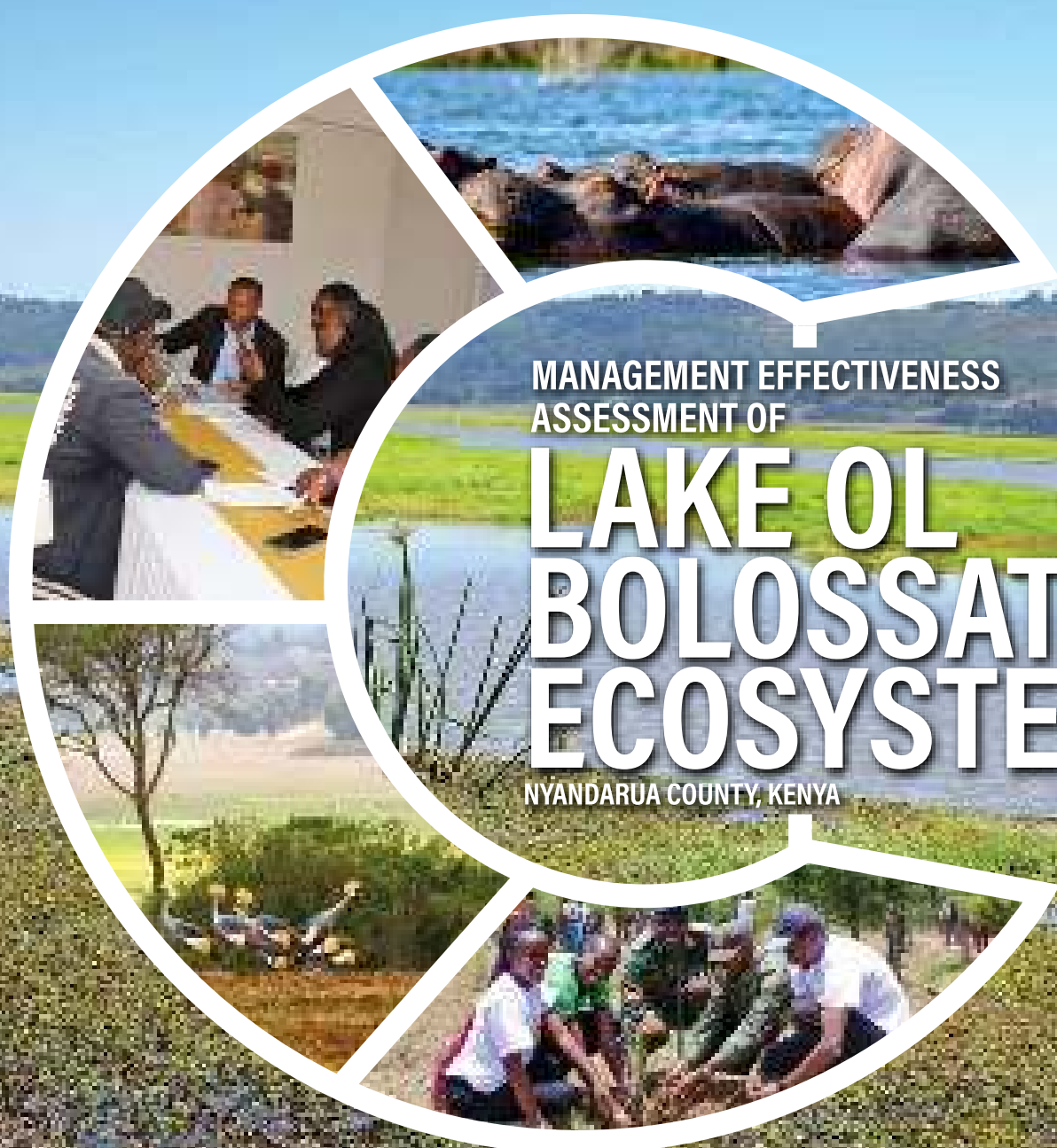




MANAGEMENT EFFECTIVENESS
ASSESSMENT OF

LAKE OL BOLOSSAT ECOSYSTEM

NYANDARUA COUNTY, KENYA

Disclaimer

The management effectiveness assessment of Lake Ol Bolossat was funded by the JRS Biodiversity Foundation under the project *“Unlocking Biodiversity Data to Facilitate Designation of Lake Ol Bolossat as the 7th Ramsar Site in Kenya (2023-2026), Project Grant no. 70014.*

The project is a collaboration between East African Wild Life Society (EAWLS), Wangari Maathai Institute for Peace and Environmental Studies, University of Nairobi, (UON-WMI), and Wildlife Research and Training Institute (WRTI).

The findings, interpretations and conclusions presented in this report do not necessarily reflect the views of the JRS Biodiversity Foundation or the project partner institutions.

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ACRONYMS

BMU	Beach Management Unit
CBD	Convention on Biological Diversity
CBOs	Community-Based Organisations
CFA	Community Forest Association
CIDP	County Integrated Development Plan
EAWLS	East African Wild Life Society
EIA	Environmental Impact Assessment
EN	Endangered
GIS	Geographic Information Systems
IBA	Important Bird and Biodiversity Area
IUCN	International Union for Conservation of Nature
KWS	Kenya Wildlife Service
LC	Least Concern
METT	Management Effectiveness Tracking Tool
MoU	Memorandum of Understanding
NGO	Non-governmental Organisation
NT	Near Threatened
PES	Payment for Ecosystem Services
PPP	Public-Private Partnership
RSIS	Ramsar Site Information Sheet
SDGs	Sustainable Development Goals
SOPs	Standard Operating Procedures
UNEP	United Nations Environment Programme
UON-WMI	University of Nairobi's Wangari Maathai Institute for Peace and Environmental Studies
WCMC	World Conservation Monitoring Centre
WCPA	World Commission on Protected Areas
WRA	Water Resources Authority
WRUA	Water Resource Users Association
WRTI	Wildlife Research and Training Institute
WWF	World Wide Fund for Nature

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The East African Wild Life Society (EAWLS) and project partners appreciate the generous financial support provided by the JRS Biodiversity Foundation, which made possible the assessment of the management effectiveness of the Lake Ol Bolossat ecosystem in Nyandarua County, Kenya. The findings from this baseline assessment provide critical data necessary on the current state of protection and management of the lake and will inform adaptive management strategies. Establishing this baseline will enable managers and stakeholders to monitor progress over time, identify priority interventions, and strengthen conservation and sustainable management efforts. Ultimately, it will contribute to securing the long-term ecological and socio-economic benefits of Lake Ol Bolossat for present and future generations.

We sincerely appreciate the technical support provided by the Wildlife Research and Training Institute (WRTI), particularly Dr. Judith Nyunja and Mr. Jared Asenwa Lumbasi, who led the management effectiveness assessment and prepared this report. Special appreciation is also extended to Jabes Okumu, Project Principal

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Nancy Ogonje,
Executive Director
East African Wild Life Society



EXECUTIVE SUMMARY

Lake Ol Bolossat, Kenya's only highland lake, is a critical wetland ecosystem providing hydrological, ecological, and socio-economic benefits to surrounding communities and downstream counties. Despite its designation as a Wetland Protected Area under section 42(2) of the Environmental Management and Co-ordination Act (Cap 387) vide Legal Notice No. 179 of 2018, the lake continues to face significant threats, including siltation, pollution, encroachment, resource overexploitation, invasive species, climate change, and degradation of the catchment areas. These threats are both extensive and severe, particularly those arising from ecosystem modification, land-use conflicts, and weak governance. Weak enforcement and limited coordination among stakeholders further undermine conservation efforts.

To assess the current status of management, a baseline evaluation using the Management Effectiveness Tracking Tool (METT-4) was conducted in August 2024 and October 2025 through a participatory process involving government agencies, Community-Based Organisations, NGOs, and other stakeholders who have a mandate for the management of the wetland or have ongoing initiatives in the area.

The overall management effectiveness score was 41.46%, indicating early to moderate progress in conservation of Lake Ol Bolossat.

Among the six METT elements, Planning scored the highest (57.14%), followed by Inputs (44.44%) and Processes (43.86%). Outputs were low (33.33%) and Outcomes were critically poor (8.33%), highlighting the limited ecological and socio-economic impact of current interventions. Key challenges include inadequate legal protection, insufficient resources, weak enforcement, lack of boundary demarcation, minimal community involvement, and the absence of sustainable financing mechanisms.

The assessment identified priority actions, including legal gazettement of the lake as a National Reserve, full implementation of the management plan, boundary demarcation, enhanced staffing and capacity building, sustainable financing, improved infrastructure, stronger enforcement mechanisms, community engagement, climate resilience initiatives, and habitat restoration. These interventions are structured into short-, medium-, and long-term priorities to ensure a systematic and adaptive approach.





CHAPTER 1

INTRODUCTION

The East African Wild Life Society, in collaboration with the Wildlife Research and Training Institute (WRTI) and the University of Nairobi's Wangari Maathai Institute for Peace and Environmental Studies (UON-WMI), facilitated a management effectiveness assessment of the Lake Ol Bolossat ecosystem under a three-year project titled ***"Unlocking Biodiversity Data to Facilitate Designation of Lake Ol Bolossat as the 7th Ramsar Site in Kenya,"*** with support from JRS Biodiversity Foundation. The project aimed to address critical gaps in biodiversity data essential for effective conservation and management strategies. The overarching goal of the project was to generate reliable biodiversity data that would inform conservation efforts and management interventions, ultimately facilitating the designation of Lake Ol Bolossat as Kenya's seventh Ramsar Site.

Lake Ol Bolossat, the only lake in Kenya's central highlands, is a shallow, slightly alkaline water body with an average pH of 7.48 and an average maximum depth of about 2 metres. It is surrounded by extensive swamp vegetation. The wetland comprises roughly 80% marshland, 15% open water, and 5% dry land, serving as a vital headwater source for the Ewaso Ng'iro North River, which supports ecosystems and communities across multiple counties. It draws

its water from ecologically significant Aberdares ecosystem, Satima Escarpment to the east and Dundori Ridge to the west.

Lake Ol Bolossat holds significant hydrological, ecological, and socio-economic values. It sustains livelihoods through water supply, agriculture, tourism, and fisheries, while also delivering critical ecosystem services, including water regulation, flood mitigation, carbon sequestration, biodiversity conservation, and climate change resilience. The lake is listed as an Important Bird and Biodiversity Area (IBA) that supports diverse fauna and flora, including migratory bird species of global conservation concern. It is also culturally and aesthetically significant, contributing to local and national tourism, particularly through attractions such as the scenic Thomson Falls.

Recognizing its ecological importance, the Government of Kenya declared Lake Ol Bolossat a Wetland Protected Area under the Environmental Management and Co-ordination Act (Cap 387) vide Legal Notice No. 179 of 2018. The lake was further declared as a protected area under the Water Act, 2016 through Legal Notice No. 116 of 2023. The protected area, measuring approximately 14,700 hectares, is guided by the Lake Ol Bolossat Integrated Management



Plan (2023–2033), which sets out strategies for conservation, management and protection of the lake and its catchment areas.

Despite its gazettement as a protected area, the lake continues to face significant management and conservation challenges, including wetland degradation, siltation, encroachment for agriculture, infrastructure and settlement, resource over-exploitation, invasive species, unclear boundaries, catchment degradation and climate change. Weak enforcement of protection measures and poor coordination among stakeholders further exacerbate these pressures. Without urgent and effective management interventions, the ecological integrity and ecosystem services provided by Lake Ol Bolossat are at serious risk of irreversible decline.

In the foregoing context, a baseline assessment of management effectiveness was urgently

required to establish the current status of the lake's protection and to inform adaptive management strategies. By establishing the baseline, managers and stakeholders will be better positioned to track progress over time, identify priority interventions, and secure the long-term ecological and socio-economic benefits of Lake Ol Bolossat for current and future generations.

The assessment of management effectiveness aligns with international obligations under the Convention on Biological Diversity (CBD) Programme of Work on Protected Areas, the Ramsar Convention on Wetlands of International Importance, and the Sustainable Development Goals (particularly SDGs 6, 13, 14, and 15). It provides an evidence-based foundation for improving governance, mobilising resources, strengthening community participation, and enhancing ecological resilience.



A group of crowned cranes with their characteristic yellow and black crests are in the foreground. Behind them is a dense line of green bushes. In the background, a tall, thin tree stands on the left, and a person is visible in the distance on the right. The landscape is a mix of green grass and brown earth.

CHAPTER 2 METHODOLOGY

2.1 Description of Lake Ol Bolossat ecosystem

Lake Ol Bolossat is situated in Nyandarua County, within the Engare Narok–Melghis Sub-Basin (drainage area 5AA), at coordinates 1°07'33"S and 36°25'4.60"E (**Figure 1**). It lies at an average altitude of 2,340 metres above sea level and covers a surface area of approximately 147 km² (Lake Ol Bolossat Management Plan 2023- 2033). Geographically, the protected area spans Ndaragwa Sub-County on the eastern side and Ol Joro Orok and Ol Kalou sub-counties on the western side. It is located about 21 km south of Nyahururu Town, off the Gilgil-Nyahururu Highway, and approximately 131 km north of Nairobi City.

The watershed contributing surface runoff to the lake has been delineated using Geographic Information Systems (GIS) tools, measuring 134 km² out of the total 1,357 km² catchment area of the 5AA sub-basin. This watershed, including the springs from the Aberdare Ranges, forms the hydrological backbone of the Lake Ol Bolossat ecosystem. Notably, the hydrological system originating from Ndundori and the Ol Jorok area is particularly significant, contributing essential water flow and influencing the lake's overall health and biodiversity. This interconnected system plays a crucial role in maintaining the ecological balance of the lake and its surrounding environment. Figure 1 shows Lake Ol Bolossat's extent, its immediate riparian land, and the encompassing catchment boundaries. Key physical features include the Satima Escarpment to the east and Dundori Ridge to the west, both critical in defining hydrology and the landscape context.

The lake's primary inflows originate from the Aberdare Ranges, mainly through Nduthi Springs and several other smaller springs, supplemented by rainfall and sub-surface flow. Its outflow drains into the Engare Narok River at Manguo in Nyahururu Town, Laikipia East Sub-County,

which in turn feeds the Ewaso Ng'iro North River. This makes Lake Ol Bolossat a critical water source for downstream areas in Laikipia, Samburu, Isiolo, and Wajir counties.

Ecologically, the lake is characterised by diverse physiographic features and a rich variety of flora and fauna, including endangered and rare species. Its ecosystem supports tourism-related activities across the region, including the scenic 75 metre high Thomson Falls and nearby hospitality establishments.

Socio-economically, the lake sustains livelihoods in at least five counties namely: Nyandarua, Laikipia, Samburu, Isiolo, and Wajir, through water provision, tourism, and ecosystem services. Recognising its ecological importance, the National Government has designated Lake Ol Bolossat as a protected wetland.

2.2 Participatory assessment using METT

A two-pronged approach was adopted in assessing the management effectiveness of Lake Ol Bolossat. This included workshops with key stakeholders who are either managers of the ecosystem or have ongoing initiatives, and field site visits to observe threats and interventions firsthand, complementing and validating findings from the stakeholder workshops. Two workshops were held in 2024 and 2025 to establish baseline scores through stakeholder discussions and consensus, and for the validation and adoption of results. Further, a one-day field visit was conducted by the WRTI representative with support from local stakeholders on the 7th of October 2025, and the observations were used to enrich the report.

During the workshops, the Management Effectiveness Tracking Tool (METT-4) was adopted for the assessment of the management effectiveness of Lake Ol Bolossat. The METT-4 was selected due to its comprehensive framework, designed specifically for assessing the effectiveness of protected area management.

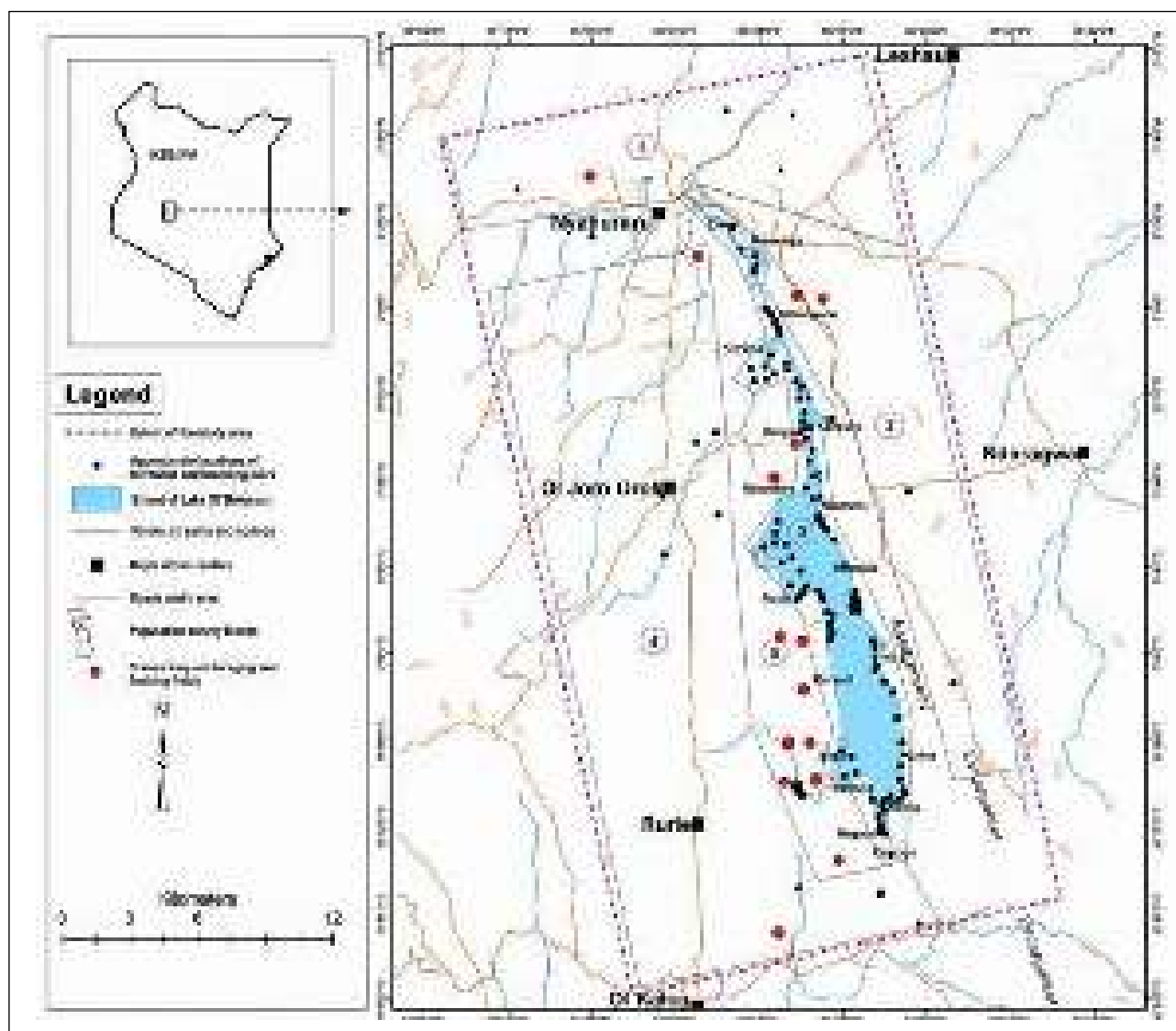


Figure 1: Location and catchment area of Lake Ol Bolossat, Kenya

Unlike other assessment tools, METT-4 incorporates a clear set of indicators that align with established management objectives, facilitating a standardised evaluation process. Its user-friendly format enables stakeholders to engage effectively, ensuring transparency and inclusivity in data collection. Furthermore, METT-4's focus on both biodiversity outcomes and management practices provides a holistic view of conservation effectiveness, making it the ideal choice for the project's objectives. It is on this basis that METT-4 was applied to the Lake Ol Bolossat conservation area to systematically evaluate performance across key management elements: context, planning, inputs, processes, outputs, and outcomes.

2.3 Evaluation tool: Management Effectiveness Tracking Tool (METT - 4)

The Management Effectiveness Tracking Tool (METT) is a globally recognised framework for assessing the performance of protected area management (Stolton *et al.*, 2007; WWF & World Bank, 2007). It was developed under the joint auspices of the World-Wide Fund for Nature (WWF) and the World Bank, and is aligned with the International Union for Conservation of Nature (IUCN) framework for assessing management effectiveness (Hockings *et al.*, 2006). The METT-4 version provides a standardised, rapid, and cost-effective method to evaluate management performance, identify

priority actions to address any management weaknesses, and monitor changes over time.

METT-4 is structured around two main components: datasheets and the assessment form. In this assessment, both components were completed through a participatory process involving representatives from government agencies, local community organisations, non-governmental organisations, and other conservation stakeholders. This participatory approach ensured the integration of local ecological knowledge, technical expertise, and management experience, thereby enhancing the validity of the results and fostering ownership of subsequent management recommendations.

Data Sheet 1 captured baseline site information, including the name of the protected area, size, geographical location, date of the assessment, and details of the participating assessors. This ensured that the assessment context was well-documented and replicable.

Data Sheet 2 presented a generic list of potential threats to protected areas. Using this list, the assessment team identified threats relevant to the site and ranked their impacts

according to severity, spatial extent, and degree of influence on ecological integrity. This step provided a comprehensive situational analysis of the pressures facing the protected area and informed the prioritisation of management actions.

Data Sheet 3 (assessment form) contained 38 structured questions distributed across six management elements (Table 1) that align with the IUCN-WCPA management effectiveness framework. Each question was scored on a four-point ordinal scale (0–3), where 0 represented the absence of adequate management measures and 3 reflected an optimal, fully effective condition. The maximum achievable score was 123. For analytical consistency, total scores for each management element were converted to percentage values, enabling standardization across assessments and facilitating temporal and spatial comparisons.

The six management elements described in Table 1 below had the following attributes:

1. Context – “Where are we now?”

This element assessed the significance, threats, vulnerability, national policy



context, and stakeholder partnerships of the protected area, providing a diagnostic overview of its current ecological and governance status.

2. Planning – “Where do we want to be?”

This element evaluated the adequacy and appropriateness of the legislative framework, protected area system design, reserve configuration, and management planning processes, establishing whether the site was strategically positioned to achieve its conservation objectives.

3. Inputs – “What do we need?”

This element examined the adequacy of financial, human, technical, and equipment resources allocated to both the management agency and the protected area, providing insight into resource sufficiency for effective management implementation.

4. Processes – “How do we go about it?”

This element assessed the efficiency and appropriateness of management operations, including adherence to approved plans, alignment with best practice, and the application of adaptive management principles.

5. Outputs – “What were the results?”

This element measured the immediate products and services resulting from management interventions, including the extent to which planned actions were implemented and delivered.

6. Outcomes – “What did we achieve?”

This element evaluated the long-term ecological and socio-economic impacts of management, particularly the extent to which the objectives of the protected area had been achieved.

By generating both quantitative scores and qualitative insights, the METT provided a robust baseline for tracking management performance over time. The results of this assessment can be used to inform strategic planning, prioritise resource allocation, and guide adaptive management interventions (Leverington *et al.*, 2010). Furthermore, the participatory methodology employed enhances transparency, institutional accountability, and stakeholder commitment, which are critical to the sustained effectiveness of protected area management (Borrini-Feyerabend *et al.*, 2013).

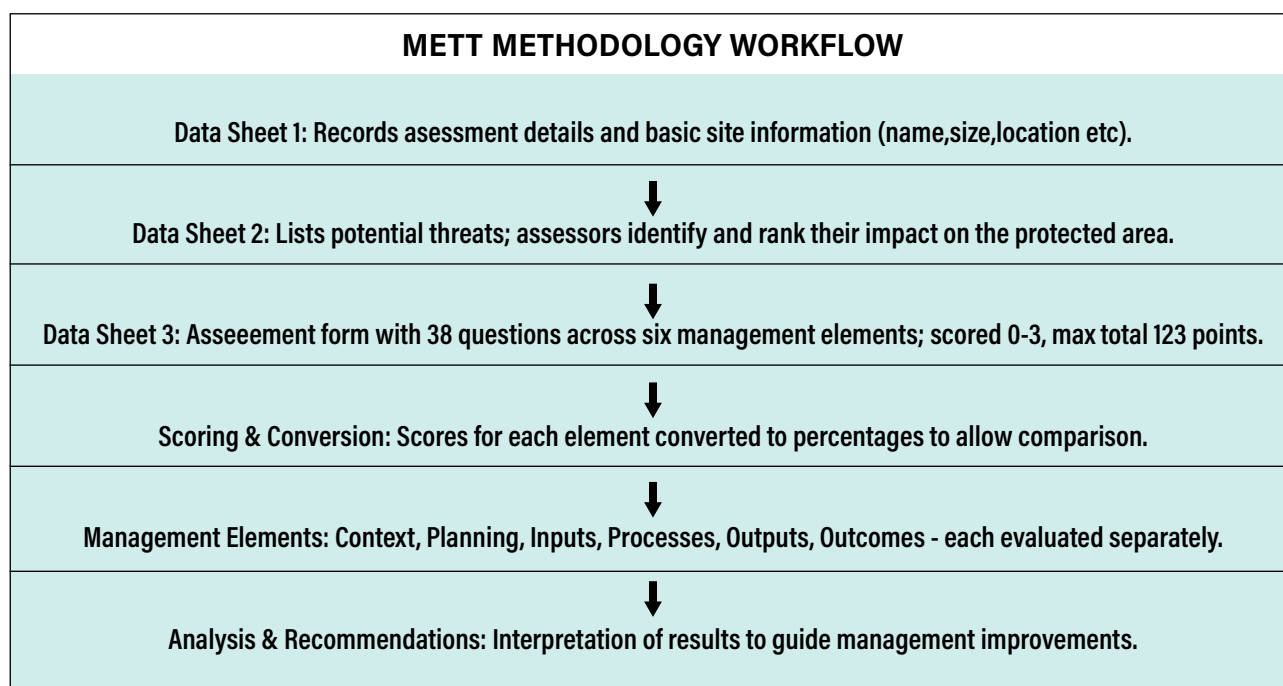


Figure 2: METT Methodology workflow

Table 1: The METT assessment questions and management elements

1	Does the PA have legal status or is it established through “other effective means”?	Planning
2	Is management undertaken to achieve the objectives of the protected area?	Planning
3	Are appropriate regulations/controls in place to manage use and activities in accordance with the management objectives of the protected area?	Process
4	Does land and sea use planning outside of the protected area recognise the protected area and contribute to the achievement of management objectives?	Planning
5	Is the protected area the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?	Planning
6	Is the boundary known and demarcated?	Process
7	Is there a management plan or equivalent and is it being implemented?	Planning
7a-c	Additional points: Planning process	Planning
8	Is there a regular work plan and is it being implemented?	Planning
9	Do you have enough information to manage the area?	Inputs
10	Are there enough people to manage the protected area?	Inputs
11	Do the people involved in managing the protected area have the necessary knowledge and skills?	Inputs
12	Is the current budget sufficient?	Inputs
13	Is the budget secure?	Inputs
14	Is the budget managed to ensure effective administration of the protected area?	Process
15	Are equipment and facilities sufficient for management needs?	Inputs
16	Can staff (i.e. those with responsibility for managing the site) enforce protected area legislation and regulation?	Process
17	Are systems (e.g. patrols, permits, intelligence gathering etc) in place to control access/ resource use in the protected area?	Process
18	Do protected area staff have safe working conditions and does management prioritise safety?	Process
19	Is there a programme of management-orientated survey and research work?	Process
20	Are management activities regularly monitored, evaluated and adapted?	Process
21	Is active resource management being undertaken?	Process
22	Is the protected area consciously managed to adapt to climate change?	Process
23	Is the protected area being consciously managed to prevent carbon loss and to encourage further carbon capture?	Process

24	Does management consider ecosystem service provision?	Planning
25	Is there a planned education programme linked to the management needs?	Planning
26	Is there co-operation with neighbouring land/sea State and commercial users?	Process
27	Do commercial tour operators contribute to protected area management?	Planning
28	If fees (i.e. entry fees or fines) are applied, do they help protected area management?	Planning
29	Are visitor facilities and services adequate?	Outputs
30	Are Indigenous people involved in management decisions?	Process
31	Do local communities living in or near the protected area have input to management decisions?	Process
31a-c	Additional points - Impact on communities	Outputs
32	Is the protected area providing sustained livelihood benefits to local communities and/or Indigenous people, e.g. income, employment, payment for ecosystem services?	Outputs
33	Are the threats to the main values of the protected area being effectively addressed?	Outputs
34	Have the requirements for functional connectivity have been assessed and implemented?	Outputs
35	Detailed assessment of condition and trend in values	Outcome
36	What is the condition of the important natural values of the protected area as compared to when it was first designated?	Outcome
37a-c	Additional points - Condition of natural values	Process
38	What is the condition of the important cultural values of the protected area as compared to when it was first designated?	Outcome
38a-c	Additional points - Condition of cultural values	Process
39	Detailed assessment of key species	Outcome
40	Has the status of key indicator species changed over the last 5 years?	Outcome
41	Detailed assessment of habitats	Outcome
42	Has the status of habitats changed over the last 5 years?	Outcome

An aerial photograph showing a vast landscape. In the foreground, there are green, hilly areas with some trees. The middle ground features a large, flat, brownish area, likely a dry lake bed or wetland, with scattered patches of green vegetation and small clusters of trees. In the background, a large body of water, Lake Ol Boi, stretches across the horizon under a bright blue sky with scattered white clouds.

CHAPTER 3 RESULTS & DISCUSSIONS

3.1: Threat analysis

This section presents a detailed analysis and interpretation of the threats identified during the Lake Ol Bolossat management effectiveness assessment workshops. The threats have been grouped according to WWF/IUCN METT threat categories and analysed in terms of their extent, severity, impact on key ecological values, and management interventions (Fig. 3 and Table 2). The section below describes each of the threats identified.

1. Natural system modifications

Deforestation in the lake's catchment (Kirima-Muruai), dam construction (Museveni and Ex Jacob), and fragmentation of riparian habitats have altered hydrological regimes and increased sedimentation in the lake.

Management Interventions: Catchment rehabilitation, enforcement of environmental laws, re-designing dams, and establishment of clear lake boundaries.

2. Climate change and Severe Weather

Recurrent droughts, habitat shifts, invasive species such as thistle invasion, storms, and temperature extremes have disrupted the ecosystem stability and hydrological balance of the lake.

Management Interventions: Catchment restoration, early warning systems, awareness creation, and research on climate resilience.

3. Agriculture and aquaculture

Eucalyptus plantations and overgrazing within the riparian zones have degraded habitats and accelerated encroachment. Unsustainable grazing pressures and cultivation in sensitive ecological zones threaten both water quality and biodiversity.

Management Interventions: Awareness creation, enforcement of riparian buffer zone, development and implementation grazing plans,

and undertaking carrying capacity assessments for both livestock and hippos.

4. Governance problems

Conflicting mandates among government agencies, unclear ownership of the lake (boundaries not established), and weak implementation of existing laws undermine conservation efforts.

Management Interventions: Boundary delineation, gazettelement of the lake, and stakeholder awareness creation and coordination.

5. Cultural and social threats

Encroachment and illegal settlements have led to land tenure disputes and loss of cultural linkages. Management Interventions: Revocation of illegal titles through the National Lands Commission and enforcement of riparian laws.

6. Residential and commercial development

Uncontrolled housing and settlement expansion within the riparian land is leading to habitat loss, encroachment, and conversion of ecological zones to residential areas. Commercial and tourism infrastructure development, including six hotels by October 2025, is exerting medium pressure on ecological processes.

Management Interventions: Enforcement of riparian laws, implementation of the Nyandarua County Spatial Plan (2020-2030), demarcation of lake boundaries, Environmental Impact Assessments (EIAs), and public participation for new developments.

7. Pollution

Effluent discharge, agricultural runoff, and improper solid waste management from nearby urban settlements have degraded water quality and riparian habitats.

Management Interventions: Enforcement of waste management guidelines, implementation

of agricultural best practices, and pollution awareness campaigns.

8. Biological resource use and harm

Uncontrolled and destructive fishing practices, including the use of illegal gears, poaching of bird eggs, and retaliatory killings of hippos, have significantly reduced aquatic biodiversity and the breeding success of key species.

Management Interventions: Strengthening Beach Management Unit (BMU), sensitization of local communities, law enforcement, and multi-agency collaboration among security agencies.

9. Invasive species

The presence of invasive plants (*Salvinia molesta*) and invasive animals (crayfish), among others disrupts native species and ecosystem balance.

Management Interventions: Conversion of invasive species (*Salvinia molesta*) into bio-fertilizer, and promoting harvesting of crayfish as an economic activity.

10. Energy production and mining

Mining activities around Kanguo and Equator areas have resulted in soil erosion, siltation, and creation of unsafe open pits that threaten both wildlife and humans. These activities also foster mosquito breeding.

Management Interventions: Enforcement of riparian mining regulations (licensing of mining activities), rehabilitation of mined sites, and promotion of alternative livelihoods for miners.

11. Human intrusions and disturbance

Events such as Lake Ol Bolossat annual marathon and unregulated boat riding may cause habitat degradation and disturb breeding birds and hippos. Improper waste disposal during these activities also contributes to pollution.

Management Interventions: Implementation of zoning plans as per the Management Plan, awareness creation, installation of signage with messages on waste disposal, and increased patrols.



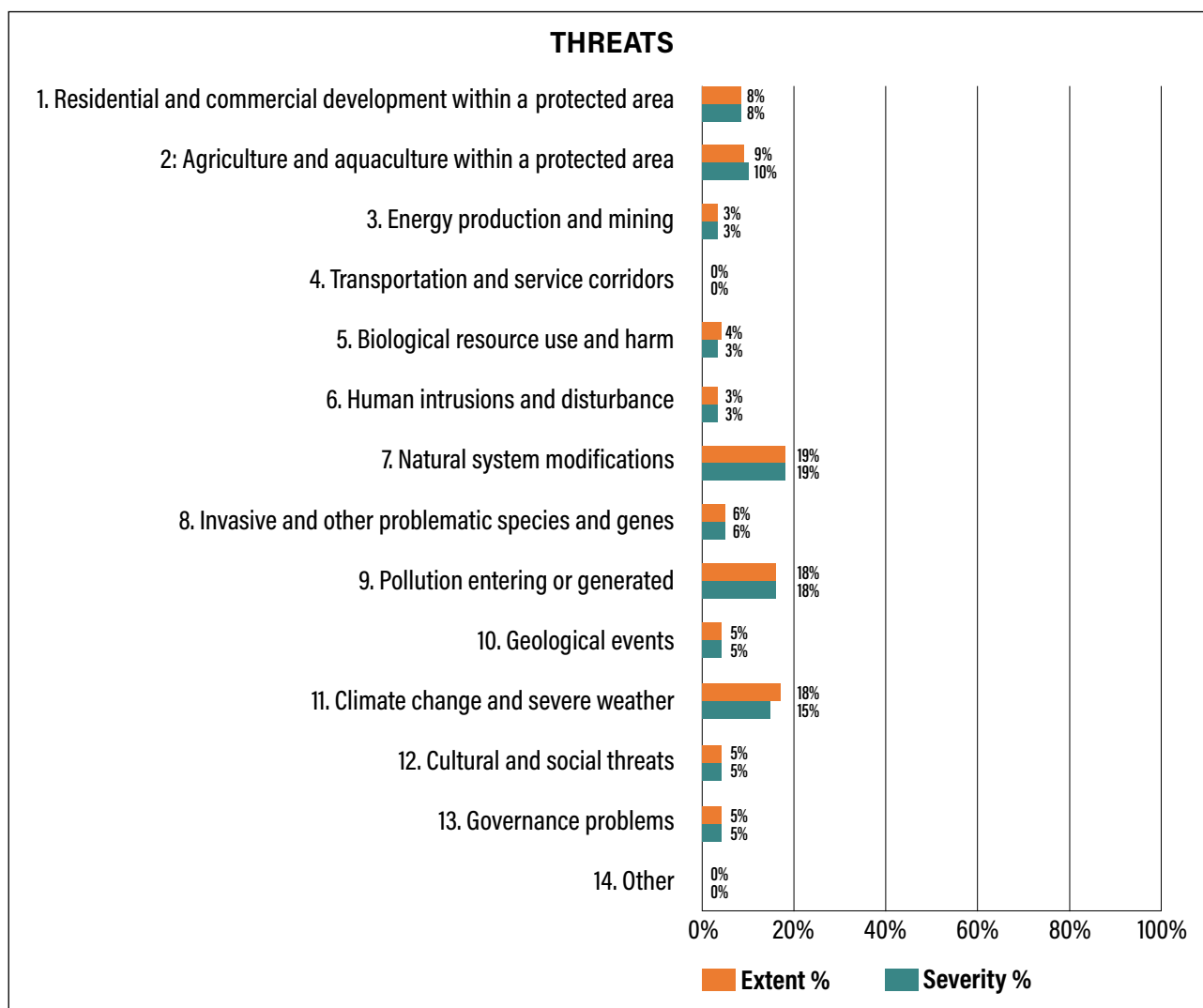


Figure 3: Percentage contribution of different categories of threats affecting the Lake Ol Bolossat ecosystem

3.2: Threat Extent

The threat extent illustrates the geographical spread and pervasiveness of each identified threat category within the Lake Ol Bolossat catchment as described in section below and in Table 2.

Natural system modifications (Rank 1) stand out as the most extensive threat, rated Very High, reflecting widespread deforestation in the catchment, dam construction (at Museveni and Ex-Jacob sites), and extensive riparian encroachment leading to habitat fragmentation.

Climate change and severe weather events (Rank 2) is also Very High in extent, underscoring

the basin-wide effects of droughts, erratic rainfall, and shifting vegetation patterns such as thistle invasion that alter wetland ecology.

Agriculture and aquaculture, governance problems, and cultural and social threats (land tenure conflicts) each display High to Very High extent, highlighting the widespread anthropogenic influence around the lake.

Residential and commercial development and pollution also occupy large spatial extents (Very High and Medium–Very High, respectively), illustrating how human settlement and agricultural runoff affect the entire riparian zone. Lower in extent, though still notable, are invasive

species, energy production and mining, and human disturbance threats, which tend to be more localized yet cumulatively significant. Overall, the extent chart (Fig. 4) reveals that most threats are widespread, affecting large portions of the lake and its catchment, thereby emphasizing the need for integrated, landscape-scale interventions rather than localized mitigation alone.

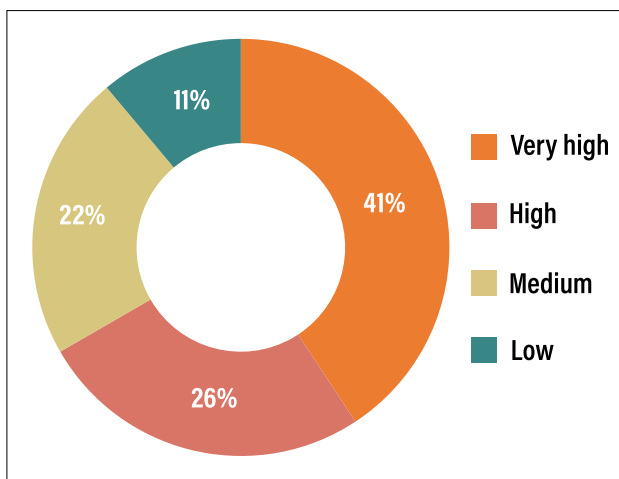


Figure 4: Overall threat extent for a combination of all threats.

3.3: Threat severity

The threat severity chart (Fig. 5) reflects the degree of damage or intensity of each threat on ecological processes and ecosystem functions.

Natural system modifications rank Very High in severity, signifying the critical level of disturbance caused by hydrological alteration, vegetation loss, and physical modification of natural habitats.

Climate change and severe weather, agriculture and aquaculture, governance problems, and cultural and social threats all exhibit High to Very High severity levels. This indicates that these pressures not only cover extensive areas but also inflict profound impacts on biodiversity, water balance, and land stability.

Residential and commercial development and pollution are rated from Low to High in severity,

suggesting variability across different zones, some areas experiencing severe degradation, while others remain relatively less affected.

Biological resource use, invasive species, and energy production and mining, present Medium to High severity, implying progressive degradation that could escalate if unmitigated.

Human intrusions and disturbance, though ranked moderate, still contribute to cumulative stress through uncontrolled recreational activities.

Taken together, the severity chart demonstrates that most threats not only cover wide areas but are also deeply damaging, with cascading effects on water quality, habitat connectivity, and key species populations such as crested cranes.

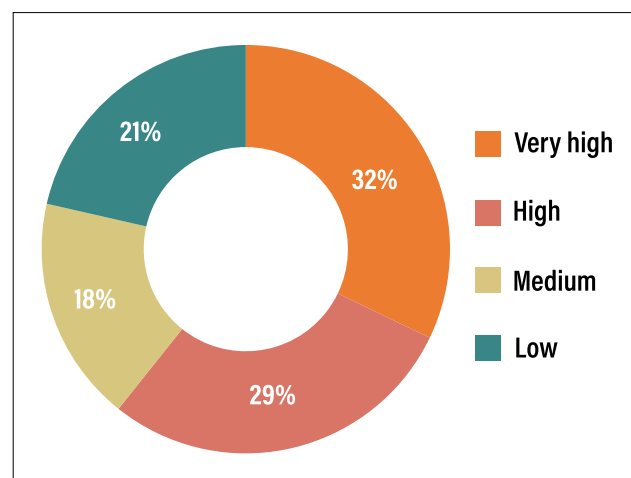


Figure 5: Overall threat severity for a combination of all threats

Table 2: Summary of threats analysis for Lake Ol Bolossat ecosystem

Rank	Threat Category	Key Issues / Description	Extent	Severity	Impact on Values	Overall Risk Level
1	Natural System Modifications	Catchment deforestation, dam construction (Museveni, Ex-Jacob), habitat fragmentation, riparian encroachment	Very High	Very High	Ecological processes	Critical
2	Climate Change & Severe Weather	Droughts, storms, thistle invasion, habitat shifts, temperature extremes	Very High	High	Ecological processes	Very High
3	Agriculture & Aquaculture	Overgrazing, eucalyptus plantations, cultivation in riparian zones	High Very High	Very High	Ecological processes	Very High
4	Governance Problems	Unclear ownership, weak law enforcement, conflicting mandates	Very High	Very High	Ecological processes	Very High
5	Cultural & Social Threats (Land Tenure Conflicts)	Illegal settlements, encroachment, land grabbing	Very High	Very High	Ecological processes	Very High
6	Residential & Commercial Development	Settlement expansion, hotels encroaching on riparian zones	Very High	High	Ecological processes	High
7	Pollution	Effluent discharge, agricultural runoff, waste dumping	Medium Very High	Low-High	Ecological processes	High
8	Biological Resource Use & Harm	Overfishing, illegal gears, poaching, habitat degradation	High	Medium	Ecological processes	High
9	Invasive Species	Salvinia molesta, Azolla, crayfish	High	Medium-High	Ecological processes	Moderate-High
10	Energy Production & Mining	Quarrying and mining in riparian zones causing siltation	Medium	Medium	Sustainable resource use	Moderate
11	Human Intrusions & Disturbance	Recreational pressure, marathons, uncontrolled tourism	Medium	Medium	Ecological processes	Moderate

3.4: Conservation Values, Indicator Species Status, and Habitat Trends

The management effectiveness assessment for Lake Ol Bolossat provides insights into the condition of conservation values, the status of key indicator species, and the trends in key habitats. Overall, the results reflect both areas of progress and continuing challenges in maintaining the ecological integrity and community value of this unique wetland ecosystem.

3.4.1: Condition of conservation values

The assessment indicates that ecological processes are currently in a fair condition but are improving, suggesting that ongoing conservation and restoration efforts are beginning to yield positive results (Table 3). However, recreational use remains poor and is deteriorating, pointing to unregulated activities, pollution, or inadequate infrastructure affecting visitor experience and sustainability.

In contrast, the significance of the lake to local communities is rated as good and improving, emphasising increasing recognition of the lake's importance for livelihoods, culture, and identity. Both sustainable resource use and tourism or recreational opportunities remain poor, though trends are improving, implying slow but steady progress in developing responsible use frameworks and community-based tourism initiatives. Collectively, these results highlight that while ecological and community values are being restored, human use aspects still require targeted management interventions.

Table 3: Condition of values

Main Value	Condition	Trend
Ecological processes	Fair	Improving
Recreational use	Poor	Deteriorating
Significance to local people	Good	Improving
Sustainable use of resources	Poor	Improving
Tourism or recreational use	Poor	Improving

3.4.2: Status and trend in key indicator species

The analysis of key indicator species reveals a concerning trend of declining ranges and shrinking habitats across all monitored species (Table 4 and Table 5). The Grey Crowned Crane though maintaining a stable population and showing improving population processes, faces decreasing habitat area and quality with increasing threats, likely from encroachment, water fluctuations, and land-use change.

Grassland specialists such as Sharpe's Longclaw, Jackson's Widowbird, and the Long-tailed Widowbird exhibit consistent declines in population size, range, and habitat quality, underscoring the fragility of grassland ecosystems around the lake.

The *Cyperus papyrus*, a vital wetland plant that supports both biodiversity and ecosystem services, is also decreasing in both area and quality, with increasing threats from drainage, sedimentation, and unsustainable harvesting. These findings indicate that while some species show resilience, most are experiencing degradation linked to habitat loss and ecosystem disturbance.



Sharpe's Longclaw

GEORGE MUGAI

Table 4: Status and trend in key indicator species

Species	Range	Population size	Population process	Habitat area	Habitat quality	Extent of threats
Grey Crowned Crane	Decreasing	Stable	Improving	Decreasing	Declining	Increasing
Sharpe's Longclaw	Decreasing	Decreasing	Declining	Decreasing	Declining	Decreasing
<i>Cyperus papyrus</i>	Decreasing	Decreasing	Declining	Decreasing	Declining	Increasing
Jackson's Widowbird	Decreasing	Decreasing	Declining	Decreasing	Declining	Decreasing
Long-tailed Widowbird	Decreasing	Decreasing	Declining	Decreasing	Declining	Decreasing

Table 5: Conservation status and habitat of key indicator species

Common Name	Scientific Name	IUCN Red List Status	Primary habitat	Kenyan distribution
Grey Crowned Crane	<i>Balearica regulorum</i>	Endangered (EN)	Wetlands, floodplains, marshes, savannas, agricultural landscapes	Widely distributed in wetlands across Kenya but declining due to wetland degradation, agricultural expansion, and human disturbance.
Sharpe's Longclaw	<i>Macronyx sharpei</i>	Endangered (EN)	High-altitude montane grasslands (1,900–3,600 m)	Endemic to Kenya, mainly in Kinangop Plateau, Mau Narok, and Mt. Kenya region; threatened by conversion of grasslands to agriculture and afforestation.
Jackson's Widowbird	<i>Euplectes jacksoni</i>	Near Threatened (NT)	Montane grasslands and cultivated fields (especially wheat fields)	Restricted to Kenyan and Tanzanian highlands; habitat loss and fragmentation are key threats.
Long-tailed Widowbird	<i>Euplectes progne</i>	Least Concern (LC)	Open grasslands, marshy grasslands, savannas, and farmland	Widespread and locally common in Kenyan highland grasslands and wetland associated habitats.

3.4.3: Status and trend in key habitats

Across all key habitat types including grasslands, wetlands, forests, the lake itself, and associated pits and bogs, there is a consistent pattern of decreasing range, area, and structural integrity (Table 6). Grasslands and wetlands, which are critical habitats for the bird species of conservation concern, are the most affected, with increasing threats primarily from agriculture, overgrazing, and conversion of land for settlement.

The forest habitats show decreasing area and structural quality but a stable extent of threats, possibly reflecting the effect of local reforestation efforts or restrictions on further clearance. The lake environment shows declining condition due to sedimentation, water abstraction, and pollution inputs. Overall, the loss of habitat quality and extent underscores the urgent need for integrated catchment management, enforcement of protection measures, and restoration of hydrological and vegetation systems.

3.5: Baseline METT score for Lake Ol Bolossat ecosystem

The Management Effectiveness Tracking Tool (METT) assessment for Lake Ol Bolossat yielded an overall score of 41.46% (Figure 6; Table 7), indicating that Lake Ol Bolossat's management is at an early to moderate stage of development. While basic management practices exist, there is considerable room for improvement. The analysis of individual management elements provides valuable insights into strengths, weaknesses, and areas requiring urgent attention, in line with the IUCN World Commission on Protected Areas (Hockings *et al.*, 2006).

1. Planning

The Planning element emerged as the strongest component, scoring 57.14%. This suggests that strategic frameworks such as management plans, zoning schemes, and identification of conservation priorities are in place. However, the gap between the current score and the maximum potential (100%) indicates that the plans require better integration with actionable, time-bound objectives, and alignment with broader national and county policy frameworks. For Lake Ol Bolossat, enhanced planning could involve incorporating climate change adaptation strategies, biodiversity action plans, and community co-management agreements, as recommended by UNEP-WCMC (2018).

2. Inputs

Inputs scored 44.44%, reflecting moderate availability of financial, human, technological, and technical resources to implement management activities. This level of resourcing may be sufficient for basic operations but inadequate for proactive management. The implication is that resource mobilisation needs to be prioritised through mechanisms such as Public-Private Partnerships (PPPs), Payment for Ecosystem Services (PES), and donor funding. Without sufficient inputs, critical actions like habitat restoration, enforcement, and community engagement cannot be scaled effectively (Emerton *et al.*, 2006).

3. Process

The Process score of 43.86% highlights that while some governance and operational procedures are in place, there are inefficiencies

Table 6: Status and trend in key habitats

Key Habitat	Range	Area of habitat	Structure and function	Extent of threats
Grassland	Decreasing	Decreasing	Declining	Increasing
Wetland	Decreasing	Decreasing	Declining	Increasing
Forest	Decreasing	Decreasing	Declining	Stable
Lake	Decreasing	Decreasing	Declining	Increasing
Pits and bogs	Decreasing	Decreasing	Declining	Decreasing

in enforcement, coordination, and stakeholder participation. This finding implies the need for strengthened institutional capacity, streamlined decision-making, and improved monitoring systems. Processes could be enhanced by establishing a joint management committee involving key stakeholders, ensuring transparency in implementation of various conservation initiatives, and adopting adaptive management approaches (Hockings *et al.*, 2015).

4. Outputs

Outputs scored 33.33%, indicating that the tangible results of management efforts such as patrol coverage, community programs, and public awareness campaigns, are currently limited. This low score suggests a gap between planning and implementation effectiveness. For Lake Ol Bolossat, improving outputs will require better resource allocation, regular performance monitoring, and investment in high-impact

interventions like invasive species removal, habitat restoration, and community livelihood diversification projects.

5. Outcomes

Outcomes represented the weakest area, with a score of only 8.33%. This reflects limited evidence of positive ecological and socio-economic changes resulting from current management actions. Such a low score underscores the urgency of focusing on long-term impact evaluation, including biodiversity status, water quality improvement, and community well-being indicators. The low outcome score could also be linked to insufficient adaptive management practices and inadequate feedback loops. According to Leverington *et al.* (2010), effective protected area management should translate into measurable conservation outcomes, which currently appears to be lacking for Lake Ol Bolossat ecosystem.

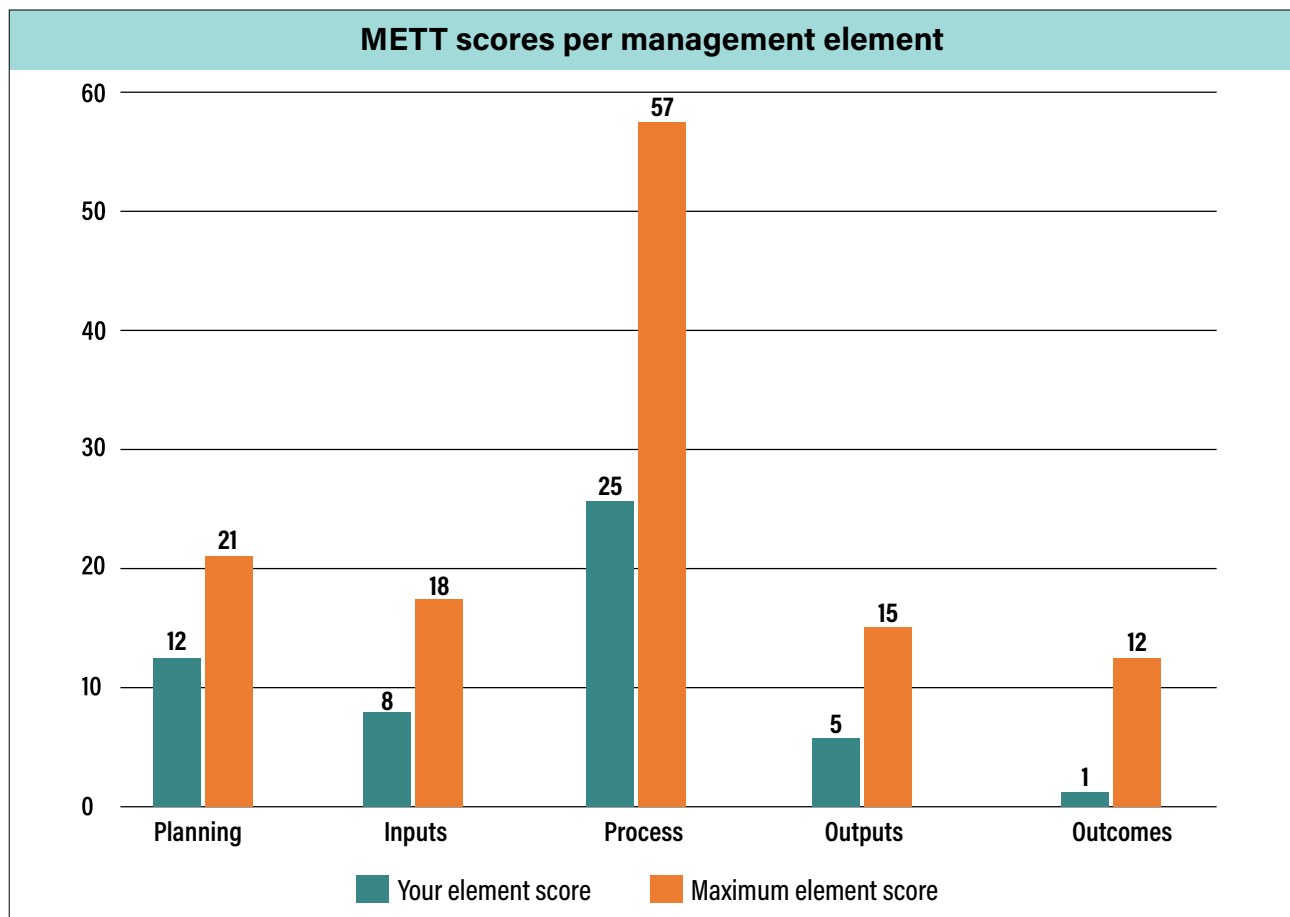


Figure 6: Variation in the 5 management elements score in relation to the potential maximum scores

Table 7: Percentage score of management elements and overall management effectiveness

METT scores per management element (per cent)				
Management Element	Element Score for L. Ol Bollosat ecosystem	Maximum Element Score	Element Score %	Max %
Planning	12	21	57.14%	100.00%
Inputs	8	18	44.44%	100.00%
Process	25	57	43.86%	100.00%
Outputs	5	15	33.33%	100.00%
Outcomes	1	12	8.33%	100.00%
Overall Management Effectiveness	51	123	41.46%	100.00%

From this METT results, we conclude that while planning frameworks are relatively strong, insufficient inputs, weak processes, and poor ecological and socio-economic outcomes are holding back effectiveness in the management of the ecosystem. This suggests the need for a holistic improvement strategy focusing not only on resource mobilization and operational efficiency but also on ensuring that management actions translate into meaningful and measurable conservation and socio-economic outcomes. Priority should be given to targeted interventions in capacity building, sustainable financing mechanisms, participatory community engagement, and adaptive monitoring systems. These actions would enable continuous learning and accountability in the management of the Lake Ol Bolossat ecosystem (Hockings *et al.*, 2015; Leverington *et al.*, 2010).

3.6: Proposed actions to improve management effectiveness of the Lake Ol Bolossat ecosystem

Below is a summary of key issues and proposed management actions during the participatory METT assessment with key the stakeholders (Table 8).



Echinops hispidus



Lactuca serriola

PHOTOS BY PAUL KIRIKA

Table 8: Proposed actions to improve management effectiveness of the lake Ol Bolossat ecosystem based on the participatory assessment using the METT-4

Issues to be addressed	Current gaps	Proposed actions	Importance/justification
1. Strengthening legal status and governance	The area lacks strong, enforceable legal protection and is only partially managed under existing frameworks.	Gazette the lake as a National Reserve to give it legal recognition. This will formalize its status, enabling stronger law enforcement, better coordination with national and county agencies, and eligibility for conservation funding.	Legal gazettement provides a foundation for all other management measures, from enforcement to revenue collection.
2. Improved management planning and implementation	Partial implementation of the existing management plan, limited integration with work plans of other stakeholders.	Implement the management plan in full. Hold annual forums to harmonize stakeholder work plans and pool resources. Resource mobilization for longterm sustainability.	Clear, coordinated planning avoids duplication, addresses gaps, and allows adaptive management.
3. Boundary demarcation and encroachment control	Encroachment from farming and settlements due to poorly defined boundaries.	Re-establish and demarcate the lake boundary using fencing, natural barriers and strategic roads. Relocate encroachers with fair compensation or alternative land solutions.	Physical boundaries protect habitats, reduce conflicts, and make enforcement feasible.
4. Enhanced staffing and capacity building	Shortage of rangers, scouts, and specialized staff; limited technical skills in tourism, enforcement, and community engagement.	Conduct a staffing needs assessment. Employ more rangers in highrisk areas like Kirima Muruai escarpment. Train staff in tour guiding, conflict management, rescue operations, and community engagement. Exposure visits and exchanges for local CBOs.	Skilled and sufficient staff are essential for patrolling, guiding, community relations, and tourism development.
5. Sustainable financing & budget security	Budget insufficiency and dependency on irregular donor support.	Capacity building for CBOs in proposal writing to access donor and climate funds. Establish lake Ol Bolossat Ambassadors network for fundraising. Explore Public Private Partnerships. Introduce conservation fees for tourists. Organize fundraising events like marathons.	Diversified, predictable funding ensures continuity of conservation efforts.

Table 8: Proposed actions to improve management effectiveness of the lake Ol Bolossat ecosystem based on the participatory assessment using the METT-4 (Continued)

Issues to be addressed	Current gaps	Proposed actions	Importance/justification
6. Improved equipment & infrastructure	Limited patrol tools, surveillance infrastructure, and research facilities.	Establish an integrated information centre for research, enforcement, and revenue collection. Strengthen enforcement capacity. Acquire patrol vehicles, drones, and boats. Build watch towers and waste management facilities.	Better infrastructure strengthens monitoring, security, and community services.
7. Enforcement and compliance systems	Weak law enforcement, lack of controlled access.	Deploy more community scouts. Create controlled entry points with gates/barriers. Strengthen CBOs to help enforce regulations. Establish a local law enforcement outpost.	Prevents illegal fishing, grazing, logging, and pollution.
8. Community engagement & livelihood support	Low community participation in decision making, limited livelihood benefits.	Capacity building for WRUAs, CFAs, and other groups. Diversify livelihoods through eco-tourism, zero-grazing livestock systems, and sustainable agriculture. Involve communities in carbon projects and sustainable resource harvesting.	When communities benefit from conservation, they are more likely to protect the lake.
9. Climate change & carbon management	Limited adaptation measures, minimal carbon capture projects.	Establish /strengthen community-run tree nurseries. Promote sustainable harvesting of natural resources. Support carbon sequestration projects for climate funding.	Builds climate resilience and attracts carbon finance opportunities.
10. Ecosystem restoration and invasive species control	Siltation, erosion, and spread of <i>Salvinia molesta</i>	Develop and implement a Wetland Rehabilitation and Invasive Species Management Plan incorporating bamboo, vetiver grass, and indigenous species.	Restores hydrological balance, improves biodiversity, and enhances ecosystem function.
11. Policy advocacy and mainstreaming	Lake priorities not well integrated into county/national policy frameworks.	Establish a Ramsar Nomination Task-force and advocate inclusion of Lake Ol Bolossat conservation in county CIDP plans.	Elevates the site's conservation profile nationally and internationally.

Table 8: Proposed actions to improve management effectiveness of the lake Ol Bolossat ecosystem based on the participatory assessment using the METT-4 (Continued)

Issues to be addressed	Current gaps	Proposed actions	Importance/justification
12. Knowledge management and education	Limited access to information and low awareness among youth.	Digitize METT results and monitoring data into a central online dashboard. Integrate wetland education programmes into local school curricula.	Builds transparency, enhances adaptive learning, and nurtures the next generation of conservation champions



PHOTO BY PAUL KIRIKA

The proposed actions to improve the management effectiveness of the Lake Ol Bolossat ecosystem are designed to address both the immediate and long-term challenges affecting the ecological integrity, biodiversity, and community benefits derived from this important wetland system. These actions are aligned with the METT assessment findings and have been prioritised into short-term, medium-term, and long-term interventions to ensure a systematic approach to conservation and sustainable management.

In the **short-term**, priority actions will focus on addressing urgent threats and laying the foundation for improved management. These include strengthening surveillance and enforcement to curb illegal activities such as overgrazing, and encroachment on riparian zones. Establishing clear demarcation of the protected area boundaries and raising awareness among local communities about the ecological and socio-economic importance of lake Ol Bolossat will be crucial. Additionally, enhancing stakeholder coordination through a multi-stakeholder platform will facilitate information sharing, joint decision-making, and conflict

resolution. Therefore, fostering collaborative stewardship of the ecosystem.

Medium-term actions are designed to consolidate the initial gains and address systemic issues that require sustained effort. These interventions will include implementing the Lake Ol Bolossat Management Plan (2023-2033) which is supported by adequate policy and legal frameworks. Investment in capacity building for the management authority (i.e relevant county Government departments) and local community groups will enhance their ability to implement conservation activities effectively. Restoration of degraded habitats, such as reforestation of upper catchment areas and rehabilitation of riparian vegetation, should be prioritized to improve water quality, biodiversity and ecosystem resilience. Furthermore, promoting alternative and climate-smart livelihoods, such as ecotourism, sustainable agriculture, bee keeping will help reduce pressure on the ecosystem while providing socio-economic benefits to local communities.

Long-term actions aim to secure the ecological health and socio-economic benefits of lake Ol





PHOTO BY KEVIN YOUNG

Bolossat for future generations. These include establishing sustainable financing mechanisms, such as Payment for Ecosystem Services (PES) schemes, conservation trust funds, and strategic partnerships with private sector actors. Long-term ecological monitoring programs will be institutionalized to track ecosystem health, biodiversity trends, and the effectiveness of management interventions. Policy advocacy should be pursued to integrate Lake Ol Bolossat conservation priorities into county and national development agendas. Over time, these measures are expected to lead to improved ecosystem services, enhanced biodiversity conservation, and sustainable livelihoods for the communities that depend on the lake.

Stakeholder roles will be clearly defined across all phases of intervention. Government agencies will provide policy direction, legal enforcement, and technical support, while local communities

will participate actively in conservation activities and benefit-sharing mechanisms. Non-governmental organizations and research institutions will contribute through technical expertise, capacity building, and monitoring and evaluation. The private sector will be engaged in sustainable investment partnerships and corporate-social responsibility initiatives that support conservation goals (Borrini-Feyerabend *et al.*, 2013).

The expected impacts of these interventions include reduced environmental degradation, enhanced biodiversity, improved water quality, strengthened community stewardship, and sustainable economic opportunities. By implementing the proposed actions in a phased and coordinated manner, Lake Ol Bolossat can be conserved and managed effectively as a critical ecosystem that supports both biodiversity and human well-being.



CHAPTER 4

CONCLUSIONS & RECOMMENDATIONS

PHOTO BY VINCENT MUCHAI

4.1 Conclusions

The METT-4 assessment reveals that while Lake Ol Bolossat has a relatively strong planning framework, management implementation and measurable outcomes remain weak. Without urgent interventions, the lake's ecological integrity, biodiversity, and socio-economic benefits are at risk of irreversible decline.

A comprehensive and coordinated management approach, anchored in strong legal status, adequate resources, inclusive governance, and adaptive management, is essential. Effective conservation of Lake Ol Bolossat will not only safeguard biodiversity and water resources but also enhance climate resilience, sustain livelihoods, and contribute to Kenya's commitments under the Ramsar Convention on Wetlands, the Convention on Biological Diversity, and the Sustainable Development Goals (SDGs 6, 13, 14, and 15), reinforcing the country's broader commitments to nature-based climate solutions and sustainable land-use planning (Hockings *et al.*, 2015; UNEP-WCMC, 2018).

4.2 Recommendations

1. Strengthen legal protection and governance

- Gazette Lake Ol Bolossat as a National Reserve to formalize its legal status and enable stronger enforcement and funding access.
- Establish a multi-stakeholder governance platform for coordinated decision-making and conflict resolution.

2. Fully implement and align the Lake Ol Bolossat management plan

- Operationalize the existing Lake Ol Bolossat management plan with annual workplans with measurable performance indicators; and the management plan review forums to harmonise stakeholder activities.
- Integrate climate change adaptation,

biodiversity action, and community co-management strategies into all conservation interventions.

3. Secure boundaries and control encroachment

- Demarcate and secure lake boundaries using physical georeferenced boundary beacons.
- Strengthen enforcement along the riparian zone using natural barriers such as bamboo plants.
- Implement fair and transparent relocation or compensation for encroachers.

4. Build capacity and staffing

- Increase ranger presence, especially in high-risk zones, and provide specialized training in enforcement, ecotourism, community engagement, ecological monitoring, conflict management and rescue operations.
- Establish a joint enforcement unit combining County officers, KWS, WRA, and trained community scouts/rangers.
- Facilitate exchange visits and peer-learning programmes for community conservation groups and local managers.

5. Establish sustainable financing mechanisms

- Develop a conservation trust fund, Payment for Ecosystem Services, and Public-Private Partnerships to diversify revenue streams.
- Introduce conservation fees for tourism and organize community fundraising events (e.g Lake Ol Bolossat marathon).

6. Enhance infrastructure and equipment

- Acquire patrol vehicles, drones and boats, to strengthen surveillance and response operation.
- Establish an integrated information, research and visitor center to support information storage and public education

7. Strengthen enforcement and compliance

- Deploy trained community scouts and formalize collaboration through MoUs with WRUAs and CBOs.
- Develop standard operating procedures (SOPs) for joint patrols and reporting
- Establish a local enforcement outpost with controlled access points to minimize illegal activities such as grazing, fishing, and logging.

8. Foster community engagement and livelihood diversification

- Support alternative livelihoods such as eco-tourism, sustainable agriculture, and zero-grazing systems.
- Involve communities in carbon sequestration, tree planting and resource harvesting projects, ensuring equitable benefit sharing.

9. Implement climate and ecosystem restoration actions

- Desilt the lake, remove invasive species, and restore degraded catchment areas with native vegetation.

- Establish community-led tree nurseries and climate resilience initiatives.

10. Institutionalize monitoring and adaptive management

- Develop long-term ecological monitoring to track biodiversity, water quality and quantity and socio-economic impacts.
- Use monitoring data to guide adaptive management actions for more effectiveness.

11. Promote policy advocacy, education, and Ramsar nomination

- Advocate for the inclusion of Lake Ol Bolossat conservation priorities in County Integrated Development Plans (CIDPs) and the National Wetlands Conservation and Management Strategy.
- Establish a Ramsar Nomination Taskforce to prepare and submit the Ramsar Site Information Sheet (RSIS).
- Integrate wetland conservation education into local school curricula and awareness campaigns to cultivate long-term stewardship among youth.



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ANNEXES

Annex 1: Photos from the field validation exercise.



Figure 7: Encroachment at the Lake Ol Bolossat.



Figure 8: Grey Crowned Crane feeding on the vegetation along the riparian land.



Figure 9: Eucalyptus tree plantation along the lake's riparian land.



Figure 10: Solid waste from nearby settlement enters the lake through storm water channels or wind.



Figure 11: Livestock grazing on riparian vegetation along the lake ecosystem.



Figure 12: Cattle grazing on riparian vegetation along the lake ecosystem.

ANNEXES

Annex 1: Photos from the field validation exercise



Figure 13: Invasive aquatic plant species (*Salvinia molesta*) dominating parts of the lake.



Figure 14: Undisturbed part of the lake showing intact grassland habitat.



Figure 15: Quarry site near the lake.

Annex 2: Participants at the two-day multi-stakeholder validation workshop on the METT report for the Lake Ol Bolossat ecosystem, Ol Kalou, Nyandarua County.



Annex 3 : List of participants: Stakeholders workshop to assess and validate the management effectiveness of L. Ol Bolossat ecosystem, held on 8th and 9th October 2025

No.	Participant Name	Organization
1.	George Ndungú	CCV
2.	Bernard Mwai	County Government of Nyandarua (CGN)
3.	Salome Gikonyo	CGN
4.	Penina Muchendu	National Government Administration Officer (NGAO)
5.	Felishina Kamau	NGAO
6.	Jane W. Karimi	NGAO
7.	June Wangui	EAWLS
8.	Kenneth Kimathi	KFS
9.	Miriam Mwangi	EAWLS-Community Scout
10.	Joseph Ndichu	Friends of L. Ol Bolossat
11.	Michael Ngángá	Tree Growers Association of Nyandarua (TGAN)
12.	Mary Wanjiku	CGN
13.	Moses Mathenge	L. Ol Bolossat Community Conservation Group (LOCCOG)
14.	Eunice N. Wanjohi	TGAN
15.	David Ngángá	L. Ol Bolossat BMU
16.	Stephen Mwangi Thamu	EAWLS-Community Scout
17.	James Karanja	EAWLS-Community Scout
18.	Paul Mwangi	EAWLS-Community scout
19.	Samuel Chege	EAWLS-Community Scout
20.	Racheal Njogu	EAWLS-Community Scout
21.	Caroline Karumba	EAWLS-Community Scout
22.	Jared Lumbasi	WRTI
23.	Judith Nyunja	WRTI
24.	Peter Karani	LOCCOG
25.	Samuel Muigai	Ol Bolossat CFA
26.	Daniel Mathenge	Kirima Muruai CFA

Annex 3 : List of participants: Stakeholders workshop to assess and validate the management effectiveness of L. Ol Bolossat ecosystem, held on 8th and 9th October 2025

No.	Participant Name	Organization
27.	Samuel Nderi	Ol Bolossat WRUA
28.	Marshal Mwanzia	CGN
29.	Samuel Bakari	CGN
30.	Ruth Gathura	Friends of Kinangop Plateau
31.	Catherine Njoki	National Land Commission (NLC)
32.	Judy Wahome	KFS
33.	Scolastica Chepkoskei	Assistant County Commissioner (ACC)
34.	Paul Wambugu	KWS
35.	Peter Kariuki	KWS
36.	David Warui	CCV
37.	Ann Mukaindo	EAWLS
38.	Jecinta Wanjiru	NEMA
39.	Thuita Thenya	Wangari Maathai Institute for Peace and Environmental Studies (WMI)
40.	Dickson Kitur	KFS
41.	Jabes Okumu	EAWLS
42.	Samuel Kimani	EAWLS
43.	Nathaniel Musau	EAWLS
44.	Vincent Fibanda	EAWLS
45.	Wanyoike Wamiti	International Crane Foundation (ICF)
46.	Miriam Ngotho	CGN

Annex 4: List of participants: Stakeholders workshop to assess the management effectiveness of L. Ol Bolossat ecosystem, held on 8th and 9th August 2024

No.	Participant Name	Organization
1.	Moses Mathenge	LOCCOG
2.	Josh Patel	KFS
3.	David Ngángá	Ol Bolossat BMU
4.	Beatrice Muthoni	LOCCOG
5.	Daniel M. Murage	Kirima Muruai CFA
6.	Duncan K. Wahome	NGAO
7.	Catherine M. Kibata	NGAO
8.	Rose W. Macharia	NGAO
9.	Teresia Ndungú	CGN
10.	Marshal Mwanzia	CGN
11.	Paul Wambugu	KWS
12.	Jared Lumbasi	WRTI
13.	Judith Nyunja	WRTI
14.	Peter Kariuki	KWS
15.	Ruth Gathura	Friends of Kinangop Plateau
16.	Miachel N. Ngángá	TGAN
17.	Leonard Musee	EAWLS
18.	Catherine Njoki	NLC
19.	Felishina W. Kamau	NGAO
20.	David Warui	CCV
21.	Catherine Nderi	WRUA
22.	Vincent Fibanda	EAWLS
23.	Nathaniel Musau	EAWLS
24.	Bernard Macharia	Friends of L. Ol Bolossat Foundation
25.	Martin Letoluo	Ewaso Nyiro South Development Authority (ENSDA)
26.	Miriam Ngotho	CGN

Annex 4: List of participants: Stakeholders workshop to assess the management effectiveness of L. Ol Bolossat ecosystem, held on 8th and 9th August 2024

No.	Participant Name	Organization
27.	Jabes Okumu	EAWLS
28.	Bernard Mwai	CGN
29.	Hunyu Muriithi	NEMA
30.	Ann Mukaindo	EAWLS
31.	Eunice N. Wanjohi	TGAN
32.	Peter Karani	Nyahururu Bird Club
33.	George Muigai	CCV
34.	Wanyoike Wamiti	ICF
35.	Samuel Bakari	CGN
36.	Judy Wahome	KFS
37.	Charles Itegi	KFS
38.	Samuel Nderi	Lake Ol Bolossat WRUA
39.	Thuita Thenya	WMI



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