]
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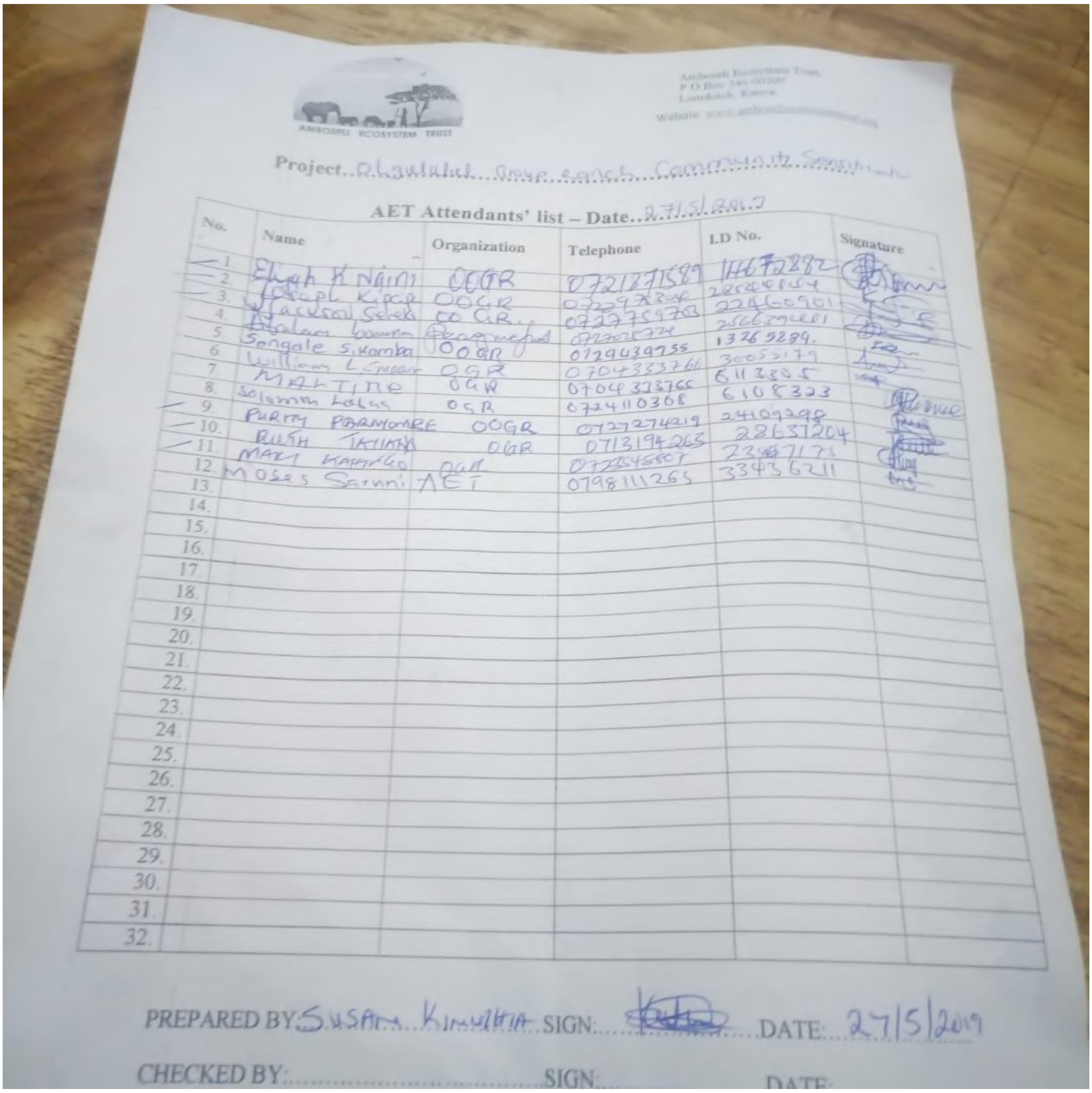

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Project..Olgulului group ranch Community Sensitisation

AET Attendants' list – Date..27/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Elijah K Naini	OOGR	0721871589	14672882	
2.	Joseph Kipar	OOGR	0729973304	28540854	
3.	Jackson Sekeki	OOGR.	0727759703	22460901	
4.	Abalem Lomuna	Ogorgomefud	0720025774	25663961	
5.	Songale S. Kamba	OOGR	0729439755	13265284.	
6.	William L. Gmorr	OGR	0704333766	30055179	
7.	MARTINE	OGR	0704373766	6113805	
8.	Solomon Lolas	OGR	0724110368	6108323	
9.	PURITY PARMOMRE	OOGR	0727274219	24109298	
10.	RUTH TATIANA	OGR	0713194263	22637204	
11.	MARY KAPINGO	OGR	0723545807	23497173	
12.	Moses Saruni	AET	0798111265	33436211	
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Website: www.amboseliecosystemtrust.o

Project ESELENKEI GROUP RANCH COMMUNITY SENSITIZA

AET Attendants' list – Date 28/5/2019

.	Name	Organization	Telephone	I.D No.	Signa
1.	NKAITOLE	NGAURU	0723211963	14672254	[signature]
2.	JACKline PAPA	EGR	0747301551	32926548	[signature]
3.	Wynnette Naliaka	AET	0723124407	35122549	[signature]
4.	DR. B. KAMRIA	PECS Ltd	0722773951	1241632	[signature]
5.	Moses Saruni	ATE	0798111265	33436211	[signature]
6.	Kupe James	BCP	0718305287	23589930	[signature]
7.	MONICA ORKOLMI	EGR		6108987	[signature]
8.	SUSAN KINUTHIA	AET	0712738607	24642087	[signature]
9.	DR PATRICK KARIUKI	PECS	0715936997	6484473	[signature]
10.	EMMANUEL MPARARA	AET	0726862702	21909819	[signature]
11.	DEMA OLE SILANGA	Eselenkei	0741635397	8343084	[signature]
12.	MORINKE OLE MPAKE	Eselenkei	0723542371	14624454	[signature]
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Project. ESELENKEI GRAZ. RANCH COMMUNITY SENSITIZATION MEETING

AET Attendants' list – Date. 28/5/2019.

.	Name	Organization	Telephone	I.D No.	Signature
1.	NAMBA NGIDU SAMBEL	ESELENKEI	0714385606	32967039	
2.	Faith Manei	ESELENKEI	0728972438	34970951	
3.	Lucy Parashian	ESelenkei	0718305098	23670487	
4.	Nadoloi ASHI	ESelenkei	0787445593	61732110	
5.	RICHARD MUKENTET	ESELENKEI	0715241727	24665625	
6.	SAIYORE MAAI	ESELENKEI	0727296359	23588746	
7.	THOMAS O KASHINE	ESELENKEI	0710352444	12950620	
8.	MORINKE KAYIAKA	ESELENKEI	0713677393	14672260	
9.	KORTOMPOI MASOPA	ESELENKEI	0728247127	6105332	
10.	Jonah Maai	Olmon ESELENKEI	0720461911	23670496	
11.	JACKSON MOREES	EGR TRESPASSER	0726078085	23585705	
12.	KOIKAI OLOLIPHP	AEI/AIGRCA	0710727499	1063466	
13.	Jacob Leyian	ESelenkei	0726471260	0494064	
14.	David Kitasho	ESelenkei	0710580798	11127557	
15.	Nkiti Saningo	ESelenkei	0758089797	11385063	
16.	LOKE Maamai	ESK/Lionguard	0726546839	25634354	
17.	JOSEPH LEKANAIYA	CHIEF/KINGMAN/ESELE	0720909817	22305615	
18.	ONANAI KIMITI	EGR	0713209997	25781943	
19.	MATASHA KARIONGI	EGR	07	6113376	
20.	LEYIAN MBAA	EGR	0703216559	6108780	
21.	MARIKA OLEKISOI	EGR	0711574850		
22.	SAMIOLE SHUAKA	EGR		9654339	
23.	OSEUR KESOI	EGR	0717763035	23592749	
24.	OLUA Saningo	EGR	0712190229	14672466	
25.	SACKSON LESIT	EGR	0790713652	23593125	
26.	STEPHEN NKUNAT	EGR	0753051356		
27.	Keturai Dabu	EGR	0720841739	6113595	
28.	MERLIN LEYIAN	EGR	0745295498		
29.	MUSA SHUULA	EGR	0741780944	14672343	
30.	LOISHULA MPOKO	EGR	0708395821	23567859	
31.	LENGALA MAILE	EGR	07		
32.	KIJANA MPOKE	EGR	0723440934	11385150	

PREPARED BY: SUSAN KINUTHIA SIGN: DATE: 28/5/2019

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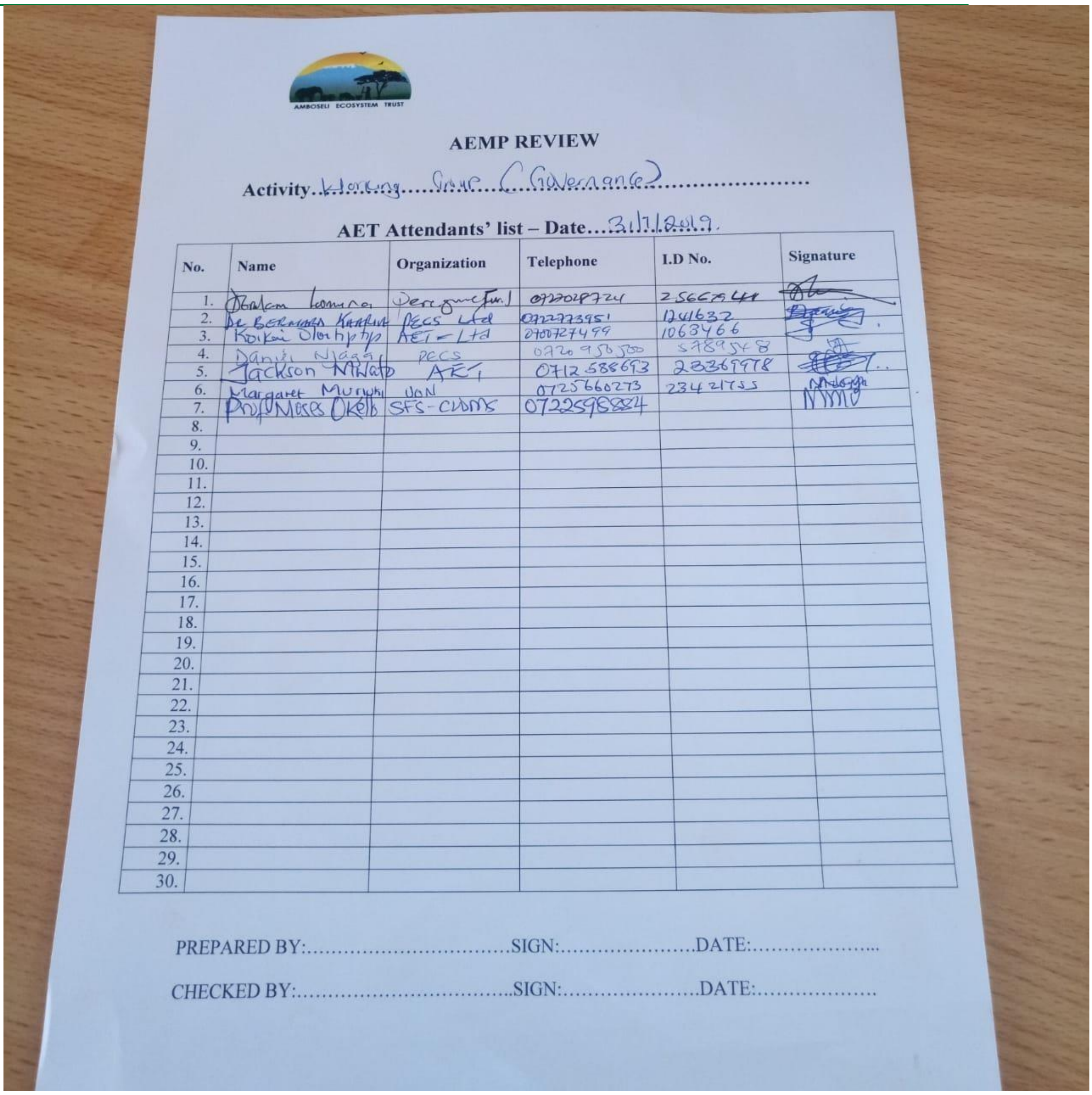

AMBOSELI ECOSYSTEM TRUST

AEMP REVIEW

Activity..Working....Group....(Governance).......................

AET Attendants' list – Date....31/7/2019.

No.	Name	Organization	Telephone	I.D No.	Signature
1.	[illegible] Lomuna	Peregrine Fund	0720028724	25667544	[illegible]
2.	Dr Bernard Kuloba	PECS Ltd	0722273951	1241632	[illegible]
3.	Koikai Oloitiptip	AET – Ltd	0700727499	1063466	[illegible]
4.	Daniel Njaga	PECS	0720 950 500	5789548	[illegible]
5.	Jackson Mwato	AET	0712588693	23369978	[illegible]
6.	Margaret Muriuki	UoN	0725660273	23421755	[illegible]
7.	Prof Moses Okello	SFS-CWMS	0722598884		[illegible]
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AMBOSELI ECOSYSTEM TRUST

AEMP REVIEW

Activity..Working Group (Governance)..........................

AET Attendants' list – Date...3/7/2019.

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Olalam Lomunai	[illegible]	0720028724	25667944	[illegible]
2.	Dr Bernard Kariuki	PECS Ltd	0722773951	1241632	[illegible]
3.	Koikai Oloitiptip	AET – Ltd	0700727499	1063466	[illegible]
4.	Daniel Njaga	PECS	0720 953 500	5789548	[illegible]
5.	Jackson Mwato	AET	0712 588693	23369978	[illegible]
6.	Margaret Murithi	UoN	0725660273	23421735	[illegible]
7.	Prof Moses Okello	SFS-CWMS	0722598884		[illegible]
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Website: www.amboseliecosystemtrust.org

Project..KUKUA GROUP RANCH SENSITIZATION MEETING

AET Attendants' list – Date..24/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	JOSEPH MPATAI	OOP	0725587992	13081705	[illegible]
2.	ZACHAYO LAKAINE	KUKU A	0711980277	9209881	
3.	LESANKA KINENG	" "	0726771315	12240065	
4.	NOAH RAPAITO	" "	0714927366	12482994	
5.	TEMUKA MAKO	" "	0717535452	12492963	
6.	LESIAMON LOMOMO	" "	0716471468	20272966	
7.	ANDREW KANYERE	" "	0729163208	12740722	
8.	PETER SOMBOK	" "	0703136175	26041583	
9.	NOAH KAYIAI	" "	0708479129	26490546	
10.	LESUMBUKA MPERE	" "	0715226141	24325883	
11.	JOEL NKABORI	" "	0725473331	11587217	
12.	NYERERE CHACHA	" "	0741689446	174183	
13.	LEKIFONY NKABURI	" "	07		
14.	MUSHINKA KURESOI	" "	0743498787	23968738	
15.	LENKERAI SEREKA	" "	0729436514	24308694	
16.	MERION MELITA	" "	0714706518	23445965	[illegible]
17.	SEMPETA SIPANTA	" "	0717986356	20406419	
18.	NTIPAPA METITO	" "	0798342216	13086324	
19.	KUTATA CHACHA	" "	0701947654	24326503	
20.	TIMOTEO RERENA	" "	0724883263	0	
21.	MALETI NATANGOYO	" "	0728116653	1352460	
22.	JOEL KETUKEI	" "	0720315150	14607231	
23.	LEKIPONYI MOKO	" "	0716127403		
24.	OTUMA PARMETOI	" "	0725784657	20313539	
25.	NAANI SHUAKA	"	0792399521	1467534	
26.	KORDUNI METUI	" "	0790778554	9366193	
27.	KITIPAI MPETE	" "	0720141736	9366104	[illegible]
28.	NAPUNKA MPETE	" "	0701923065	9336119	[illegible]
29.	ABRAHAM LANKAS	" "	0720140534	1467245	[illegible]
30.	KAIAA LEPIRO	" "	0781635232	3214426	
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AEMP REVIEW

Activity: Tourism expert working group:

AET Attendants' list – Date: 1/8/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Abraham Loomuna	AET	0722028724	25663941	[illegible]
2.	Esther Malanga Mbithe	Porini Safari Camps	0706 407 921	22023009	[illegible]
3.	Komora Edison	Tortilis Camp	0722448579	22950744	[illegible]
4.	KADZO SOFFIYA	MWCT	0729202511	35525288	[illegible]
5.	LIDIA BIRI	MWCT	0728769429	26733109	[illegible]
6.	DANIEL NJAGA	PECS	0720950550	5789548	[illegible]
7.	Kaikai Moitipip	AET /ATGRCA	0700727499	1063466	[illegible]
8.	DR BERNARD KAARIA	PECS Ltd	0722773451	1241632	[illegible]
9.	MUNASI Margaret	UON	0725660273	23421755	[illegible]
10.	Jackson Mwato	AET	0712 588693	23369978	[illegible]
11.	Daniel Kaaka	AET	0724 861523	21706285	[illegible]
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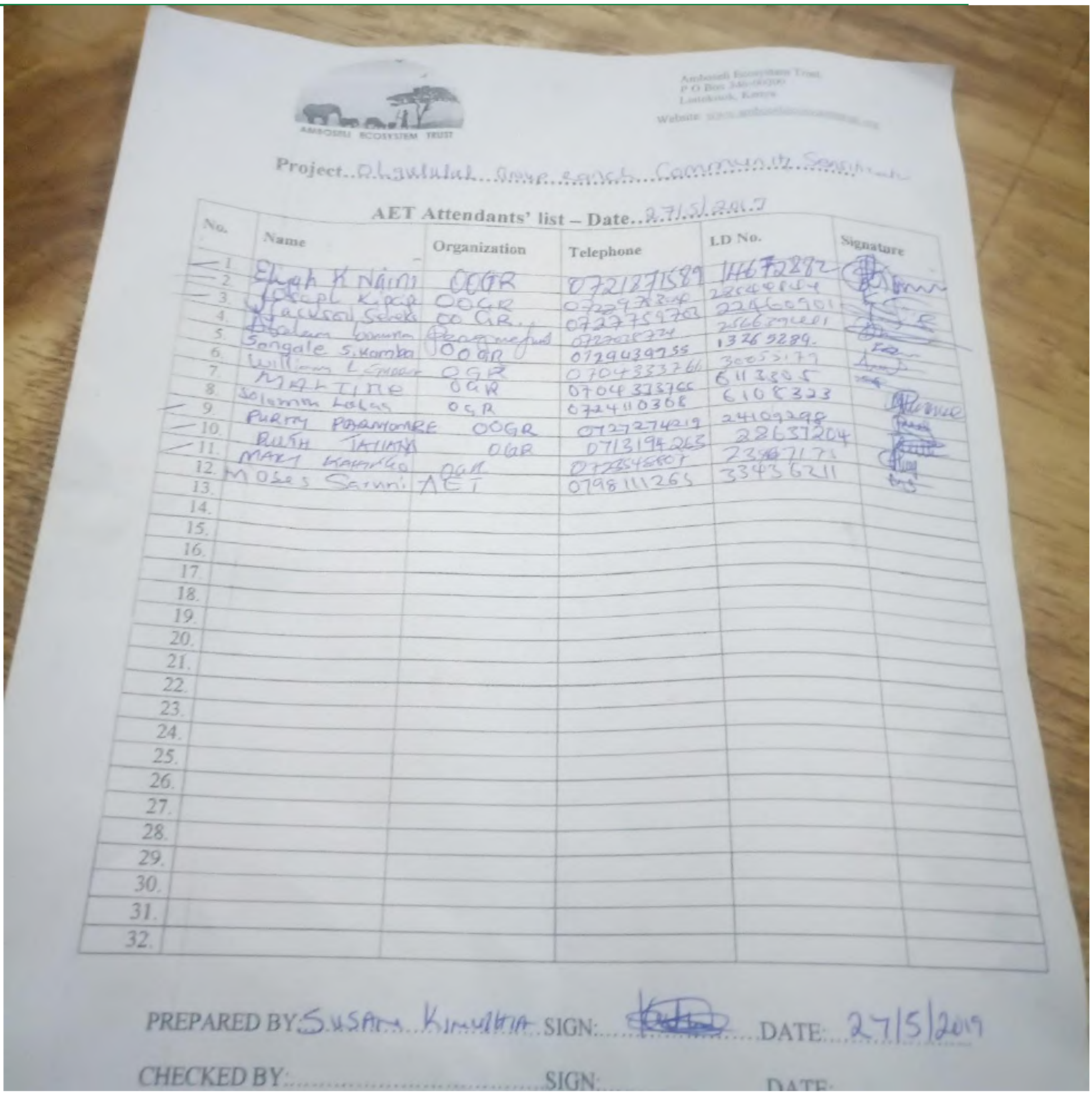

AMBOSELI ECOSYSTEM TRUST

Amboseli Ecosystem Trust
P O Box 340-00200
Loitokitok, Kenya
Website: [illegible]

Project: Olgulului group ranch Community Sensitization

AET Attendants' list – Date: 27/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Elijah K Naini	OOGR	0721871589	14672882	
2.	Joseph Kipcir	OOGR	07229[illegible]	28544854	
3.	Jackson Sekek	OOGR	0727759703	22460901	
4.	Abalam [illegible]	Paraprofessional	0722028774	25663[illegible]	
5.	Sengale S. Kamba	OOGR	0729439755	13265289.	
6.	William L [illegible]	OGR	0704333766	30053177	
7.	Maltine	OGR	0704373766	6113305	
8.	Solomon Lolas	OGR	0724110308	6108323	
9.	Purity Paramoare	OOGR	0727274219	24109298	
10.	Ruth Tatiana	OGR	0713194263	22637204	
11.	Mary Kapurko	OGR	0723545801	23[illegible]7171	
12.	Moses Sarnni	AET	0798111265	33436211	
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PREPARED BY: Susan Kimutia SIGN: .... DATE: 27/5/2019

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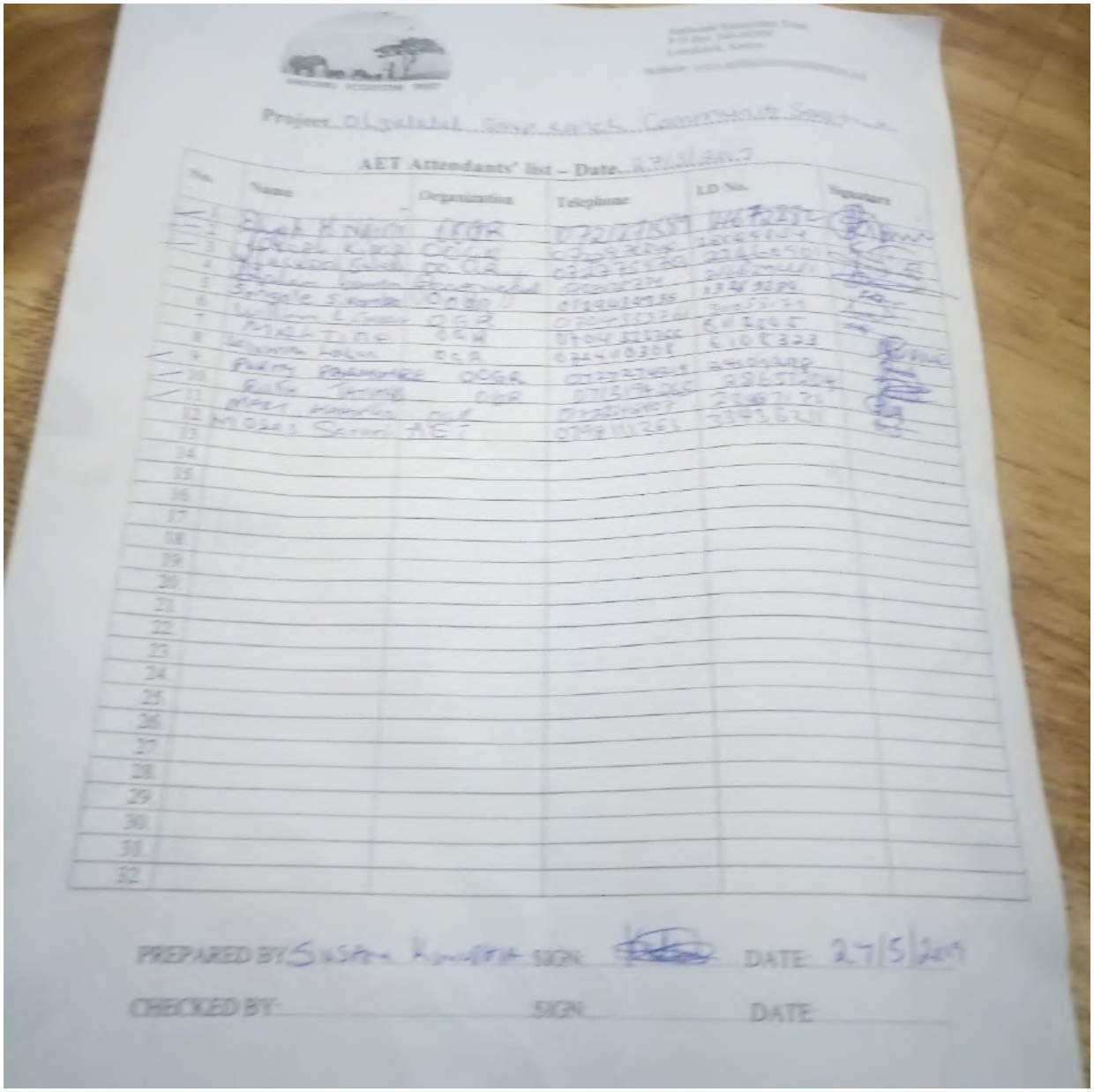

Project: Olgulului Group Ranch Community Sensitization

AET Attendants' list – Date: 27/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1					
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PREPARED BY: Susan Kimaiyo SIGN: DATE: 27/5/2019

CHECKED BY: SIGN: DATE:

AMBOSELI ECOSYSTEM TRUST

Amboseli Ecosystem Trust
P.O Box 346-00209
Loitokitok, Kenya
Website: www.amboseliecosystemtrust.org

Project Olgulului Group Ranch Community Sensitization

AET Attendants' list – Date 27/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Miaron Mbogo	"		29174603	
2.	Keen Steve	"	0719665644		
3.	Bob Kimiti	"	0714466733	25666635	
4.	M. Lakan Nasisi	"	0714315253	25571632	
5.	Benson Lamire	"		1172747	
6.	Daniel Shoke	"	0722568055	22418550	
7.	Simon M. Olotiptip	"	0725562449	5372146	
8.	Kitonku Tekeri	"	0710416357	22474357	
9.	Rintine Kulama	"	0719550991	1165742	
10.	Dickson Melita	O.R.T	0724824240	11725094	
11.	Mukure Lentio	"	0720907096	10463885	
12.	Thomas Marimbei	O.O.G.R	0792245597	9023762	
13.	Benson Kuya	O.O.G.R.	0726928655	24773254	
14.	Tyieu Mulama	O.O.G.R	0726634925	23286508	
15.	Louma Nkuren	O.G.R.C	0712289515	13685378	
16.	Raphael K. Kisipi	O.G.R.C.	0712134534	6135577	
17.	Njoroka ole Setonik	O.G.R.C	0713938396	11384592	
18.	Malaya ole Shumpi	O.G.R.C	0726597796	10902893	
19.	Daniel Telunsh	ODGR/AET	0722114816	14672161	
20.	Joel [illegible]	O.G.R/AET	0721392256	3729575	
21.	[illegible]	0792024429	11586906	07[illegible]	
22.	Oserian	O.G.R	0725579504	12088594	
23.	George Lipenge	OGR	0724587624	11587305	
24.	Stephen Kipaa	OGR	0722621719	11586112	
25.	Richard Kosei	OGR	0728329251	24825986	
26.	Simon Lentoo	O.G.R.	0720282149	11325126	
27.	Olengiron Tipilip	ORT	0797002481	13215024	
28.	Tipilit Tipape	OOGR	0712639436	14672251	
29.	Jackson Mwanza	AET	0712588693	23369978	
30.	Koikai Oloitiptip	AET/ATCRC	0707727499	1063466	
31.	Dr. B. Kariuki	PECS Ltd	0722773951	1241632	
32.	Dr. P. Kariuki	PECS Ltd	0715936997	6484473	
33.	Susan Kinuthia	AET Admin	0712738607	24642082	
34.	Wynnette Ndiaka	PECS	0723724907	33122509	

PREPARED BY: Susan Kinuthia SIGN: .... DATE: 27/5/2019

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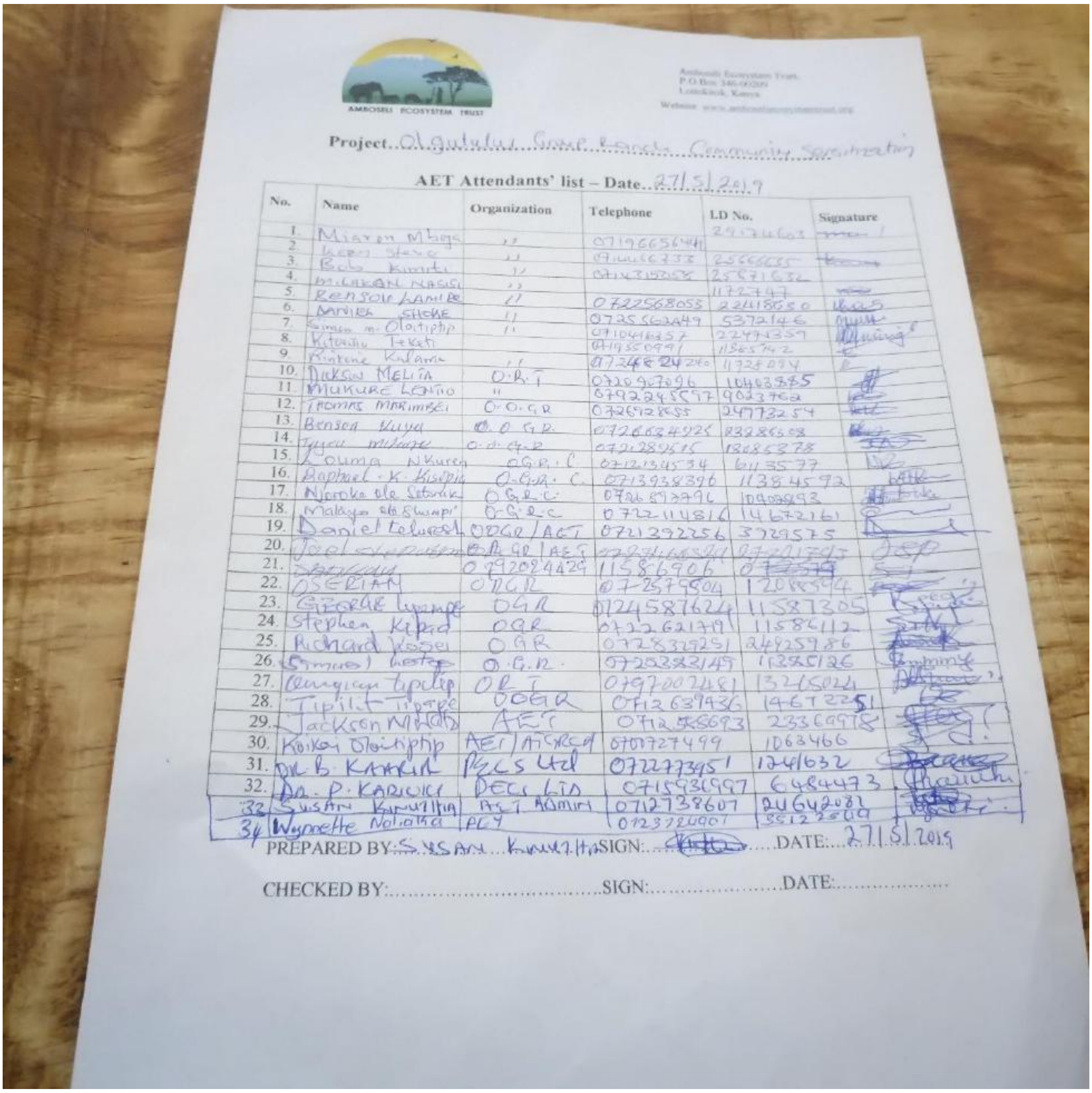

AMBOSELI ECOSYSTEM TRUST

Project: Olgulului Group Ranch Community Sensitization

AET Attendants' list – Date: 27/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Miaron Mbogo	"		29174603	
2.	Keen Steve	"	0719665644		
3.	Bob Kimiti	"	0714466733	25666635	
4.	M. Lakan Nasisi	"	0714315253	25871632	
5.	Benson Lamiba	"		1172747	
6.	Daniel Shore	"	0722568055	22418650	
7.	Simon M. Olaitiptip	"	0725562449	5372146	
8.	Kitomiu Tekati	"	0710416357	22491357	
9.	Rintene Kalama	"	0719550991	11565742	
10.	Dickson Melita	O.R.T	0724824240	11728094	
11.	Mukure Lentio	"	0720967096	10463885	
12.	Thomas Marimbei	O.O.G.R	0792245597	9023762	
13.	Benson Kuya	O.O.G.R.	0726928655	24773254	
14.	Tyjeu Mlaine	O.O.G.R	0726634925	23286508	
15.	Louma Nkuren	O.G.R.C	0721289515	13885378	
16.	Raphael K. Kisipia	O.G.R.C.	0712134534	6135 77	
17.	Njoroko ole Setonik	O.G.R.C	0713938396	11384592	
18.	Malaya ole Shumpi	O.G.R.C	0726 593796	10908893	
19.	Daniel Telurosh	OOGR/AET	0722114816	14672161	
20.	Joel [illegible]	O.R.GR/AET	0721392256	3729575	
21.	[illegible]		0792024429	11586906	
22.	OSERIAN	O.R.G.R	0725799504	12088594	
23.	George Lyange	OGR	0724587624	11587305	
24.	Stephen Kipaa	OGR	0722621719	11586112	
25.	Richard Kosei	OGR	0728329251	24825986	
26.	Simon Kostep	O.G.R.	0720333149	11385126	
27.	Ouugian Tiptip	ORT	0797002481	13265024	
28.	Tipilit Tipape	OOGR	0712639436	14672251	
29.	Jackson Mwaki	AET	0712588693	23369978	
30.	Koikai Oloitiptip	AET/AT GRCA	0707727499	1063466	
31.	Dr B. Kariuki	PECS Ltd	0722773951	1241632	
32.	Dr. P. Kariuki	PECS Ltd	0715931997	6484473	
33	Susan Kinuthia	AET Admin	0712738607	24642082	
34	Wynnette Naliaka	PCY	0723724907	35123549	

PREPARED BY: Susan Kinuthia SIGN: .... DATE: 27/5/2019

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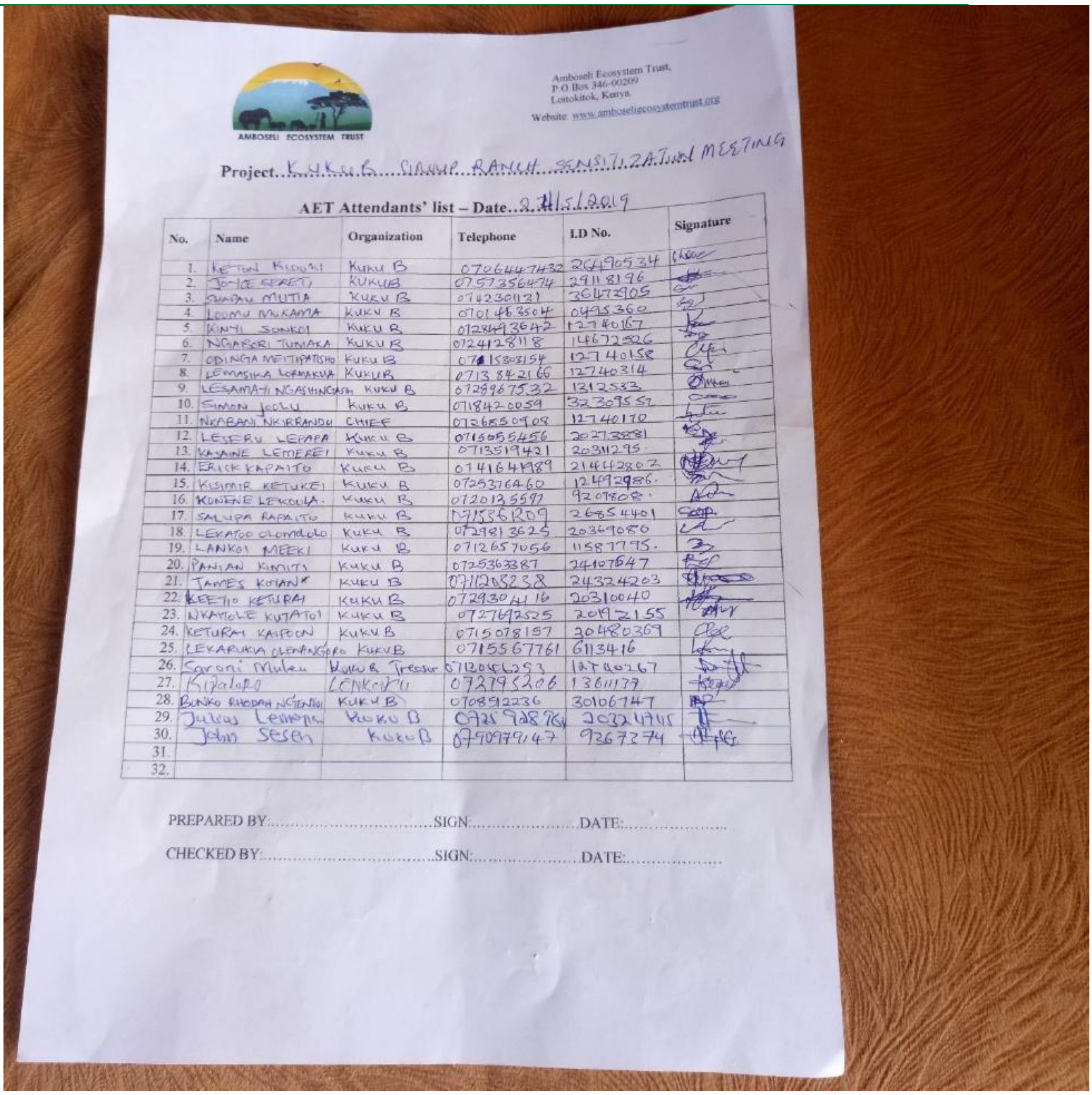

AMBOSELI ECOSYSTEM TRUST

Amboseli Ecosystem Trust,
P.O Box 346-00209
Loitokitok, Kenya
Website: www.amboseliecosystemtrust.org

Project: KUKU B GROUP RANCH SENSITIZATION MEETING

AET Attendants' list – Date: 27/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	KETON KISIOKI	KUKU B	0706447432	26490534	
2.	JOYCE SERETI	KUKUB	0757356474	29118196	
3.	SHAPAU MUTIA	KUKU B	0742301131	36472905	
4.	LOOMU MUKAMA	KUKU B	0701463504	0495360	
5.	KINYI SONKOI	KUKU B	0728493642	12740167	
6.	NGABORI TUMAKA	KUKU B	0724128118	14672526	
7.	ODINGA MEITIPATISHO	KUKU B	0715303154	12740158	
8.	LEMASIKA LORMAKUA	KUKUB	0713842166	12740314	
9.	LESAMAYI NGASHINGASH	KUKU B	0729967532	1312533	
10.	SIMON JOOLU	KUKU B	0718420059	32309552	
11.	NKABANI NKIRRANDU	CHIEF	0726550908	12740170	
12.	LESERU LEPAPA	KUKU B	0715055456	20273881	
13.	KASAINE LEMEREI	KUKU B	0713519421	20311295	
14.	ERICK KAPAITO	KUKU B	0741644989	21442802	
15.	KISIMIR KETUKEI	KUKU B	0725376460	12492986	
16.	KONENE LEKOULA	KUKU B	0720135597	9209808	
17.	SALUPA RAPAITO	KUKU B	0715361309	26854401	
18.	LEKATOO OLOMDULO	KUKU B	0729813625	20369080	
19.	LANKOI MEEKI	KUKU B	0712657056	11587795	
20.	PANIAN KIMITI	KUKU B	0725363387	24107647	
21.	JAMES KOIANK	KUKU B	0711203238	24324203	
22.	KEETIO KETURAI	KUKU B	0729304116	20310040	
23.	NKAYIOLE KUTATOI	KUKU B	0727692525	20192155	
24.	KETURAI KAIPOON	KUKU B	0715078157	30480369	
25.	LEKARUKIA OLENANGORO	KUKU B	0715567761	6113416	
26.	Saroni Mulew	Kuku B Tresurer	0713046293	12740267	
27.	Kipaloto	LENKOKU	0727935206	13611179	
28.	BUNKO RHODAH NGENTAI	KUKU B	0708512236	30106747	
29.	Julius Lemapis	Kuku B	0725928764	20324745	
30.	John Sesei	Kuku B	0790979147	9367374	
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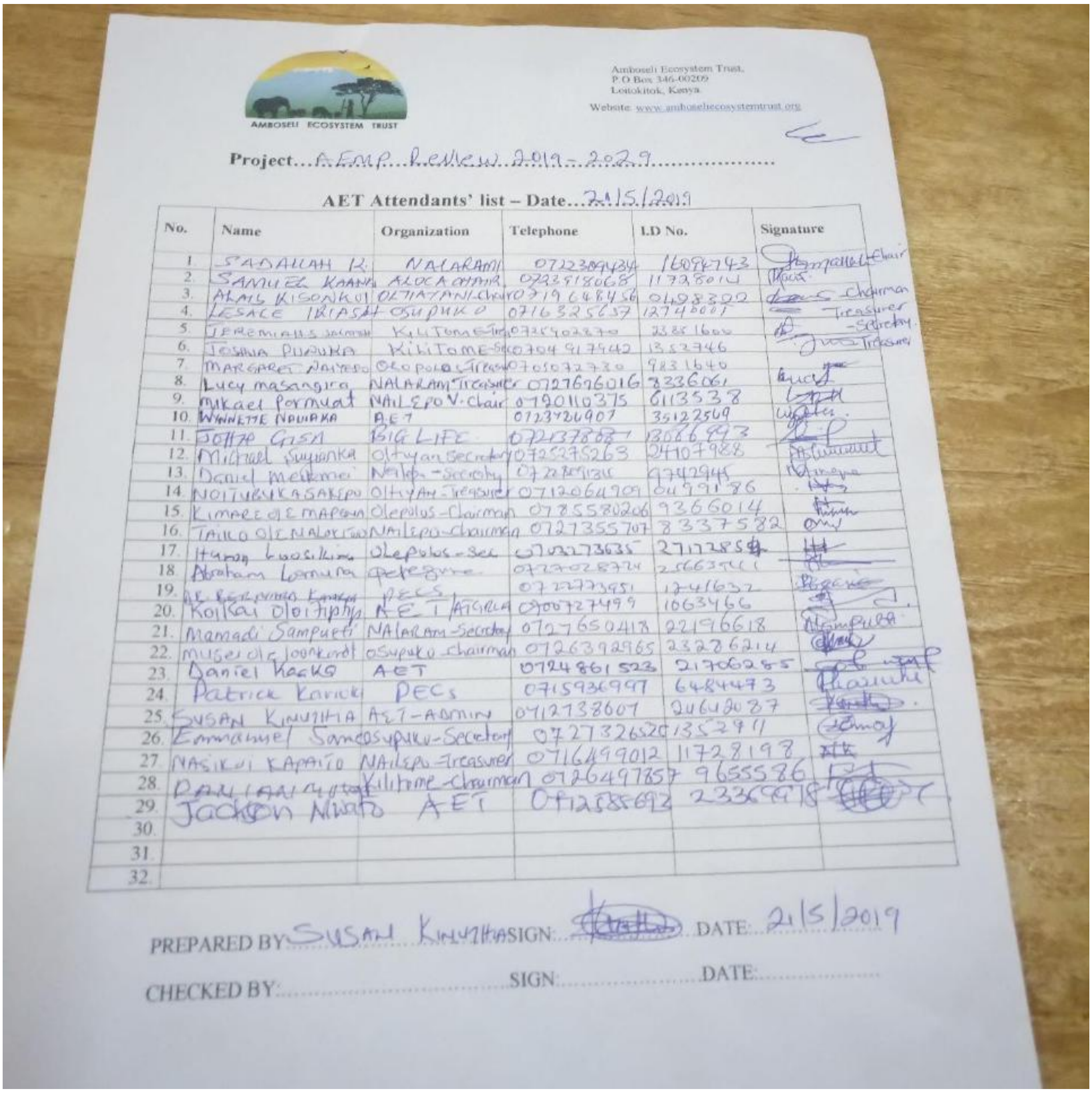

Project...AEMP Review 2019-2029...

AET Attendants' list – Date...21/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	SADALLAH K.	NALARAMI	0722309434	16094743	[illegible] Chair
2.	SAMUEL KAANA	ALOCA CHAIR	0723918068	11728014	[illegible]
3.	ALAIS KISONKOI	OLTIATANI-Chair	0719648456	0498322	[illegible] Chairman
4.	LESALE IRIASH	OSUPUKO	0716325637	12740001	[illegible] Treasurer
5.	JEREMIAH SALATON	KILITOME-Tre	0725402370	2385160	[illegible] -Secretary
6.	JOSHUA PURUKA	KILITOME-Se	0704917442	1352746	[illegible] Treasurer
7.	MARGARET NAIYESO	OLOPOLOS Treas	0705072730	9831640	[illegible]
8.	Lucy masangira	NALARAM Treasurer	0727676016	8336061	[illegible]
9.	mikael Pormuat	NAILEPO V. Chair	0790110375	6113538	[illegible]
10.	WINNETTE NDUIAKA	AET	0723424907	35122569	[illegible]
11.	JOHN GISA	BIG LIFE	0721378087	13066993	[illegible]
12.	Michael Suyianka	Oltiyani Secretary	0725275263	24107988	[illegible]
13.	Daniel Meikumei	Nailepo-Secretary	0722891311	9742945	[illegible]
14.	NOITUBUKASAKEPU	OltiyAni-Treasurer	0712064909	0499186	[illegible]
15.	Kimaren ole mapena	Olepolos-Chairman	0785580206	9366014	[illegible]
16.	TAIKO OLENALOTIO	NAilepo-chairman	0727355707	8337582	[illegible]
17.	Hamza Lwosikim	Olepolos-Sec	0703273635	2717285	[illegible]
18.	Abraham Lemuna	Peregrine	0727028724	25663441	[illegible]
19.	[illegible]	PECS	0722773951	1241632	[illegible]
20.	Koikai Oloitiptip	AET/ATGRLA	0700727499	1063466	[illegible]
21.	Mamadi Sampueti	NAlaRAm-Secretary	0727650418	22196618	[illegible]
22.	muserole Joonkerot	OSupuko chairman	0726392965	23286214	[illegible]
23.	Daniel Kacko	AET	0724861523	21706285	[illegible]
24.	Patrick Karick	PECs	0715936997	6484473	[illegible]
25.	SUSAN KINUTHIA	AET-ADMIN	0712738607	24642087	[illegible]
26.	Emmanuel Samo	Osupuku-Secretary	0727326520	1352911	[illegible]
27.	NASIKUI KAPAITO	NAilepu-Treasurer	0716499012	11728198	[illegible]
28.	[illegible]	Kilitome-chairman	0726497857	9655586	[illegible]
29.	Jackson Nkato	AET	0712585692	23369918	[illegible]
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PREPARED BY: SUSAN KINUTHIA SIGN: [illegible] DATE: 21/5/2019

CHECKED BY:............ SIGN:............ DATE:............

AMBOSELI ECOSYSTEM TRUST

Amboseli Ecosystem Trust
P.O.Box 346-00209
Loitokitok, Kenya
Website: www.amboseliecosystemtrust.org

Project: Mbirikani Group Ranch sensitization meeting

AET Attendants' list – Date: 23/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Titus Olarmran	Orgosua	0713319336	26623883	
2.	Marika Semerei	Isinet	0725992501	20361406	
3.	Francis Sanchuka	Mbirikani	0707341769	26491371	
4.	Leiyo Muindet	Ngoroshoni	0706493856	25808004	
5.	Matayo Naini	Ngoroshoni	0710209040		
6.	Lemeppaide Koitumet	Kalesirwa	0710291702	14607282	
7.	Kasaine Koikai	Njarai	0729473363	25655100	
8.	Wynnette Naliaka	A.E.T	0723724907	35122549	
9.	David Beckia	Emakutan	0702072432	24811613	
10.	James Selengis	ICA	0708138699	11586874	
11.	Kitesho Marika	Chemclam	0702798615	31062445	
12.	Jonathan Kidiri	ASS. CHIEF	0724108518	2415382	
13.	Joseph Ntakamo	Ass/ chief	0729573662	25486675	
14.	Joel Kelai	ASS/ chief	0712118015	24034825	
15.	Lesanta Kerkena	Committee member	0711542872	22605392	
16.	Ketina Kopretet	member	0771556060	20273768	
17.	Sainepunc Maris		0735470974	13265128	
18.	John Luyiara	Isinet	0711570617	23841267	
19.	Turere Olesalekio	Ilchalai	0710256832	21349401	
20.	Lemiteia Toro	Enkongu	0724879779	20405917	
21.	Timothy Saigilu	Chief - Isinet	0727614771	22237429	
22.	Jackson Nkato	AET	0712588693	22369975	
23.	Ar Bernard Kamau	Pecs Ltd	0722273451	124/632	
24.	Ibrahim Lomonan	Dorcgrace	0727028774	25682941	
25.	Siriri Ole Shukar	Osiram	0728801767	9654393	
26.	Grace N. Kanchori	"	0728953141	27710099	
27.	Mantoenje Koni	Osiram	0718691733	5373606	
28.	Dr. Patrick Kariuki	PECs	0715936987	6484473	
29.	Susan Kinuthia	AET	0712738607	24642087	
30.	Jackson Kanini	Ngoroshoni	0728413573	25110906	
31.	Isaiah Ngoito	Isinet	0795831552	11385155	
32.	Johnson Sipitiek	ACC	0722856703	0200770	

PREPARED BY: Susan Kinuthia SIGN: .... DATE: 23/5/2019

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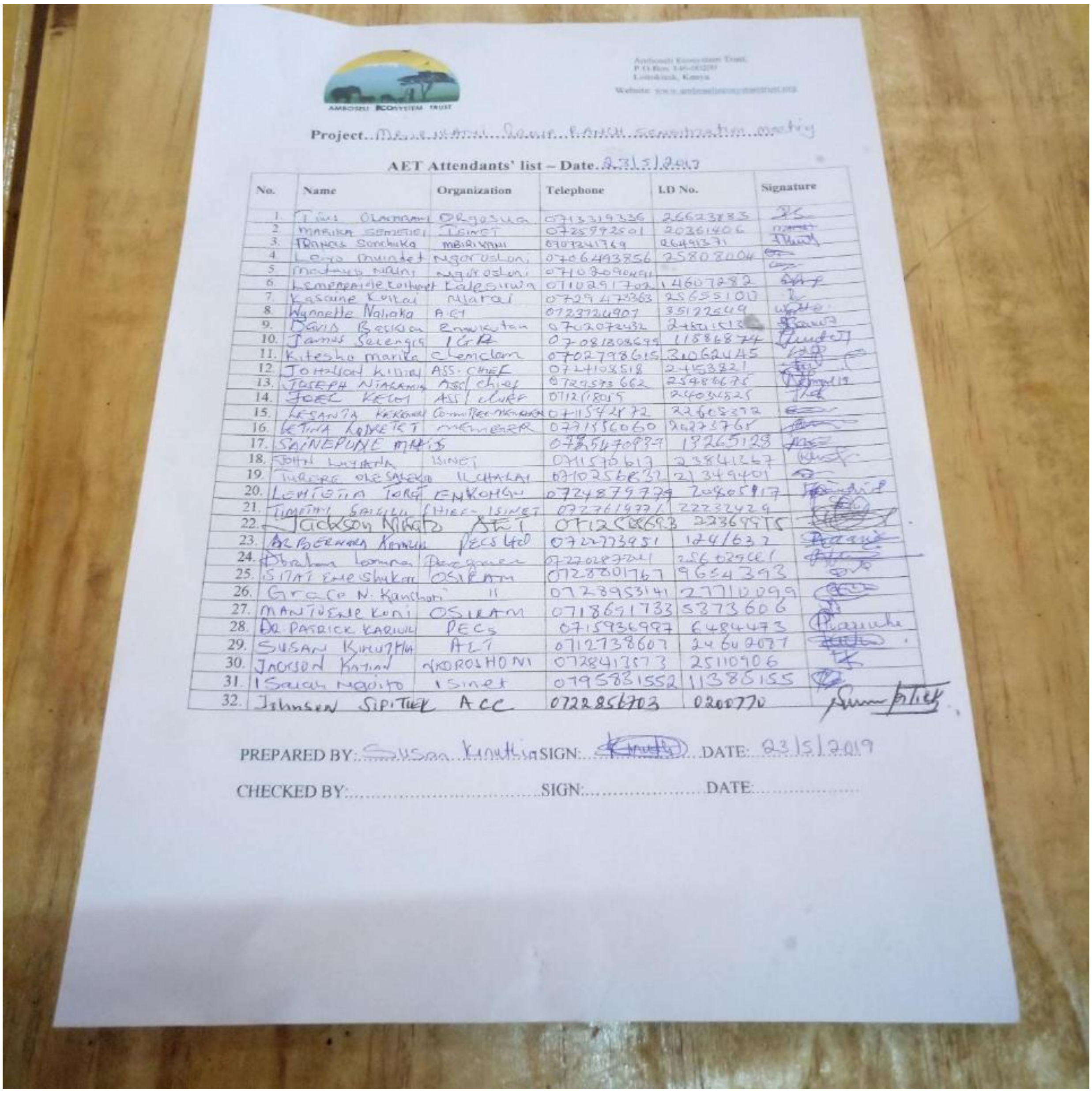

AMBOSELI ECOSYSTEM TRUST

Amboseli Ecosystem Trust, P.O.Box 140-00209 Loitokitok, Kenya

Website: www.amboseliecosystemtrust.org

Project Merueshi Group Ranch sensitization meeting

AET Attendants' list – Date 23/5/2019

No.	Name	Organization	Telephone	I.D No.	Signature
1.	Tius Olemamai	Orgosua	0713319336	26623883	[illegible]
2.	Marika Semetiei	Isinet	0725992501	20361406	[illegible]
3.	Francis Sonchuka	Mbirikani	0707341769	26491371	[illegible]
4.	Loyo Muindet	Ngorusoni	0706493856	25808004	[illegible]
5.	Mutayo Naini	Ngorusoni	0710309044		[illegible]
6.	Lemenpaine Koitapet	Kalesirwa	0710291702	14607282	[illegible]
7.	Kasaine Koikai	Njarai	0729473363	25655100	[illegible]
8.	Wynnette Naliaka	AET	0723724907	35122649	[illegible]
9.	David Besiso	Emakutan	0702072432	24811513	[illegible]
10.	James Serengis	ICR	0708180869	11586874	[illegible]
11.	Kitesho Marika	Chemclam	0702798615	31062445	[illegible]
12.	Johnson Kiliri	ASS. Chief	0724108518	24153821	[illegible]
13.	Joseph Niakamis	Ass/ chief	0729573662	25486675	[illegible]
14.	Joel Keloi	Ass/ clerk	0712118015	24034525	[illegible]
15.	Lesanta Kekenai	Committee member	0711542872	22603372	[illegible]
16.	Letina Kopeket	member	0771356060	20273768	[illegible]
17.	Sainepune Makis		0785470937	13265129	[illegible]
18.	John Layarta	Isinet	0715706613	23841367	[illegible]
19.	Turere Ole Saleyio	Ilchalai	0710256832	21349401	[illegible]
20.	Lemitetia Torgi	Enkongu	0724879779	20605917	[illegible]
21.	Timothy Saigilu	Chief- Isinet	0727619771	22232429	[illegible]
22.	Jackson Nkato	AET	0712588693	22369975	[illegible]
23.	Dr Bernard Kirimi	PECS Ltd	0722773951	124/632	[illegible]
24.	Abraham Lomuna	Parsgroup	0727028721	25602561	[illegible]
25.	Sitati Emeshukon	Osiram	0728801767	9654393	[illegible]
26.	Grace N. Kanchori	"	0728953141	27710099	[illegible]
27.	Mantuene Koni	Osiram	0718691733	5373606	[illegible]
28.	Dr Patrick Kariuki	PECs	0715936997	6484473	[illegible]
29.	Susan Kiruthia	AET	0712738607	24602077	[illegible]
30.	Jackson Katian	Nkoroshoni	0728413573	25110906	[illegible]
31.	Isaiah Ngaito	Isinet	0795831552	11385155	[illegible]
32.	Johnson Sipitiek	ACC	0722856703	0200770	[illegible]

PREPARED BY: Susan Kiruthia SIGN: [illegible] DATE: 23/5/2019

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AMBOSELI ECOSYSTEM PLAN
VALIDATION WORKSHOP.
18 – 19 DECEMBER 2019

CONFERENCE

TKH

THE KYAKA HOTEL MACHAKOS

HEKIMA HALL

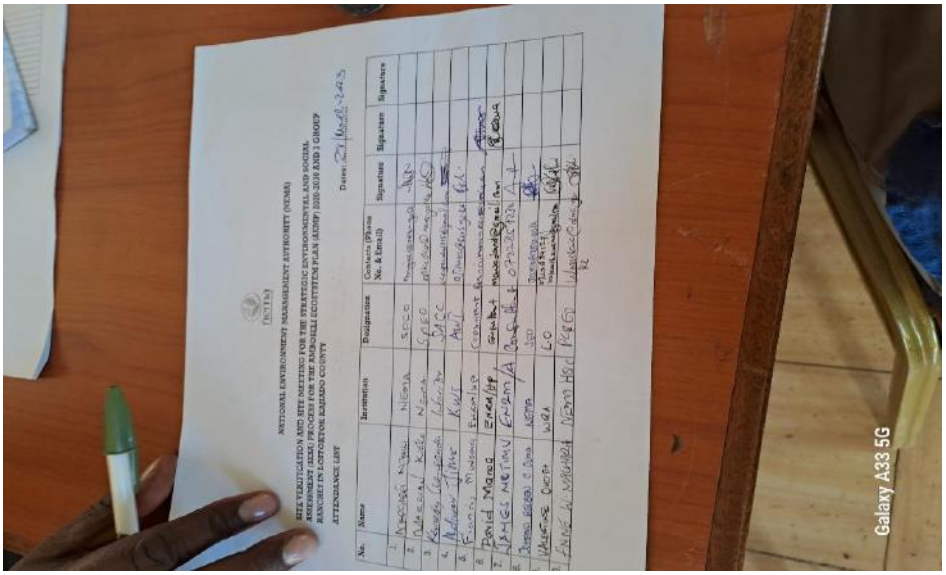
PARTICIPANT LIST FOR UNDP FROM 18TH- 19TH DECEMBER,2019

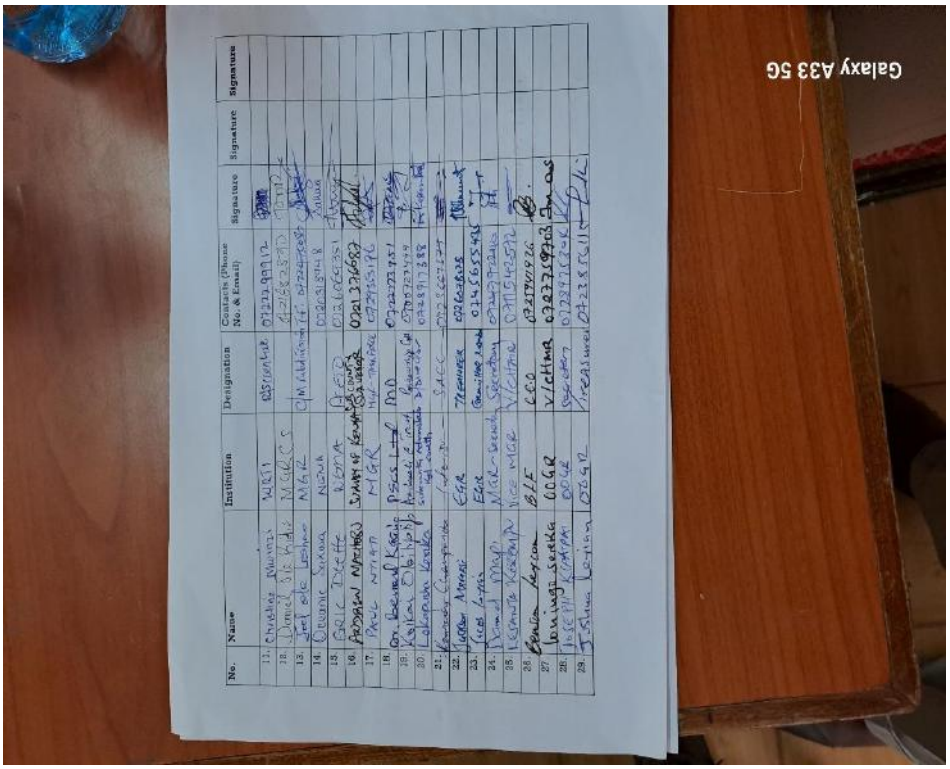
NO	NAMES	ORGANIZATION	PHONE NO.	ID NUMBER	EMAIL ADDRESS	18TH SIGN	19TH SIGN
1	~~Benjamin Kiinir~~	~~UNDP~~	~~[illegible]~~				
2	ANNE MUGO	WWF-KENYA	0793256320	14417689	amugo@wwfkenya.org		
3	Koikai Oleriptip	AET/AIGRCA	0700727491	1063466	oloikoikai@outlook.com		
4	Johnson Sipitiek	ACC	0722852703	0200770	johnson.sipitiek@acc.or.ke		
5	Peter Solonka	ACC	0729913762	25710200	solunkape@gmail.com		
6	Patrick Kariuki	PECS Ltd	0715936997	6484473	kariukipatrick011@gmail		
7	Dr Bernard Kaaria	PECS Ltd	0722773951	12441632	pecskenya@gmail.com		
8	Sintoyia Nkoyaiyo	CWCCC	0723149212	25027147	snkonyaiyo@gmail.com		
9	Jackson Nkato	AET	0712586693	23369978	jsmwato@gmail.com		
10	Dickson Meliia	O.R.T	0720-907091	10403995	N/A		
11	Kenneth Nashuu	KWS	0714997690	6494669	Knashu@kws.go.ke		
12	Daniel Loturoh	AET/OLGIE	0721392256	3929575	loturohdaniel@gmail		
13	John Bwa	KWS	0721250786	23573259	jbhoya@kws.go.ke		
14	Bernard Tulito	IFAW	0724178512	13086674	btulito@ifaw.org		
15	Daniel Kaaka	AET	0724861533	21706255	danielkaaka@gmail.com		
16	Darius Kanyuga	KWS	0722647792	22131143	dkanyuga@kws.go.ke		

ORGANIZER'S NAME: Wambui Ndungu Ngugi [illegible]

SIGNATURE:

DATE: 19/12/2019


NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY (NEMA)
SITE VISITATION AND STH MEETING FOR THE STRATEGIC ENVIRONMENTAL AND SOCIAL ASSESSMENT (SESA) PROJECT FOR THE ANCHUELI ECOSYSTEM PLAN (AEMP) 2020-2030 AND 3 GROUP RANCHES IN LOITOKTOK KAJIADO COUNTY
ATTENDANCE LIST
Galaxy A33 5G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AMBOSELI ECOSYSTEM TRUST

pecs Planning & Environmental Consultancy Services *Integrated Sustainable Solutions*

STRATEGIC ENVIRONMENTAL ASSESSMENT FOR OOGR SUBDIVISION SCHEME PLAN
LIST OF PARTICIPANTS

No.	Name	Organization/Group	Date	Signature	
1	NOAH KARAT	CHAIRMAN MESHANANI	12/10/2022	N.M.K	0710304133
2		CURIO HAWKER			
3		ASSOCIATION(			
4		Olugulului RANCH)			
5					
6	MUMBI	TUNDU MOJE	12/10/2022		0703160472
7	KITOSIYO	GRAZING GROUP			
8	CHARLADY	MESHANANI ZONE			
9	GEORGE LOPEMPE	CHIEF	12/10/2022		072458704
10	DANIEL KIPIOR	MEMBER			
11	SEMPEYO LEKUNANE	"			
12	NKANI KOSINGET	"			
13	NAILASTER MOSES	"			
14	KENI KOITEE	"			
15	NGITAA NKADOI	"			
16	NEPILINA KITEKWO	"			
17	NKARINA NINA	"			
18	MUZELE KILOWUA	"			
19	ESTER JACKSON	"			
20	TITOLAI OLUPEMPE	"			
21	YIOSIA TUMURUA				
22	MERSHI OLOSHIRU				
21	MELSAE KIKAADI				
22	NATETIA SIMANKA				
23	NAIPANI SALTABAU				
24	NAMPA SAYIANKA				
25	PASCALIA TIAPARINA				
26	NAITERO LAGIPUNTIE				
27	TITO MARON				
28	NKASIKU MAEN				
29	TESTER ELONGOI				
30	NELUKO [illegible]				
31	TIAPOYO SILANKEI				
32	TERESIAN KIRIA				
33	KEIS [illegible]				
34	NYAMBURA LEPARAKIO				
35	[illegible]				

AMBOSELI ECOSYSTEM TRUST

pecs
Planning & Environmental Consultancy Services
Integrated Sustainable Solutions

CONSENT FORM

Good morning/ afternoon my name is ......Pecs Ltd......and I am here with my colleague ..Experts............... We are from Planning and Environmental Consultancy Services, and working in consultation with our client Amboseli Ecosystem Trust.

We are currently carrying out a Strategic Environmental Assessment for Olgululul Ololarrashe Sub division Scheme Plan in Amboseli Ecosystem, and as part of consultation and public participation we would like to get your views on the subject matter. All information that you give us will be kept confidential and you will not be identified personally in any reports resulting from this research. Your participation in this study is completely voluntary and with no monetary compensation and you may refrain from answering any questions and end the survey at any point in time. It will take an approximately one hour to complete this discussion.

Do you consent to participating in this discussion?

Yes ☑

No ☐

If yes:

Name:....Apais Kisota....

Signature: :....[signature]....

Date:....14th Oct. 2022....

AMBOSELI ECOSYSTEM TRUST

pecs Planning & Environmental Consultancy Services *Integrated Sustainable Solutions*

STRATEGIC ENVIRONMENTAL ASSESSMENT FOR OOGR SUBDIVISION SCHEME PLAN
LIST OF PARTICIPANTS

No.	Name	Organization/Group	Date	Signature	
1	Daniel Leturs	OOGR – Chair	11/10/22	[illegible]	
2	Tajeu Milian	OOGR – Patron	11	[illegible]	
3	LENKESIA NKUJAI	OOGR – MEMBER		[illegible]	
4	RINKOINE KALAMA	OOGR – MEMBER		[illegible]	
5	SARUNI KATAMBOI	OOGR – MEMBER		[illegible]	
6	Richard LEPORES	OOGR – MEMBER		[illegible]	
7.	Daniel Kaaka	AET	11/10/2022	[illegible]	
8	Nicholas Bunyige	PECS Ltd	11/10/2022	[illegible]	
9	Dr. Bernard Kaaria	PECS Ltd	11/10/2022	[illegible]	
10	Joshua Leyian	OOGR – Treasury	11/10/22	[illegible]	
11	NORAH NJIRAINI	A.T.E	11/10/22	[illegible]	
12	Brian Sankale Tayo	OGR Ranger	12/10/2022	[illegible]	
13	DAVID Keyiane	OGR Commun	12/10/2022	[illegible]	0726092924
14	JOSEPH KILUA	KWS Sgt / Kitirua	12/10/2022	[illegible]	0720945838
15	peter menda	KWS / Rgr / Kitirua	12/10/2022	[illegible]	0724875736
16	Charles Wyamongo	KWS / Rgr Kitirua	12/10/2022	[illegible]	0710613716
17	Soloma Gitonga	KWS / Rgr Kitirua	12/10/2022	[illegible]	
18	MOLOIMET GATAMPU	SlomT / Rgr Kitirua	12/10/2022	[illegible]	
19	Evans OLAIS	OOG Ranger	10/13/2022	[illegible]	0702342966
20	Lekinc Senkata	OOG Chair Grazing	12/13/2022	[illegible]	070037969
21	FRED Sumaiyah	COUNTY GOVT	14/10/2022	[illegible]	0722452155
22	JONATHAN OSEUR	County GOVERNMENT	14/10/2022	[illegible]	0722579765
21	JOSEPH KIPMPA	OOGR	14/10/2022	[illegible]	07229753
22	Vicky Fishlock	ATE	14/10/2020	[illegible]	0710881768
23					
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AMBOSELI ECOSYSTEM TRUST

pecs Planning & Environmental Consultancy Services
Integrated Sustainable Solutions

CONSENT FORM

Good morning/ afternoon my name is PECS Ltd and I am here with my colleague Experts We are from Planning and Environmental Consultancy Services, and working in consultation with our client Amboseli Ecosystem Trust.

We are currently carrying out a Strategic Environmental Assessment for Olgulului Ololarrashe Sub division Scheme Plan in Amboseli Ecosystem, and as part of consultation and public participation we would like to get your views on the subject matter. All information that you give us will be kept confidential and you will not be identified personally in any reports resulting from this research. Your participation in this study is completely voluntary and with no monetary compensation and you may refrain from answering any questions and end the survey at any point in time. It will take an approximately one hour to complete this discussion.

Do you consent to participating in this discussion?

Yes ☑

No ☐

If yes:

Name: DANIEL LENGESH

Signature: :

Date: 11/10/22

AMBOSELI ECOSYSTEM TRUST

pecs Planning & Environmental Consultancy Services
Integrated Sustainable Solutions

CONSENT FORM

Good morning/ afternoon my name is ....Pecs Ltd.....and I am here with my colleague .....Experts..... We are from Planning and Environmental Consultancy Services, and working in consultation with our client Amboseli Ecosystem Trust.

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Do you consent to participating in this discussion?

Yes ☑

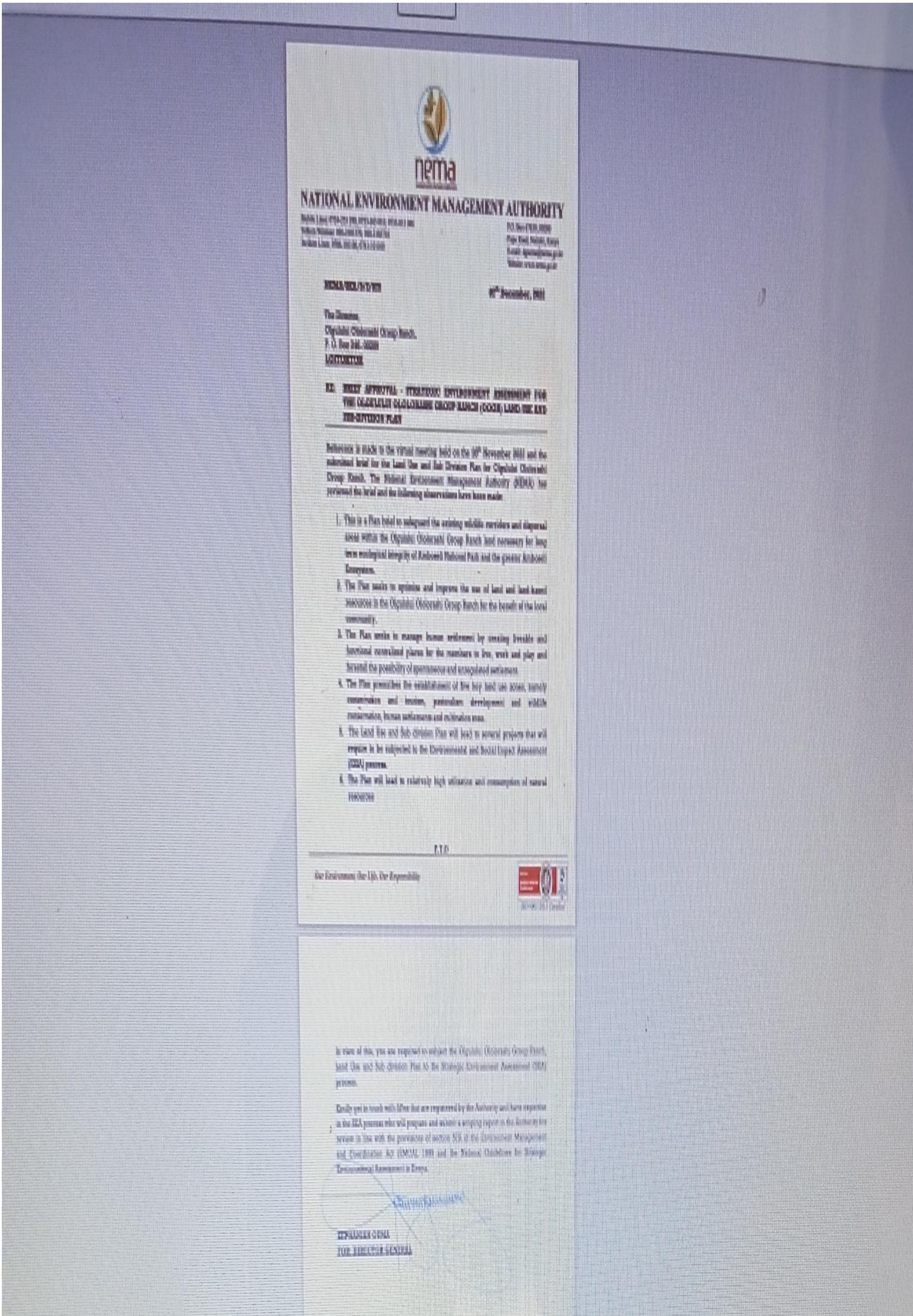
No ☐

If yes:

Name:.....EVANS OLAIS MERITEI.....

Signature: :.....

Date:.....10/13/2022.....



NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

The Chairman,
Olgulului Ololorashi Group Ranch,
P.O. Box [illegible]
LOITOKITOK

RE: BRIEF APPROVAL - STRATEGIC ENVIRONMENT ASSESSMENT FOR THE OLGULULUI OLOLORASHI GROUP RANCH (OOGR) LAND USE AND SUB-DIVISION PLAN

Reference is made to the virtual meeting held on the [illegible] November [illegible] and the submitted brief for the Land Use and Sub Division Plan for Olgulului Ololorashi Group Ranch. The National Environment Management Authority (NEMA) has perused the brief and the following observations have been made:

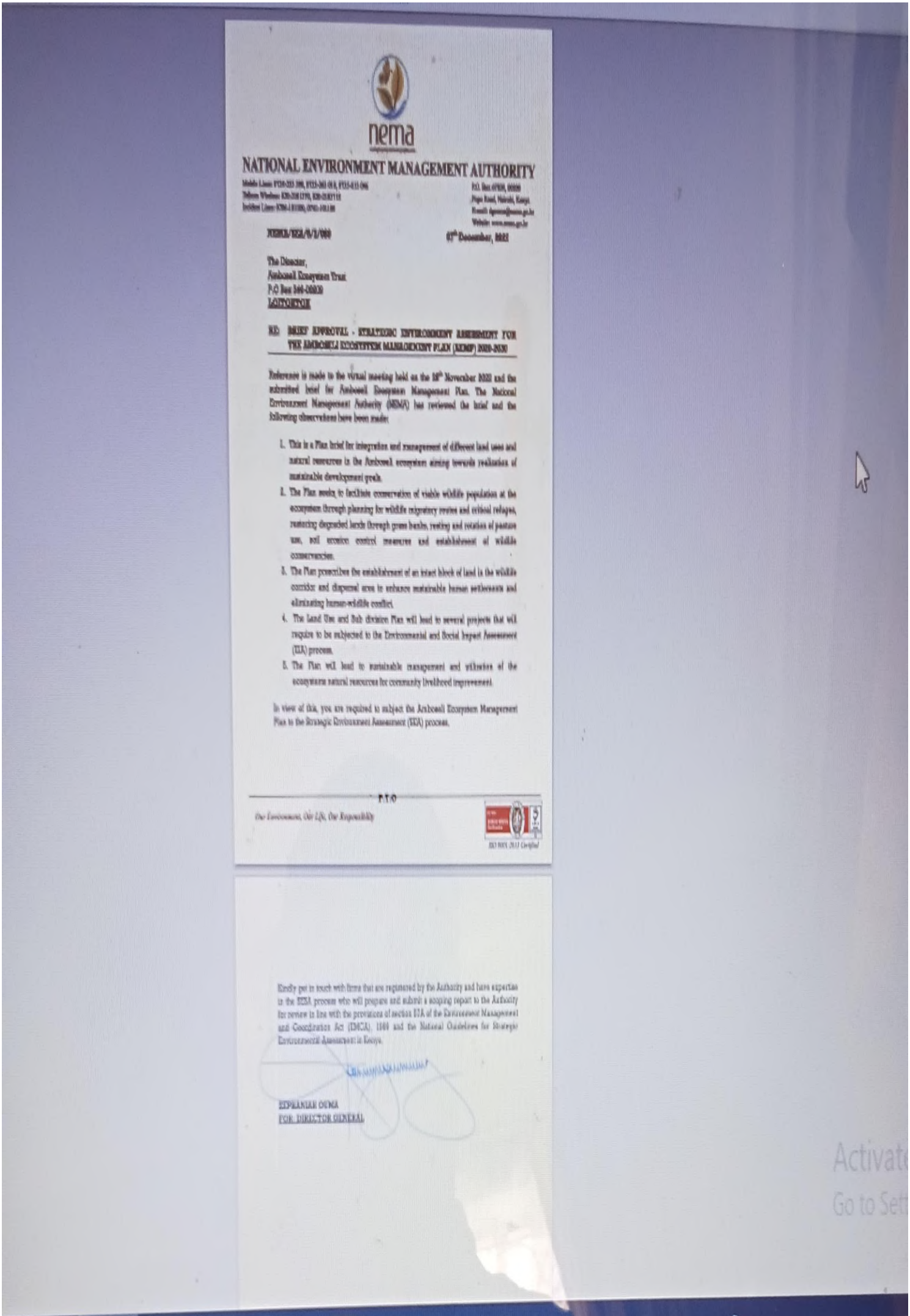
1. This is a Plan brief to safeguard the existing wildlife corridors and dispersal areas within the Olgulului Ololorashi Group Ranch land necessary for long term ecological integrity of Amboseli National Park and the greater Amboseli Ecosystem.
2. The Plan seeks to optimise and improve the use of land and land-based resources in the Olgulului Ololorashi Group Ranch for the benefit of the local community.
3. The Plan seeks to manage human settlement by creating liveable and functional centralized places for the members to live, work and play and forestall the possibility of spontaneous and unregulated settlement.
4. The Plan prescribes the establishment of five key land use zones, namely conservation and tourism, pastoralism development and wildlife conservation, human settlements and cultivation areas.
5. The Land Use and Sub division Plan will lead to several projects that will require to be subjected to the Environmental and Social Impact Assessment (ESIA) process.
6. The Plan will lead to relatively high utilization and consumption of natural resources.

P.T.O

In view of this, you are required to subject the Olgulului Ololorashi Group Ranch, Land Use and Sub division Plan to the Strategic Environment Assessment (SEA) process.

Kindly get in touch with [illegible] that are registered by the Authority and have expertise in the SEA process who will prepare and submit a scoping report to the Authority for review in line with the provisions of section [illegible] of the Environmental Management and Coordination Act (EMCA) 1999 and the National Guidelines for Strategic Environmental Assessment in Kenya.

[illegible]
FOR: DIRECTOR GENERAL



nema

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY

Mobile Lines: [illegible]
Telkom Wireless: [illegible]
Invitee Lines: [illegible]

P.O. Box [illegible]
Popo Road, Nairobi, Kenya.
Email: [illegible]
Website: [illegible]

NEMA/SEA/S/1/000 — 07th December, 2021

The Director,
Amboseli Ecosystem Trust
P.O Box 346-00232
LOITOKITOK

RE: BRIEF APPROVAL - STRATEGIC ENVIRONMENT ASSESSMENT FOR THE AMBOSELI ECOSYSTEM MANAGEMENT PLAN (AEMP) 2020-2030

Reference is made to the virtual meeting held on the 18th November 2021 and the submitted brief for Amboseli Ecosystem Management Plan. The National Environment Management Authority (NEMA) has reviewed the brief and the following observations have been made:

1. This is a Plan brief for integration and management of different land uses and natural resources in the Amboseli ecosystem aiming towards realization of sustainable development goals.
2. The Plan seeks to facilitate conservation of viable wildlife population at the ecosystem through planning for wildlife migratory routes and critical refuges, restoring degraded lands through grass banks, resting and rotation of pasture use, soil erosion control measures and establishment of wildlife conservancies.
3. The Plan prescribes the establishment of an intact block of land in the wildlife corridor and dispersal area to enhance sustainable human settlements and eliminating human-wildlife conflict.
4. The Land Use and Sub division Plan will lead to several projects that will require to be subjected to the Environmental and Social Impact Assessment (ESIA) process.
5. The Plan will lead to sustainable management and utilization of the ecosystems natural resources for community livelihood improvement.

In view of this, you are required to subject the Amboseli Ecosystem Management Plan to the Strategic Environment Assessment (SEA) process.

P.T.O

One Environment, Our Life, Our Responsibility

ISO 9001:2015 Certified

Kindly get in touch with firms that are registered by the Authority and have expertise in the SEA process who will prepare and submit a scoping report to the Authority for review in line with the provisions of section 57A of the Environment Management and Coordination Act (EMCA), 1999 and the National Guidelines for Strategic Environmental Assessment in Kenya.

STEPHANIE OUMA
FOR: DIRECTOR GENERAL

FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/18587

Application Reference No: NEMA/EIA/EL/24442

M/S **Dr. Bernard Kaaria Irigia**
(individual or firm) of address
P.O. Box 702 - 00517 Nairobi

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Lead Expert**

General

registration number **0079**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **1/13/2023** Expiry Date: **12/31/2023**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001: 2015 Certified

FORM 7 (r.15(2))

nema
mazingira yetu | uhai wetu | wajibu wetu

NATIONAL ENVIRONMENT MANAGEMENT AUTHORITY(NEMA)

THE ENVIRONMENTAL MANAGEMENT AND CO-ORDINATION ACT

ENVIRONMENTAL IMPACT ASSESSMENT/AUDIT (EIA/EA) PRACTICING LICENSE

License No : NEMA/EIA/ERPL/18586

Application Reference No: NEMA/EIA/EL/24440

M/S **Planning and Environmental Concultancy Services Limited**
(individual or firm) of address
P.O. Box 702 - 00517 Nairobi

is licensed to practice in the capacity of a (Lead Expert/Associate Expert/Firm of Experts) **Firm of Experts** registration number **7839**

in accordance with the provision of the Environmental Management and Coordination Act Cap 387.

Issued Date: **1/13/2023** Expiry Date: **12/31/2023**

Signature.....

(Seal)
Director General
The National Environment Management Authority

P.T.O.

ISO 9001:2015 Certified

APPENDIX 5b-Photos of Stakeholders Consulted

OLTUKAI SCOPING MEETING

ALOCA COMMUNITY Meeting

KUKU B COMMUNITY MEETING

ROMBO and KUKU

OLGULULUI

MBIRIKANI

ESELENKEI

Expert Consultation Meeting at Kyaka Hotel Machakos

ESELENKEI

Community Livelihood Expert Working Group

Tourism, IG and CL Expert Working Groups at Lunch at Noonkotiak Center


Sara
Heleen
COLBY

Expert Review Meeting at Kimana House

Amboseli Research Elephant Center where Natural Resource Management Expert Group Convened

Photo of Stakeholder Validation Meeting at Kyaka Hotel Machakos

StakeHolders, Consultants and NEMA Officials during Site Visit and Scoping Meeting at Amboseli National Park on 28th March, 2023


Galaxy A33 5G


KDC 688K
Galaxy A33 5G


Galaxy A33 5G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APPENDIX 6-General Baseline Survey Questionnaire

AEMP BASELINE SURVEY

2019HOUSEHOLD

QUESTIONNAIRE

QUESTIONNAIRE ID	

SECTION A. HOUSEHOLD IDENTIFICATION

A1.1 Date of Interview……

A1.2 Start Time ……**End Time**……

A2 IDENTIFICATION

	Response	**Use codes as applicable**
A2.1 Interviewer's Name		
A2.2 Name of the Respondent		
A2.3 Gender of the respondent	*1. Male 2. Female*	
A2.4 Name of Household Head		
A2.5 County		
A2.6 District		
A2.7 Division		
A2.8 Project Area		
A2.9 Village		
A2.10 GPS Reading	N/S	
	E/W	
A2.11 HH Head Mobile Number		

B. HOUSEHOLD DEMOGRAPHIC CHARACTERISTICS

B1. What is your total household size?		

B2. Household head and spouse demographic data (Fill in the table below)

No.	**B2.1: Household member**	**B2.2: Age** (In years)	**B2.3: Sex CODE:** 1= Male; 2= Female	**B2.4: Marital Status CODE:** 1=Single; 2=Married; 3=Widowed/ Separated; 4= Others (specify)…	**B2.5: Education level: CODE:** 1=No formal school; 2= Attended primary; 3 = Completed primary; 4 = Attended secondary; 5 = Completed secondary; 6= Post secondary; 7= Adult education.	**B2.6:** Main occupation	**B2.7:** Period as Main source of occupation (in years)
01	Head						
02	Spouse						

Main Occupation (CODES for 2.6): 1=Crop farming; 2=Livestock farming; 3= Formal employment (Salaried or permanent); 4=Informal employment (wage &casual labor); 5= Small/ micro enterprises; 6= Petty trade; 7= Others (specify)….

B3. Please provide information on the following

Age category (years)	**Total in the household**		**Total**
	M	**F**	
Under 15			
15 – 40			
41 – 64			
Over 64			

B4.1 What is the main source of income for your household?(**USE CODES Below**)

1=Crop farming; 2=Livestock farming; 3= Formal employment (Salaried or permanent); 4= Informal employment (wage&casual labor); 5= Small/ micro enterprises; 6= Petty trade; 7= Others (specify)….

B4.2 What are the other two important sources of income for your household? (In order)

B4.3 When did you start keeping livestock?

B4.4 How did you acquire your initial herd?
1= inheritance, 2 = bought 3 = relative 4 = Other (Specify)……..

B4.5 Who in your household is primarily responsible for making key decision regarding livestock activities? 1= Household Head, 2= Spouse; 3 Both HH Head & spouse; 4= Son; 5= Daughter; 6= Others (specify……)

B4.6 Who in your household spends most the time performing livestock activities?
1= Household Head, 2= Spouse; 3 Both HH Head & spouse; 4= Son; 5= Daughter; 6= Worker; 7= others (specify….)

B5.1 Type of livestock shed owned
1= Bricks 2= Pole; 3= Open; 4= Others (specify)…….

B5.2 Type of floor of livestock shed
1= Mud 2= Concrete; 3= Stones/gravel; 4= Others (specify)

B5.3 Do you have separate sheds for different livestock types and ages? 1 = Yes, 2 = No

If YES, Explain…….

B6.1 Do you keep records of your livestock activities?

1= Yes 2= No

B6.2 If yes, which ones? And for which livestock type?

1= Breeding; 2= Milking; 3= Feeding; 4= Health; 5= Expense; 6= Others (specify)

In Yes, for which Livestock Type ..... 1 = Cattle, 2 = Sheep, 3 = Goats, 4 = All

B7 How did you learn about record keeping? (Record in verbatim) …….

B8 Income status of household (Average total income from livestock related activities) per month1=<5,000; 2= 5,001-10,000; 3= 10,001-20,001; 4= 20,001-30,000; 5= >30,000

C. PRODUCTIVE RESOURCE ENDOWMENT

C1.1 Provide information on land tenure and use in the table below

Land tenure structure	**Size** (Hectares)	**Size of land under** (Hectares)					
		Annual crops (1year)	**Perennial crops** (More than 1year)	**Grazing**	**Fodder**	**Fallow**	**Rented out or Given out**
Owned land							
Leased land							
Borrowed land							
Communal land							
Total							

C2. Provide information on the following productive assets **OWNED** by the household

Functioning asset	**Do you own any of the assets?** 1=Yes, 2=No	**Number owned**	**Working status** 1 = most working properly; 2 = most working moderately; 3 = most working improperly	**Unit Price (Ksh)** (Current price if liquidated)	**Total value (Ksh)**
Crush					
Ox/donkey cart					

Pasture/crop enclosure					
Water tank/borehole					
Feed store					
Livestock routine management tools					
Sprayer					
Irrigation equipment					
Tractor					
Pickup, lorry					
Slaughter Slab					
Others (Specify) **……**					

D3 LIVESTOCK PRODUCTION

D3.1 Please indicate the types of **livestock** you **OWN** in your household (2014)

Type	**Number owned by breed**			**Number lost**	**Current average price/unit (Ksh)**	**Service** 1=AI 2=Natural 3= Bull scheme	**Mineral supplement**	**Average Livestock Body Condition Score** (**USE CODES**)
	Local	Improved	Breed Type					
Cattle								
Goats								
Local goats								
Sheep								
Others (specify)...								

Average body condition Score: 1= Emaciated, 2 = fairly emaciated, 3 = average, 4 = good, 5 = fat

D2.2. What was the cause of livestock loses **(Circle all that apply)**?
1= Drought related, 2= Disease related, 3= Skills related, 4= Other (specify)…….

D2.3 Which of the following herding practices to you practice?

Herding Practice		
Paddocking		
Semi-paddocking		
Open grazing		
Mineral supplements		
Tethering		
Other (Specify)		

D2.4 Which is the main herding system practiced by your household?

1= Paddocking, 2 = Semi- paddocking, 3= Open grazing, 4 = Tethering, 5 = Other (Specify)

D2.5 What is the average culling period for your livestock (yrs)……..

D2.6. Use and satisfaction with Livestock Services in the past 1 year

Livestock Technology		**Whether**	**Who provided**	**Reliability of**	**Affordability of**	**Satisfaction level**

	Is the household aware of service? **1=Yes** **2= No**	**household has used service in the past 1 year** 1= Yes 2= No	**the service** 1. Private service provider 2. Government extension agent 3. Marketing association **4. Other (specify)**	**provider** 1. Not reliable 2. Neutral 3. Reliable	**service** 1. Very expensive 2. Fair 3. Affordable	**with service** 1. Dissatisfied 2. Fairly satisfied 3. Satisfactory 4. Very Good
Purchased Hay						
Vet services & Vaccinations						
Tick control						
De-worming						
AI service/Breed improvement services such as bull schemes						
De-stocking/re-stocking						
Use of crop residue						
Spraying race						

D2.7 Do you practice on-farm feed conservation? 1=Yes 2=No

D2.9 If yes, which method did you use in the past 12 months? 1=Hay 2=Silage 3=Both (i.e. hay & silage); 4 Other (specify)

D2.10. In which year did you first use this method? .....

D.2.11. Who is your nearest stockist or supplier of livestock inputs in Kms?

D.2.12 What is the distance to the nearest stockist of livestock inputs in Kms?

D.2.13 What is the distance to the nearest market where you sell or buy livestock in Kms?

D.2.14 What is the mode of transport used to the nearest market for livestock?

Mode of transport 1=Walking, 2=Bicycle, 3=Matatu/Bus, 4=Motorbike, 5= Others

(specify.)D2.15 What is the cost to and from the nearest market for livestock?

E1: ACCESS TO WATER FOR DOMESTIC AND LIVESTOCK USE

E.1.1 Water Source for Domestic and Livestock Use

Water Use	**C.3.2:** What is the main source of water for this use during wet season?	**C3.3:** What is the distance to the water supply infrastructure mentioned in Q C3.2 in wet season?	**C3.4:** What is the main source	**C3.3:** What is the distance to the water supply infrastructure mentioned in Q

	1=Piped, 2= Public Tap, 3= Borehole, 4= Communal water point, 5=Rain water, 6=Vendor/tanker truck, 7=River/stream, 8= Others (Specify)….		of water for this use during dry season?	C3.4 in dry season?
Livestock production				
Domestic use				

E1.2 If used for livestock production, is water supply adequate for continuous planning of your activities? 1=Yes; 2=No

E1.3 If No to Q E1.2, what mechanism do you use to cope with water scarcity during dry seasons? **(Circle all that apply)**

f) Develop water harvesting structures e.g. water pans,
g) Move to other locations in search of water
h) Reduce the scale of operation
i) Withdraw from water demanding activities
j) Do nothing
k) Other (specify)……..

E1.4 Are you a member of a Water User Association in

this area?1= Yes, 2 = No

E1.5 If Yes, Which one? .....(Actual Name)

E1.6 Are you satisfied with the service offered by the Water User Association?.....

1= Not satisfied at all, 2 = fairly satisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied

E1.7 What is your reason for the level of satisfaction with the service above?

……

E2. LIVESTOCK OUTPUT AND MARKETING

E2.1 Livestock and livestock products produced in the past 1 year.

Livestock and related products	Total herd size in 2013	Number of months of sales	Average quantity sold per month	Average unit sale price during a peak month of sale	Who is mostly involved in selling these products? **	Buyer type of largest sale***	Market place where most of the produce was sold****	Main marketing challenge
Cattle								
Goat								
Sheep								
Meat (slaugh-tered)								
Hides and skin								
Other (specify):								

**Unit of Production: 1= Kgs, 2= Numbers*
Specify the units (products like milk can be captured on a daily basis and computed before entry in the table)

**** **HH member involved**: 1= HH Head; 2= Spouse; 3= Son/Daughter; 4= Hired labour; 6=Others (specify...)
**** **Buyer type**: 1=Cooperative societies, 2=Farmer group, 3= Private processors/abattoirs'; 4= Middlemen/informal trad-ers; 5=Institutions/Hotels, 6= Consumer/Neighbour/Farmer, 7= Other (specify)*

***** **Market place**: 1=Village, 2=Neighboring village/location/road/junction, 3=Nearby township, 4=Distant township,5=Regional market, 6=Others (Specify) ……*

****** **Constraint**: 1=Low price, 2=Poor road to the market, 3=Poor access to information, 4=Lack of reliable transport,5=Others (Specify) ……*

E2.2. What are your main sources of market information?
1= Mass Media – Radio; 2= Brokers; 3= Neighbours/friends; 4= Private sector; 5= Group /members; 6= NGOs/CBOs; 7= Others -……

E2.3. Do you add value to your livestock products before selling? 1=Yes; 2=No

E2.4. If yes, what value adding activities did you carry out?

_____

E2.5. Do you have any formal marketing arrangement for your livestock? 1=Yes; 2=No
E2.6. If yes, explain?

_____

E2.7. What determines your choice of market to sell your

livestock?1= Price, 2. = distance, 3 = convenience, 4 =

Other (specify)

F. MEMBERSHIP TO FARMER GROUPS AND OTHER SOCIAL GROUPS

F1.1 Are you a member of any famer group? ….. 1=Yes; 2= No

F1.2 If Yes to F1.1 above, please provide the following information if you or any member of your household belongs to anylocal association/group

Household member 1=Head, 2=Spouse, 3=Both (i.e. 1&2); 4= Son/daughter; 5=Others (specify)…..	**Association/ group type***	**Year joined**	**Main activities of the association/ group**		
			1.	2.	3.
			1.	2.	3.
			1.	2.	3.
			1.	2.	3.
			1.	2.	3.

***Association/group type**: *1=Farmers Field School (FFS), 2=Cooperative/marketing, 3=Faith based group, 4=Credit and savings group, 5=Extension group, 6= Common interest group e.g. water users association, 7=Community self-help group, 8=Others (specify*

F1.3 If Not a member of a marketing association, why?.....

F1.4 Has the group assisted you in solving problems experienced in livestock production or marketing?
1=Yes, 2=No

F1.5 If Yes, how……

F1.6 How has your membership to the group **MAINLY** impacted on your household?

Type of impact on the household	**Ranking of main reason**
Has raised household living standard	
Increased level of livestock productivity	
Increased level of awareness	
Increased access to markets and inputs	
Has assisted during time of need	
No impact at all despite undertaking group activities	
A waste of time –opinion that participation in groups yields no change and would better be spent in alternative activities	
Others (specify)	

F1.7 Are you satisfied with the service offered by the Marketing Association?.....

1= Not satisfied at all, 2 = fairly satisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied

F1.8 What is your reason for the level of satisfaction with the service above?

……

F1.9. Are women as well as men involved in the following activities and practices in your community? Please fill in the tablebelow

No	**Activities and practices**	**Involvement**	**If involved, what is the level of**

		1=Involved 2=Not involved	**involvement** 1-Only women involved 2-More women involved 3-Equal involvement 4- Less women involved 5- No women involved
1	Attending field demonstrations and trainings		
2	Farm livestock activities: management practices		
3	Farm livestock activities: sale of livestock products		
4	Off farm activities		
5	Learning improved agricultural technologies		
6	Adaptive trials of improved agricultural/livestock technologies		
7	Training other farmers on improved agricultur-al/livestock technologies		
8	Others (Specify)……		
9			
10			

G. ACCESS TO FINANCIAL SERVICES

G1. Financial capital

Have you applied for loan/credit from any financial institution source in the last one year?1= Yes; 2= No

Have you received any loan/credit in the past one year from any financial service provider?1= Yes; 2= No **[if question G.2 is No, move to G.3]**

G.2.2.1 Person who received the loan **Codes:** 1=Household head 2= Spouse	**G.2.2.2:** If Yes to G.2; from which source? **USE CODES BELOW***	**G.2.2.3:** What wasthe amount received?	**G.2.2.4:** What was the loan received used for? **USE CODES BE-LOW****	**G.3:** **If did not re-ceive the loan applied for, why?** **CODES:**	

G.2.2.2* Codes: *1=AFC; 2 =K-rep; 3 =Merry go round/ROSCAS; 4 = SACCO; 5 =Cooperative; 6=Commercial bank; 7=MFIs; 8=Other(specify)……*

G.2.2.4** Codes: *1 = Livestock; 2 = improved livestock inputs; 3 = Building (livestock related); 4 = Livestock equipment;5 = Other livestock assets; 6 = Other Farm Inputs; 7 = Fees; 8 = Other (Specify)*

G.3 If No, to G1, why?.....

.....

G4. What are the main obstacles you face in accessing credit services for your livestock enterprise? 1.....2.....3.....

H4.1: Extension services received

H.4.1. Which type of extension services are you aware of in the area **(circle all that apply)**

1 Breeding (including AI, bull selection, etc)
2 Feeds and feeding
3 Animal health
4 Animal nutrition
5 Fodder establishment

6 Record keeping
7 Financial services
8 Managing livestock enterprise as a business
9 Acaricides/pesticides storage, handling, use and disposal
10 Integrated Pest management
11 Other (Specify) ……

H.4.2: If aware, please indicate the services have received and the source received from

	Type of extension/training received in the last 2 years	**Whether received service/training 1=Yes; 2=No**	**Source/provider**
1	Breeding (including AI, bull selection, etc)		
2	Feeds and feeding		
3	Animal health		
5	Animal nutrition		
6	Fodder establishment		
7	Record keeping		
8	Financial services		
9	Managing livestock enterprise as a business		
11	Acaricides/pesticides storage, handling, use and disposal		
12	Integrated Pest management		
13	Other (Specify) ……		

***Providers code:** 1= Vet; 2 = Ministry; 3 = Research Organization; 4 = Private company; 5 Farmers Field School (FFS); 6=Farm visits; 7 = Other(Specify)

H4.3: How long do you take before selling livestock after de-worming

(Days)? **H4.4:** How long do you take before selling livestock after use of

anti-biotics **(Days)**?

H4.5: How do you dispose of acaricide/pesticide containers after use?
1=Burying; 2=Throw away; 3= Throw in pit latrine; 4=Other Specify

H4.6: What in your opinion are key challenges that you face as a livestock farmer in this area (list in order of

priority?)

1……..

2……..

3……..

4……

G: TRENDS AND IMPACTS ON THE LIVESTOCK SECTOR

E2.8. List the **3 Major factors** which have caused **positive or negative changes** in your livestock production in the last five years?

KEY: √ for positive change; while X represents negative change; and blanks no change *(Mark as appropriate).*

Factors	***Change observed***
1.Rainfall/weather changes	[ ]
2. Change in techniques of livestock farming	[ ]
3. Change in market prices	[ ]
4. Change in community land management	[ ]

5. Change in prices of improved inputs	[ ]
6. Incidences of livestock diseases	[ ]

7. Incidences of HWC	[ ]
8. Others specify ……	[ ]

APPENDIX 7- Assessment forms for reviewing the Amboseli Ecosystem Management Plan (2008-2018) andits Strategic Environmental Assessment

1.2 art 1. AEMP Implementation Assessment

The following tables give an outline of the stakeholder-agreed second 3-Year Activity Plan for implemen-tation of the Amboseli Ecosystem Management Plan. The activity plan details the activities, responsibili- ties, timeframe and milestones necessary for implementation of each management action over the se- cond 3-year timeframe of the management plan.

From the "status codes" provided at the end of each management programme, select the code that rep-resent the current status of the management action and insert the code (numerical) in the "**status of action**" column. Also, give a brief description of progress in the "**description of progress made**" column. Score for the management actions only. **Do not score for the activities** under the actions.

2. Ecological Management programme

Management Action and Activities	*Responsibility*	*Timeframe*												*Mile-stones*	*Status of Action*	*Description of progress made*
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
Objective 1: Critical Wildlife dispersal areas and corridors within Amboseli Ecosystem are secured																
Action 1.1 Support the development of land use plans for individual group ranches in the eco-system														Land evaluation study		
1.1.1 Carry out an inventory of natu-ral resources in the group ranches and conservancies	SRS-SCA, ACC, AWF														2	This has only been competed recently,

Management Action and Activities	Responsibility	Timeframe												Mile-stones	Status of Action	Description of progress made
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
														report compiled by September 2015		as part of AEMP revision
1.1.2 Carry out a land evaluation study for tourism development, livestock production and agriculture	SRS-SCA, ACC, AWF														9	No action
1.1.3 Carry out land use zoning based on the land evaluation study	SRS-SCA, ACC, AWF, GR committees														3	Some plans created, but little implementation. Other plans created, not accepted by communities
1.1.4 Organise group ranch level meetings to disseminate the land evaluation study outputs	SRS-SCA, CWO-Amboseli, ACC, AWF, GR committees														9	No action
1.1.5 Carry out a study on habitat connectivity with focus on the proposed conservancies	SRS-SCA, CWO-Amboseli, ACC, AWF, GR committees														9	No action
Action 1.2 Liaise with District Administration to control charcoal burning and sand harvesting in the AE														A charcoal burning survey report compiled by every end of the year		
1.2.1 Identify and map charcoal burning and sand harvesting hotspots	SRS-SCA, ACC, AWF, GR committees														8	Hotspots might be known anecdotally but not mapped
1.2.2 Disseminate the charcoal burning survey information to the District Environment Committee	SW														9	No action
1.2.3 Enforce the regulation and law on ban on charcoal production	KFS, KWS, County Govt, Regional a;dmin														4	Carried out by community rangers
1.2.4 Monitor and evaluate charcoal production and sand harvesting law enforcement and compliance	KFS, KWS, County Govt, Regional admin														8	Carried out by community rangers
Objective 2: Swamps and River Systems managed and protection in collaboration with stakeholders																
Action 2.1 Carry out a water resource assessment study to discern both water availability in the ecosystem and water requirements for the local community.														A water resour		
2.1.1 Carry out an inventory and map of key water sources	SRS-SCA, ACC,														9	Not done that we are aware

Management Action and Activities	*Responsibility*	*Timeframe*												*Mile-stones*	*Status of Action*	*Description of progress made*
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
														ces		of
2.1.2 Carry out a survey of water users for each key water source	SRS-SCA, ACC, AWF, GR committees													assessment report ready by June 2015	9	Not done that we are aware of
2.1.3 Prepare a report on water resource assessment detailing water availability and demand	SRS-SCA, ACC, AWF, GR committees														9	Not done that we are aware of
2.1.4 Develop water allocation plan across the ecosystem for both domestic and wildlife use	SRS-SCA, ACC, AWF, GR committees														9	Not done that we are aware of
Action 2.2 Support development of Kimana Wetland Management Plan														Gazzettement of Kimana wetland management plan by December 2015		
2.2.1 Gazette Kimana wetland management plan	KWS, WRMA, AWF, WRUAs committees														9	Not done that we are aware of
Action 2.3 Support establishment of soil and water conservation measures to reduce water pollution in AE's water bodies														Water quality and quantity monitored semi-annually		
2.3.2 Monitor water quality and quantity at key water points	SRS-SCA/ WRMA														5	Done by certain research projects and hopefully by WRMA, but not sure if done properly
Action 2.4 Carry out Environmental Audits of water projects in the ecosystem to determine the social and environmental impact of water abstraction														Environmen		
2.4.1 Collate and share water related	WRMA, KWS														9	Not done

Management Action and Activities	Responsibility	Timeframe												Mile-stones	Status of Action	Description of progress made
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
information from all the stakeholders and researchers and identify the gaps														tal Au-dit		that we are aware of
2.4.2 Carry out an environmental audit of Nol Turesh and other water supply systems	SRS-SCA, WRMA													re-port for all river sys-tems com piled by De-cem ber 2015	9	Not done
Objective 3: Conservation of AE threatened large mammal species is enhanced																
Sub-Objective 3.1: Elephant monitoring and management enhanced																
Action 3.1.1 Carry out an elephant-habitat modelling study to determine the elephant carrying capacity of the ecosystem																
3.1.1.1 Carry out an ecosystem-wide habitat assessment study	SRS-SCA, ATE, ACC/ARCP														8	Not done that we are aware of
3.1.1.2 Develop computer simulation models of elephant-habitat interactions	SRS-SCA, ATE														2	From what we understand an ATE-affiliated student is working on this
Action 3.1.2 Collaborate with ATE to ensure that long term elephant monitoring and research in the ecosystem is maintained														Ele-phan t scien en-tists de-ploy ed to ANP by June 2015		
3.1.2.1 Recruit local young elephant scientists and deploy them for internship with the AERP	H-HC														?	
Sub-Objective 3.2: Conservation of threatened predators enhanced																
Action 3.2.1 Monitor AE top carnivores to determine population trends, distribution and movements														Car-ni-vore		
3.2.1.1 Develop monitoring protocols	SRS-SCA														?	Not done

Management Action and Activities	*Responsibility*	*Timeframe*												*Mile-stones*	*Status of Action*	*Description of progress made*
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
for cheetah, hyena and wild dogs														monitoring		that we are aware of
3.2.1.2 Monitor population status and distribution of cheetah, hyena and wild dogs	SRS-SCA													protocols developed by December 2015	?	Not done that we are aware of
Action 3.2.2 Identify potential carnivore conservation zones using available information																
Action 3.2.3 Establish a GIS based human-carnivore conflict database														A functional database in place by March 2015		
3.2.3.1 Develop a GIS based data collection tool	SRS-SCA, CWO-Amboseli, ACC														5	Data is collected by BLF, MWCT, and perhaps OGR community rangers, and stored in databases. IFAW is working on collective database but not yet supported by all institutions collecting carnivore-conflict data
Action 3.2.4 Support disease surveillance, monitoring and control														Wildlife disease monitored continuously		
3.2.4.1 Collect and analyse samples for disease pathogens	SRS-SCA, H-Vet														?	
3.2.4.2 Support Ministry of Livestock in its efforts to vaccinate domestic dogs against rabies	SRS-SCA, H-Vet														?	Not done that we are aware of
Objective 4: Ecological monitoring and research information dissemination is strengthened																

Management Action and Activities	Responsibility	Timeframe												Mile-stones	Status of Action	Description of progress made
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
Action 4.1 Establish a KWS research sub-station at ANP headquarters														More KWS researchers deployed to ANP by June 2016		
4.1.1 Deploy more research scientists to ANP	SRS-SCA, DDBR&M						■	■	■						?	
4.1.2 Equip the KWS Research with facilities and equipment required to enhance an ecological research and monitoring system;	SRS-SCA			■	■	■	■	■	■	■	■				?	
Action 4.2 Establish a database of research on Amboseli Ecosystem														A digital research library compiled by December 2016		
4.2.1 Carry out a comprehensive inventory of research work that has been carried out in Amboseli	SRS-SCA		■	■	■	■									9	Not done that we are aware of
4.2.2 Collect all the available published and unpublished research documents on Amboseli	SRS-SCA			■	■										9	Not done that we are aware of
4.2.3 Develop a digital research library for Amboseli documents	SRS-SCA			■	■	■	■								9	Not done that we are aware of
Action 4.3 Establish a transboundary research coordinating committee to facilitate information sharing and implementation of cross border activities																
4.3.1 Organise a transboundary research meeting for researchers in the Amboseli-Kilimanjaro ecosystem	SRS-SCA, ACC, ATE, AWF	■	■	■	■	■	■	■	■	■	■	■	■		9	Not done that we are aware of
4.3.2 Develop terms of reference for the transboundary research coordinating committee	SRS-SCA, ACC, ATE, AWF									■	■				9	Not done that we are aware of
4.3.3 Hold regular research coordination meetings	SRS-SCA, ACC, ATE, AWF	■	■	■	■	■	■	■	■	■	■	■	■		9	Not done that we are aware of
Action 4.4 Monitor the range condition and develop measures to improve the poor range condition within the Amboseli Ecosystem														Vegetation monitoring plan		
4.4.1 Establish a biomass monitoring programme using remote sensing data	SRS-SCA								■	■	■	■	■		?	
4.4.2 Establish ways to monitor impacts of elephants on woody vegetation in and outside ANP	SRS-SCA, ARCP	■	■	■	■										?	

Management Action and Activities	*Responsibility*	*Timeframe*												*Mile-stones*	*Status of Action*	*Description of progress made*
		FY 2014-15				FY 2015-16				FY 2016-17						
		1	2	3	4	1	2	3	4	1	2	3	4			
4.4.3 Monitor elephant impacts on the woody vegetation semi-annually	SRS-SCA, ATE, ACC/ARCP													es-tab-lishe d by June 2015	?	
4.4.4 Map out all invasive plant species and degraded areas in the AE	SRS-SCA														9	Not done
4.4.5 Establish control and eradication measures to manage the spread of invasive species and associated impacts	SRS-SCA														9	Not done
4.4.6 Establish ways of improving range condition e.g. grass banks	SRS-SCA														3	As far as we understand there are some limited activities underway on Kuku and MGR, and some things planned for OGR. But there is nothing on a large scale
Action 4.5 Carry out priority applied research in support of Amboseli Ecosystem Management														A Sci-en-tific work shop or-gan-ised by June 2015		
4.5.1 Organise a research meeting to identify priority research areas for Amboseli	SRS-SCA, ATE, ACC, AWF														9	Not done that we are aware of
4.5.2 Create awareness on identified research opportunities through the internet	SRS-SCA, ATE, ACC, AWF														9	Not done that we are aware of

*Status codes are below (two or more of these stages can be achieved at the same time):

1. Action completed
2. Substantial progress (action is making progress in ALL areas)
3. Some progress (action is making progress in SOME areas)
4. Routine activity that is carried out regularly
5. Routine activity but not yet imple-mented as required
6. Planning has been carried out but there hasbeen no implementation
7. Planning is in progress for that action
8. Follow-up is reactive (some progress madebut there is no planning)
9. Not commenced

Appendix 8: Noonkotiak Community Resource and Cultural Centre-
Concept Ideas

Noonkotiak has the potential to be a one of a kind community centre that incorporates best practices from around the world. It is proposed to be a center for conservation in the Amboseli ecosystem that serves community needs, showcases culture (museum/educational programs), provides community and tourist educational opportunities, provides eco/cultural tourism, sustains enterprise and becomes a home for ACC's scientific research as well as housing AET offices. Ideally, ACC should maintain strategic leadership roles in this community centre so that it becomes a tangible project that can build name recognition for ACC and provide a home for researchers.

1. Determine if a community resource and cultural Centre are needed.
2. If there is interest to move forward with the community resource and cultural Centre, with a proper plan to guide the development in a manner that can then be used to raise funds to build the centre and run it until it's sustainable.
3. For this to work, it needs to function at a very high level with beautifully done structures and a long- term plan for sustainability. However, the structures need to be fairly rustic to blend with the envi- ronment, like Lalenok or the enkang.

General Concept for the Community Centre

Four main themes are suggested as listed below:

1. **Green/Beautiful/Functional Design** - Entire Centre must be cohesive, beautiful, sustainable, green design with renewable energy sources/easy for community to maintain and fix and functional for many uses. This should be something we can model in other areas where it makes sense.
2. ***Educational Programs***

i. *Library* for the community and a research library with a repository of findings of all research donein the Amboseli ecosystem.
ii. *Cybercafé* – with computers and WIFI.
iii. *Large and small meeting hall*- with ability to cater for big and small community meet- ings/workshops
iv. *A school*, probably pre-primary, the women at Enkang requested for the school which is best while they are working. Waldorf type system works well in integrating traditional culture with wildlife and always interests visitors.
v. *Park visitation program* - Bring kids/families into park for safari experience/workshops – opportuni-ty to see wildlife in new ways
vi. *Kirrinkol Youth Program*- Engage teens/young adults in research/internship and link them with visit-ing or resident scientists as well as provide Scholarships to Bright-needy students from the commu- nity giving them an opportunity to purse their education. (EU project to engage an Education Out- reach Officer, who can help.)
vii. *Adult training* on literacy, governance, leather tanning, HWC mitigation. For example- ATE does training workshops on interacting with elephants.

3. **Research/Conservation Centre**

i. *Offices* for AET, ACC and ACP. well designed and equipped offices
ii. *Research Centre* complex for Resource Assessors, researchers, long-term research students for data consolidation and analysis with adequate space

iii. *Permanent, comfortable, quality lodging* space for researchers, students and staff- Permanent, comfortable, quality structures for stay on site staff, students and researchers. Initially can use current ngaji and high-end tents if suitable rustic toilet and shower facilities are built within the boma fence. Also need to be careful not to have too great a contrast or overlap between smarthouses and the cultural enkaji.

iv. Workshop/studio

v. Outdoor group eating area with a canopy for hot days.

4. Eco/cultural tourism

i. Traditional Maasai homestay cottages alongside the enkaji

ii. *A few high-end cottages or houses for individuals and groups/families/student groups* (see http://tsavoconservancy.com/visit -us/ndovu-house/) A combination of current enkaji and tents would probably be OK if rustic toilet and shower facilities are constructed in suitable places.

*iii. Kitchen and dining area***-** a spacious well ventilated and equipped kitchen to cater for different in-terests including everyday meal provision to the offices, self-catering guests and large meetings meals. *N/B This should be an Income generating venture for the women*

iv. *Toilets*- the current toilets are too far away from huts with just a hole in the ground. This is not going to work for most international guests. Enough and closer toilet and shower facilities need tobe created so people don't have to walk far in the dark. All toilets should have seats. Running wa- ter is nice if possible. (See Twala.) Keeping it eco-friendly is important - solar/biofuels etc. and making it look rustic and open air while clean.

v. *Campsite* between current offices and Enkaji

vi. *Maasai Museum/ lectures:* to potentially show films and videos. Have already obtained a full set ofAlan Root films in both English and Swahili.

vii. *Shop:* to sell local arts, crafts, and relevant books.

viii. *cultural activities*: Plant walks, herding, milking, sterilizing gourds, interpreted elder stories, bead-ing and the meanings of the colors and designs, traditional dance and its interpretation, visits to scientific projects/restorations, etc.

N/B We need to respect women's self-help group within financial planning and management.

5. Sustainability Plan

I. Charge the following fees.
   a. Fees to visit
   b. Fees to stay
   c. Fees for meeting hall
   d. Fees for everyone but community to visit museum (free for community)
   e. Fees for visiting research institutions/scientists
   f. Fees for visiting tourist groups
   g. Some support from community and nearby lodges?

2. Branding

Decide how we are going to spell Noonkotiak (Noongotiak?) so we are consistent. The sign that was created and is at Noonkotiak spells it with a K – Noonkotiak. Maybe pitch this back to the community and get the correct spelling then create a logo that can be used on signage.

Management

This venture will need high-level managers for various components – Research, Hospitality, Museum andEducation programs. Additionally, the manyatta needs at least two very good English speakers to man- age the women enterprises and the cultural components. This is what Twala has and it makes the expe- rience so much richer for English speaking guests. We would probably not stay at Twala without this. This will work under the hospitality manager and may require hospitality training.

Landscaping

Although it's a cultural manyatta, some shade trees would be nice in certain areas. Pathways to toilets etc. Need to balance real manyatta feel with some comforts. The chain link fence round the enkang needs to be hidden by a brush boma fence. The bush at the Centre of the boma needs to be moved to one edge and at least goats, ideally in time cattle, should be kept there at night and milking become partof a visitor experience

Pricing

The women need to be guided on reasonable pricing for the homestays, currently a room in a hut is $50per person. So for a three room hut it's $150. That's way too much for what they offer.

Training Needs

Hospitality, Interpretation and Sales.
Recent guests noted that they were uncomfortable with how aggressive some of the women were in selling products. Although very friendly, the women grabbed at us and put things on us before we could say no. It made for an uncomfortable transaction and turned several guests off. Some training in work- ing with international guests would be good. Again, Twala does a great job with this. They are very hands off - just letting guests shop on their own.

Marketing

We'll need a way to market the centre so the right audiences. If the Amboseli National Park Visitor Cen-tre goes in nearby, that might help. Lodges could also bring guests for day visits.

General Needs

WiFi - needed for AET/nice
for guestsFence around
manyatta.

Activities

Nature walks nearby - medicinal
plants/birdsCarrying water and
firewood
Learning
to bead
Milking
goats
Plastering
houses
Learn about enterprise if they develop more: bee keeping?

Potential Donors

- USAID
- Kenya Government
- LCAOF
- Ambassador funds
- GEF
- Norwegian bank
- Nairobi museums
- Nairobi wealthy individuals
- Lodges in Amboseli area?
- Other NGOs? (Do we want to do this?)
- Universities to help pay for research centre?
- Zoos? Research centre
- Smithsonian – for museum and/or part of research centre
- Individual donors

Appendix 9: Amboseli Conservation Program Paper, 7th April, 2018: THE AMBOSELI ECOSYSTEM: STATUS, CHANGES AND RECOMMENDA- TIONS FOR THE AMBOSELI ECOSYSTEM MANAGEMENT PLAN 2018-2028 (David Western, Victor Mose, David Maitumo, Caroline Mburu, Eric Ochwangi, Sakimba Kimiti and Bernadette Thomas.

The information provided in the report has been prepared specifically for the Amboseli Ecosystem Man- agement Plan and is not available for other uses without consultation
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INTRODUCTION

This report is prepared for the Task Force overseeing the Amboseli Ecosystem Management Plan (AEMP)2018 to 2028. The report updates the original Amboseli Conservation Program (ACP) report titled The Ecology and Changes of the Amboseli Ecosystem: Recommendations for Planning and Conservation (2007).

The 2007 report defined the Minimum Viable Area (MVA) for conserving the integrity of the ecosystem, based on three decades of ecological monitoring by ACP. The report also pinpointed threats to the productivity and viability of the Amboseli ecosystem and national park. The main threats included farm- ing, settlement, fencing, subdivision, water extraction from rivers and swamps, the loss of seasonal graz-ing grounds and drought refuges for livestock and wildlife, and heavy grazing pressure which is reducing the productivity and resilience of the ecosystem. The threats also included bush meat poaching, a breakdown of migrations and compression of wildlife (elephants especially) into Amboseli National Park,and the resulting loss of habitat and species diversity. The ACP report further recommended specific actions to combat the threats and the creation of Amboseli Ecosystem Trust (AET) to oversee the imple- mentation of the plan.

The Minimum Viable Area was subsequently adopted as the planning framework for the AEMP and AET was set up to coordinate the plan. Several developments since the adoption of the AEMP 2008-2018 call for a different approach to the AEMP 2018-2022 planning process.
First, it became evident that AEMP was largely a wildlife conservation plan and ignored the land use changes and rangeland degradation underway. The plan also lacked legal teeth to enforce the zonal plans and prevent adverse development. The first draft of the plan was rejected by the community for lack of local engagement and, after revisions from group ranch representatives, was approved and co- signed by the Amboseli and Tsavo Group Ranch Conservation Association (ATGRCA) and Kenya Wildlife Service (KWS). The AEMP shortcomings in addressing other forms of lands use and securing legal en- forcement were addressed through a Strategic Environmental Assessment (SEA), undertaken by AET in 2011. The SEA report spelled out the steps needed to complete a multi-sectoral plan for the ecosystemin compliance with the requisite national policies and legislation governing land use and natural re- sources. Because the amended Environmental Management and Coordination Act (EMCA) had yet to be enacted in line with the 2010 Constitution, the AEMP was legally registered under the Wildlife Act 2013, pending updating in line with the SEA report and registration under EMCA.

Second, since the adoption of AEMP 2008-2010, the passage of the Constitution of Kenya 2010 man- dates that county governments are responsible for spatial planning. This necessitates the Kajiado Coun- ty's participation in the ecosystem planning processes and its endorsement of AEMP 2018-2028.
Third, the Wildlife Conservation and Management Act 2013 recognizes and devolves a series rights and responsibilities for wildlife management to private and community land. The act covers regulations for the registration, planning and management of wildlife conservancies, which will need to be incorporatedinto group ranch and AEMP plans.

Fourth, the Community Land Act 2016 requires all community lands to complete a full registration of eligible members, conduct land use plans and register the membership as a community land owner as- sociation. The provision of the Act and the Kajiado County spatial planning mandate places the primary responsibility for planning the new AEMP in the hands of the six group ranches covering 90 percent of the ecosystem, coordinated by AET.

This report updates the ACP 2007 report, taking into account the new mandates over community lands and changes to the ecosystem over the last decade. Specifically, the report details rangeland degrada- tion caused by land subdivision, sedentarization and heavy grazing. The degradation has intensified droughts, precipitated heavy losses of livestock and wildlife in 2009, and intensified human-wildlife con- flicts. Although the livestock and wildlife populations have since rebounded, they have failed to recover to pre-drought levels and face further persistent droughts.

The report distills the results of the ACP ecosystem monitoring updated to 2017, highlights the key changes underway, modifies the MVA boundaries, identifies the main threats to the ecosystem, and recommends conservation and restoration measures.
Most of results presented in this report have appeared in various publications. We refer to these publi- cations and other research cited for more detailed accounts of the methodology and findings.

MEASURES OF ECOSYSTEM HEALTH AND TRENDS

The status of savannah ecosystem is best summarized by the productivity of plants, livestock and wild- life. Production (the annual biomass yield of plants and animals) gives a common measure for all species and, summed for all species, measures the trends over time in relation to rainfall, human activity and other factors. We first present data on all large herbivores to look at the overall production trends across the 8,500 km² of eastern Kajiado since 1973. We then break down the total production by live- stock, wildlife and feeding guilds (grazers, browsers and elephants-a mixed feeder) to detect similarities

and differences in trends. Next, we look at changes in individual species to track changes in populations over the last four decades.

We then look at the loss of open grazing lands due to subdivision and sedentarization over the last few decades and define a reduced Minimum Viable Area for maintaining the integrity and viability of Am- boseli's migratory wildlife and livestock populations. Next, we look at what accounts for declines in ani- mal production and plant biomass, the impact of the changes on the ecosystem and national park, and the implications for conservation. Finally, we update the recommendations for the Amboseli Ecosystem Management Plan 2018-2028, based on the findings.

We have not included large carnivores in this report. Lion Guardians, Big Life and other organizations with ongoing research, conservation and conflict mitigation programs are best placed to report on large carnivores. We should note, however, that the viability of the carnivore populations, and the extent of human-wildlife conflict, hinge on the productivity of the plant community and large ungulate popula- tions. The steady decline in wildebeest and zebra populations since the 1990s, culminating in the precip-itous drops in the 2009 drought, saw a steep rise in livestock predation and reprisals.

HERBIVORE PRODUCTION

Figure 2 shows the long-term changes in the production of large herbivores for the period 1973 to 2017. The key features are the large loss in production in the drought of the mid-1970s, a steady increase to a peak in 1990s, a drop in the 2000 drought, a steadily declined leading to a precipitous drop in 2009, fol- lowed by rapid recovery. **Some *Figures referred to here are in the plan.***

Figure 2: Temporal trends in total production of large herbivores in the Amboseli ecosystem for the pe- riod 1973 to 2017. The shaded bands are the point wise 95% confidence limits. The red line shows the most significant change point (1986-01-06) based on a likelihood function.

Figure 3 shows the production trends for livestock and wildlife since 1973. Livestock (which accounts for 77% of the total production) and wildlife are both significantly correlated with total production (r=0.97, p<0.0001 and r=0.73, p<0.001 respectively), and with each other (r=0.53, p<0.01).
Figure 3: Trends in livestock and wildlife production in the Amboseli ecosystem from 1973 to 2017 The shaded bands are the pointwise 95% confidence limits.

Figure 4 shows the breakdown in wildlife production by guild. Production responses differ between grazers, browsers and elephants over the four decades. The grazers, which account for 62% of produc- tion, closely match the combined herbivore production (r=0.97, p<0.0001) shown in Figure 2. Browser production, which accounts for 30% of total production and is significantly correlated with total produc- tion (r =0.45, p<0.01), shows a small upward trend in the 1970s, levels off through to the 2000s and thenincreases once more. Elephants, which account for 8% of total production and show no correspondence to total production (r=0.16, p=0.251), declined steeply in the 1970s due to ivory poaching, followed by a steady recovery from the 1980s, before shallowing off in the 2000s. Grazers and elephants are not sig- nificantly correlated (r =0.05, p=0.75). Elephant production is, however, significantly correlated with browser production (r=0.28, p=0.045)

Figure 4: Trends in browsers, grazers and elephant production for wildlife species in the Amboseli eco- system from 1973 to 2017. The shaded bands are the point wise 95% confidence limits.
Figure 5 shows the breakdown in livestock production responses. Cattle account for 83% of livestock production and explain the close correspondence with both the total herbivore production and livestock production (r=0.98, p<0.0001). Cattle increased significantly from the 1973 drought (r=0.333, p=0.0135) to the late 1980s, followed by a prolonged significant decline (r = 0.4, p=0.0122) to the lowest produc- tion value in the 2009 drought. Sheep and goats, which showed no significant correlation with overall production (r=0.27, p=0.06), increased significantly throughout the four decades despite a slight down- turn in the 1990s (r=0.484, p <0.0001). Sheep and goats showed little loss in the 1973 drought but a steeper drop in the 2009 drought, though noticeably less so than cattle. Donkeys oscillated until 1990,

fell steeply through the 2000s (r=0.27, p=0.062) and showed sharp losses in the 1970s and 2009 drought.

INDIVIDUAL SPECIES TRENDS

Figure 6 shows changes in individual species of wildlife and livestock. Table 1 shows the significance in production trends of all species between 1973 and 2017. Zebra (r = 0.68, p< 0.001) and wildebeest (r = 0.68, p< 0.001) are closely correlated to the overall herbivore production changes and to each other (r = 0.42, p< 0.01). Neither show a strong decline in the 1970s droughts, but both fall steeply in the 2009 drought. Over the four decades, zebra show no significant decline, but wildebeest populations fall steep-ly and significantly (Table 1).

Kongoni show a decline in the 1970s, followed by a levelling off through to 2000s, then a sharp declineto levels far below the 1970s levels. Thomson's gazelle shows a decline through to 2000 and a subse- quent increase to 1970s populations. Grant's gazelles hold steady through to 2000, show a slight subse- quent decline and then recovery towards 1970s levels.

Impala, Oryx, eland, gerenuk and lesser kudu all show a significant decline. Giraffe shows a steady de- cline from 1990 but a recovery in the 2000s to levels below the starting population. Rhinos, regularly recorded in the 1970s, were heavily poached and no longer detected after the late 1970s. The last two Amboseli males were translocated to a rhino sanctuary in Tsavo West in 1995. A small closely-guarded population survives in the northern Chyulu Hills. Buffalo show a high variance due to over-dispersion. Except for a small population in the Chyulu Hills, the buffalo population is confined to the Amboseli ba- sin. Here regular monthly total counts give a detailed picture of buffalo and elephant trends. The month-ly total counts show buffalo production fell sharply in the drought of early 1970s, rose steeply to a peak in the 1990s, fell steadily in the 2000s and showed a steep decline in the 2009 drought. All other species show a decline in populations since the 1970s, with the exception of elephant and shoats, which in- crease significantly, and lesser kudu, which show no change (Table 1).

CHANGES IN HUMAN ACTIVITY

Figure 7 shows the changes in the numbers of occupied Maasai huts, which traditionally changed loca- tion with the seasonal migrations. Thatched and tin roofed huts reflect permanent settlement. The number of occupied traditional huts increases from 6,000 to 7,000 in the early 1970s to a peak of 15,000in 1990, before falling steeply to under 2,000 in the 2000s. Thatch and tin-roofed huts increase from 3,000 in the early 1970s to a peak of 20,000 in the 2000s. A decline in the number of both traditional mobile and permanent huts is associated with the droughts of 1970s and 2009, with an additional de- cline in the mid-1990s when many families moved temporarily across the border into Tanzania to take advantage of good grazing at a time of poor rains in Kenya.

Figure 7: Changes in human settlements in the Amboseli ecosystem from 1973 to 2010. The shaded bands are the point wise 95% confidence limits.

The traditional Maasai huts used as temporary settlements by mobile pastoralists are replaced by thatchand tin huts as the growing number of families take up permanent residence after 1990s. The change in the use of houses from the traditional "ngaji" of mobile pastoral families in the 1970s to permanent homesteads is reflected in the sharp drop in donkey numbers (Figure 5) once they were no longer used for moving household through the season. The increase in cattle following the 1970s drought peaks in the 1990s and declines sharply after the 1990s, corresponding to a strong switch to sheep and goatherds associated with sedentary households and growing dependence on a cash economy. Figure 8 shows the growth and spread of small farms across the Amboseli ecosystem and Figure 9 the spread of settlements. Farms were largely confined to the wetter uplands north of Amboseli and slopes of Kiliman-jaro in the 1970s, covering 12% of the ecosystem in total. By the 2000s small farms were recorded in39% of the grids across the ecosystem, including the lowland swamps and Lolterish River east of Am- boseli National Park.

Figure 8: Small scale farms spread from the higher elevations and rainfall areas to the north and south, then extend to the lowlands swamps and along the Lolterish River and finally stretch along the Loi- tokitok pipeline. The grids with farms increased from 925 km² (11.9 % of the ecosystem) in the 1970s to 3025 km² in the 2010s (38.9% of the ecosystem).

Figure 9: Human settlement spread in the Amboseli ecosystem in the 1970s and 2000s

ECOLOGICAL CHANGES IN AMBOSELI NATIONAL PARK

As noted in the ACP background report and Western (2007), the major trends in habitat change sincethe 1950s have continued (Figure 10). The woodlands have shrunk from covering 30% of the Amboseli Basin to a few scattered remnants covering less than 5%, mainly in fenced enclosures. The woodlands have been replaced by grasslands and bushlands and the swamps have increased by a half (Western, 2007).

Figure 10: Changing proportion of five major Amboseli habitats from 1950 to 2017.

The biomass density of trees, shrubs and grasses aggregated for all habitats has also fallen steeply since the 1970s (Figure 11). Herbs increased until the 1990s then declined steadily.

Figure 11: Biomass density of trees shrubs, herbs and grasses aggregated for all habitats.

Other indicator of a loss of ecological complexity include plant and large herbivore diversity and domi- nance (Figure 12). The decrease in the relative abundance of grasses and rising dominance of a few spe- cies reflects a three-fold increase in grazing pressure (Appendix). The decrease in the diversity of large herbivores reflects the heavy browsing pressure in the Amboseli National Park and a reduction in habitatdiversity (Figure 13 Figure 12: Dominance and diversity of grass species in the Amboseli Basin and of large herbivores in the Amboseli ecosystem 1974-2014.

Figure 13: The reduction in herbivore diversity tracks the reduction in habitat diversity in the Amboseli Basin due to heavy grazing and browsing pressure (Appendix).

CAUSES AND IMPLICATIONS OF CHANGE

The causes of ecological change in the Amboseli ecosystem and National Park are summarized in the Ap- pendix 1, based on published studies and updated monitoring data. The main cause of the declining live-stock and wildlife productivity in the Amboseli ecosystem is a three-fold increase in grazing pressure. The main cause of the loss of habitat, plant and herbivore diversity in Amboseli National Park is the largeincrease in browsing pressure. The increase in grazing and browsing pressure from a variety of factors causing the loss of land available to pastoral livestock and wildlife, and to persistent year-round use of the remaining open lands. The factors contributing to the increased pressure on the rangelands are giv- en in Table 2.

Causes of ecological decline

- Dry land farming
- Wetland irrigated farming
- Sedentary pastoralism
- Land use segregation effects
- Loss of drought refuges
- Loss of rangeland productivity and recovery
- Rising drought frequency and intensity
- Poaching and elephant range compression
- Habitat change

Table 2: Factors contributing to the increasing grazing and browsing pressure on the Amboseli range- lands and national park, to the decline in plant and animal production and diversity, and to an increasein human-wildlife conflict.

The decline in plant production due to increased grazing pressure has intensified the seasonal cycle and apparent frequency of droughts. Figure 14 shows that, measured by rainfall, the seasons have changed

insignificantly. Based on pasture availability, the dry seasons and droughts (measure by one and two standard deviations below average) have intensified and deepened, most strikingly after the mid-1980s change point for herbivore production.

Figure 14: Seasonality based on rainfall has not changed significantly since the 1970s. Seasonality based on pasture shortfall has deepened and intensified strongly since the mid-1980s.

The intensified grazing pressure and seasonality is reflected in livestock condition, milk yield and market prices of cattle (Figure 15 and 16 below). The fluctuations are becoming more pronounced as heavy grazing exaggerates rainfall seasonality, causing a boom and bust cycle in market prices of cattle

COMMUNITY PERCEPTIONS OF CHANGE

A study of nomadic, semi nomadic and sedentary communities shows perceptions of change over thelast four decades closely matching the ACP monitoring results (Sakimba et al. 2017). Nearly 80% of re- spondents reported a sharp decline in pasture availability. The decline is most pronounced in Kimana where 50% of the grazing areas has been lost. The decrease is attributed to a growth in human popula- tion, expansion of cultivation and settlements, land use changes and reduced rainfall. The results show that the average household herd size has declined due to the loss of grazing lands and recurrentdrought. Livestock holdings in nomadic sites (40.8 Tropical Livestock Unit (TLU)) are almost twice that of sedentary sites (22.9 TLU).

Pastoralism remains an important livelihood for the majority of households in Amboseli area. The resto- ration of herd mobility and grazing management are considered key coping strategy for sustaining live- stock production in the Amboseli ecosystem. Participatory approaches to resource monitoring and plan- ning as well as assessing the causes of change are seen as central to good land management. Improving local livestock breeds to secure higher economic returns from sales and diversification of livelihoods is seen as vital for improving income.

CONCLUSIONS AND RECOMMENDATIONS

The aim of AEMP 2008-2018 was to maintain the viability of the Amboseli migratory wildlife popula- tions. The plan recognized that pastoral herders also moved seasonally in much the same way as wildlife in order to maintain the productivity of their herds and minimize exposure to droughts. To this end, AEMP defined a Minimum Viable Area for sustaining wildlife and pastoral herds, the threats to the integ-rity of the ecosystem, and proposed specific mitigation measures.

Support for AEMP has strengthen over the past ten years with the establishment of the Amboseli Eco- system Trust, the adoption of the Strategic Environmental Assessment, Kajiado County support of the plan, the gazettement of the plan under the Wildlife Act, and funding from NGOs, multilateral and bilat- eral agencies and a grant from the Global Environmental Facility.

The activities of NGOs, KWS, the tourism industry and group ranches have subsequently been integratedand consolidated under AET and coordinated by various committees. The committees include the Am- boseli Tsavo Group Ranch Scouts Association, a Human-Wildlife Conflict coordinating group and, most recently, the Rangeland Division. The Rangeland Division promotes and integrates group ranch land use, grazing and restoration plans.

The renewal of AEMP for a further 10 years shows the commitment of landowners, KWS, NGOs, the tourism industry and researchers to a viable Amboseli ecosystem. The new plan must, however, take into account the recommendations of the SEA report and widened its scope to include livestock devel- opment, rangeland and water management, agriculture, permanent settlements, and allow for urbani- zation and new enterprises.

AEMP 2018-2028 must also address the changes over the last decade documented in this report and elsewhere. The threats detailed in the ACP 2007 report have intensified since and include subdivision, agricultural expansion, water extraction for farms and development, a loss of seasonal

pastures, and the

growing impact of grazers and browsers on habitat, species diversity, plant production and on livestock and wildlife populations.

Poaching has declined to manageable levels since 2008 due to the formation of a large well-managed community ranger force. Human-wildlife conflict has, however, risen sharply to the point of undercut- ting gains in community-based conservation.
The social, economic and demographic changes underway among the predominantly pastoral communi- ty of the Amboseli ecosystem are causing fundamental changes in livelihoods, both out of necessity and choice. In the long run, social and economic development is likely to relieve the pressure on land. Meanwhile, for the many pastoralists who remain herders, land subdivision, sedentarization and a lossof seasonal grazing decreases their mobility, herd sizes and resilience to drought (Sakimba et. al, 2016). The same pressures pose severe threats to wildlife in the Amboseli ecosystem and national park and intensify competition between people and wildlife over shrinking space and resources.

The changes detailed in this report, bolstered by the publications cited, have transformed Amboselifrom a savannah ecosystem dominated by free-ranging wildlife and livestock populations driven largely by rainfall, to a highly transformed landscape shaped by human activity.

The 2009 drought was far more severe than the 1970s droughts due to the restricted space and pasture available to livestock and wildlife. Over 95 percent of the wildebeest, 60 percent of the zebra and cattle, and a quarter of the elephants died in the course of six months. Wildebeest numbers dropped to 200and would unlikely have recovered without the immigration of herds from Tsavo West and Ngaserai in Tanzania. The immigrations underscored the importance of the meta-ecosystem connections identified in the MVA for Amboseli in sustaining the viability of the Amboseli wildlife populations.

Subdivision, farming, towns and villages have greatly reduced the area available for wildlife and pasto- ralism. The Kaputei - area is heavily settled and fenced and the migratory wildlife populations have col- lapsed. Namelog and Kimana swamps, the Lolterish River down through the Soit Pus Swamp and areas around Iltilal has also been subdivided, settled and farmed. These developments have substantially re- duced the areas in eastern Kajiado still open to wildlife and mobile pastoral herds.

Fortunately, most of the areas used by the migratory wildlife populations of Amboseli lie in the rain shadow of Kilimanjaro and the Chyulu Hills and are ill-suited to farming. If AEMP 2018-2028 focuses on this remaining open landscape reserved for rotational livestock use, it should be possible to restore the Amboseli pastures and habitats and conserve a viable large herbivore and carnivore ecosystem. Mining and other commercial enterprises that impede the migrations will need to be excluded.

The land use changes call for reducing the Minimum Viable Conservation Area (MVCA) to exclude heavi- ly settled and farmed areas and focusing on the open rangelands still supporting free-ranging wildlifeand livestock. The redefined MVCA is given in Figure 17. The justification is given in Appendix 2.

Figure 17: The refined Minimum Viable Area for sustaining free-ranging wildlife and livestock popula- tions in the Amboseli ecosystem showing the vital connections to adjacent wildlife areas.

Although most of the elephant movements of the Amboseli population fall within the Minimum Viable Area shown in Fig 17, satellite tracking undertaken by IFAW shows elephants ranging into Tanzania and across to the Rift Valley. Given the extensive movements, the Amboseli elephant population should be planned within the Borderland Conservation Initiative framework and national elephant strategies for Kenya and Tanzania, aimed sustaining a viable meta-population.
Ecosystem planning and coordination framework

At the time AEMP 2008-2018 was drawn there was no governance structure in place to oversee

and co- ordinate the plan. AET was set up nearly three years after the launch of the plan, faced considerable re- sistance from conservation organizations, lacked funds for implementation and took time to establish itself. Subsequent threats to the Amboseli ecosystem, including a Nairobi Metropolitan Area on the bor-

der of the park, a public highway cutting the migration routes and a rush to develop new lodges, gave AET a central role in coordinating the responses, overseeing the Strategic Environmental Assessment and the gazettement of AEMP. The need for an integrated land use and natural resource plan pointed out in the SEA report further reinforced the role of AET. Recognizing the role of the Kajiado County in spatial planning and the communities in land use plans under the Community Land Act, AET has as- sumed the central role in planning and coordinating the AEMP for 2018-2028.

The revised AEMP must confront the biggest threats to the seasonal movements of pastoral livestock and wildlife, subdivision, sedentarization, and the breakdown of traditional grazing rotation causing landdegradation and falling productivity of the rangelands. Alarmed by the loss of pastoral lands following the subdivision of Kimana, the area MP, MCAs and community leaders urged the group ranches to halt subdivision and look at alternatives for keeping the land open for livestock production. The rapid deteri- oration of pasture caused largely by a breakdown in grazing management has spurred efforts to restore governance of seasonal grazing practices, pasture productivity and livestock marketing.

A number of group ranches have begun to conduct land use plans, re-establish traditional grazing com- mittees, rotational herding practices and establish conservancies in response to the worsening range and livestock conditions. The plans include restoring degraded lands through olopololi (grass banks), resting and rotation of pasture use, soil erosion control measures and designated wildlife conservancies. Integrated group ranch plans offer the best hope of avoiding a Kimana-like loss of pastoral lands and finding space and a place for wildlife in the pastoral rangelands. Ogulului and Kuku have recently com- pleted land use and grazing plans and embarked on restoration plans funded by Just Diggit. Mbirikani is in the final stages of completing its own land use and grazing plans. Selengei has embarked on similar plans and Rombo is following suit. All the group ranches in the Amboseli ecosystem have agreed to inte- grate and coordinate their land use, grazing and restoration plans through the Rangelands Division of AET.

The group ranch plans integrated under the umbrella of AET should constitute the bulk of the AEMP 2008-2018. The group ranch plans will, however, need to incorporate a viable ecosystem-wide wildlife and biodiversity conservation plan in collaboration with KWS and conservation partners. KWS must drawup an Amboseli National Park plan taking into account AEMP plans and specific threats to wildlife, the free movement of migratory species, threatened and endangered species management plans, human- wildlife conflict, wildlife conservancies and tourism zoning and management. AEMP 2018-2028 should also spell out the role of AET and partnering organizations in overseeing and implementing the plan. Theplan should also define the role of the Nonkotiak Centre in coordinating ecosystem monitoring and planning, setting up an information database, tracking and adapting management plans and developing a visitor and cultural centre and education outreach program.