



Enarau 2024 Quarter 2 Report



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INTRODUCTION

Enarau Conservancy, one of the newly formed conservancies within the Maasai Mara ecosystem, aims to uplift biodiversity conservation and restore indigenous habitats. Enarau focuses on various programs including research, conservation and restoration, technology integration, and community well-being. These programs are essential for addressing social, economic, and environmental challenges, and contribute to the expansion and connectivity of the greater Mara ecosystem. Our strategic plan guides the implementation of these programs, with regular monitoring and evaluation.

EXECUTIVE SUMMARY

This report gives a comprehensive summary of the progress of Enarau Conservancy's programs in advancing its four strategic pillars. During this quarter, the conservancy has made significant progress in research, restoration, technology, and community engagement, as detailed below.

Research on mammals, birds, soils, vegetation and microclimate were conducted. The methodology employed includes the use of camera traps, line transects, soundscapes/bioacoustics, and drone mapping.

In our conservation and restoration efforts, we have received valuable support from two personnel from the Kenya Wildlife Service (KWS) who have joined our ranger team. Their presence has improved our patrols, leading to a reduction in human-wildlife conflicts and helping to prevent charcoal burning. Furthermore, we have organized tree planting exercises twice this quarter to commemorate National Tree Growing Day and World Environment Day.

Since the Enarau restoration, conservation, and research interventions heavily rely on technology, we have employed camera traps, Geographic Information System, drone cameras, bioacoustics, and Earth Ranger to monitor our progress and communicate our interventions.

Enarau Conservancy prioritizes community well-being through education, awareness, and engagement. During this quarter, we facilitated a discussion between our academic partners and the local community to gather their perspectives on participating in conservation and restoration efforts. Our partners were also interested in learning about the Traditional Ecological Knowledge within the community and the changes in the landscape over the past 50 years. Additionally, we worked with Enchesheroi Dreamers Academy Primary to educate students about the importance of conservation and to inspire a love for nature.

Through the four strategic pillars, Enarau Conservancy is on course to achieve its mission of protecting and restoring critical and unique habitats for nature and humanity contributing to the long-term ecological sustainability of the Greater Maasai Mara Ecosystem.

1.0 RESEARCH

During the second quarter, Enarau Conservancy Research Department in partnership with the Centre for Ecosystem Restoration Kenya (CERK) has undertaken various research projects. These projects involved data collection on vegetation, mammals, soils, birds and microclimate. The data will be used for continuous monitoring of ecological changes occurring within the conservancy, thus informing decision making with evidence based.

1.1 Large Mammals and Birds Survey.

To gather data on rarely sighted and nocturnal mammals, camera traps were employed, a spotted hyena (*Crocuta crocuta*), rarely seen in the conservancy, was captured. A bush back was also captured. There is an ongoing establishment of line transects within farmland, core area, airstrip and the wildlife corridor. These line transects will be important in collecting data and continued monitoring of our conservancy, in regards to wild animals' increase, vegetation increase and health, as well as decrease in number of livestock accessing different grazing blocks in different seasons. This data will be essentially used by Enarau conservancy in monitoring and making informed decisions.



Fig 1: A spotted hyena (*Crocuta crocuta*) captured on camera trap.



Fig 2: A herd of zebras at the farmland.

Fig 3: Impalas grazing within the conservancy.

1.2 Woodland Baseline Survey in the wildlife corridor.

A baseline survey was conducted on the natural woodland located in the newly acquired parcels of land at the wildlife corridor. The study involved identifying shrubs and tree species within a partially degraded forest land. Our research team identified 28 different species, which were recorded with *Croton dichogamous* dominating the woodland. There were indirect signs of wildlife presence in the woodland, this clearly indicates the potentiality that our corridor anchors in relation to conservation of wildlife at Enarau Conservancy.



Fig 4: (Left) Our research assistants Julius, (Right) Victor and Jesseh in the field conducting a woodland baseline survey at the wildlife corridor.

1.3 Soil Profiling.

Soil is the skin of our planet, Earth, therefore, it is the foundation of all life. This is because all vegetation cover emanating from the soil is the main source of food to other wildlife. It is therefore important to conserve and maintain a healthy soil cover.



Fig 5: Enarau staff members digging out for sampling

A soil profiling activity was carried out on the conservancy's farmland area to identify different soil layers and type of soil. This activity involved digging a 2 ft. hole and examining the soil structure at various levels.

Soil profiling is key in establishing the health of our soil, which leads to informed decision making on the best landscape restoration methods to be used.

1.4 Use of soundscape acoustics in land degradation and ecosystem restoration

The initial partnership of Enarau Conservancy, CERK and NTU on the use of soundscape acoustics is ongoing. A PhD student, Consolata Gachoni, from NTU is currently undertaking research using soundscape technology in a bid to monitor conservation and restoration of degraded landscapes. She is incorporating the use of acoustics as a monitoring tool into the Land degradation and Surveillance Framework (LDSF) developed by ICRAFT. The research involves placing acoustic recorders to pick sounds from birds, bats, insects, and reptiles, which is then analyzed to know species characteristics throughout the study area. This data will be critical in making decisions on the next steps to undertake to ensure conservation success in Enarau Conservancy. She is also monitoring other aspects like vegetation, birds, and soil health using traditional methods such as transects, point count, and soil sampling.



Fig 6: Soundscape acoustics devices.

1.5 Assess ecosystem change in partnership with the Smithsonian National Zoo and Conservation Biology Institute.

Plans are ongoing to engage in a collaborative project with the Smithsonian National Zoo and Conservation Biology Institute. The project aims to monitor wildlife and livestock densities in response to vegetation changes. This will involve using high-resolution imagery from NASA and conducting ground truthing surveys with line transects to collect data on wildlife and livestock densities in relation to vegetation changes and water availability.. With the use of such technology, efficient monitoring and evaluation will be possible. This initiative, which is expected to roll out in September this year will represent a significant step towards integrating cutting-edge technology into conservation practices, and it will promote data-driven decision-making processes.

2. CONSERVATION AND RESTORATION

2.1 Expansion of Conservation Area

Many landowners are now willing to join the conservation efforts. This is a significant achievement for the conservation cause, which reflects a positive trend. Enarau conservancy is eager to take advantage of this opportunity for sustainable conservation if it receives financial aid. Ongoing engagement sessions with landowners and new conservancy members are taking place to ensure that the wildlife corridor is completely de-fenced by the end of the first quarter of next year.

2.2 Tree Nursery Program.

One of our main pillars is restoration of degraded forest areas and woodlands, this is only made possible by establishment of a tree nursery to supply tree seedlings. Enarau Conservancy is one among the few conservancies within the Maasai Mara ecosystem with an indigenous tree nursery. During the National Tree Planting Day and World Environment Day, our rangers and staff planted over 100 tree seedlings as part of our restoration efforts. As part of taking conservation efforts to the younger generations, Enarau Conservancy tree nursery donated 65 indigenous tree seedlings to Encheshoroi Dreamers Academy (EDA) pupils and educated them on the importance of conservation. EDA learners received conservation lessons from our research team leader, with assistance from our community liaison officer, 'let's learn and conserve'.



Fig 7: (Right) Pupils from EDA receiving the tree seedlings at Enarau tree nursery.

Fig 8: Victor, our monitoring lead educating EDA pupils on some of the tree species in our tree nursery



Fig 9: Edward Koisikir (ranger) during the previous World Environment Day

2.3 Rangers' update

2.3.1 Rangers patrol

Our team of eleven Rangers is safeguarding the conservancy's rich biodiversity by combating illegal activities. Through foot and motorbikes patrols conducted on a daily basis, both day and night, rangers covered a distance of 2303 kilometers for this Quarter. Our rangers are committed to preserving and restoring the unique habitats of Enarau Conservancy, this ultimately improves conservation of the Greater Maasai Mara Ecosystem.



Fig 10: (left) our rangers on a motorbike patrol (right) Rangers and KWS officers on foot patrol

2.3.2 Earth ranger software

All our rangers are fully trained on use of earth ranger software; this facilitates their daily activities. The data collected during patrols by use of earth ranger, helps in making informed decisions on conservation strategies. The data collected by this software includes monitoring of injured animals, wildlife sightings, human wildlife conflicts, illegal loggings, as well as real time monitoring of rangers daily patrols.

2.3.3 Partnership with KWS

We are delighted to mention our partnership with Kenya Wildlife Service (KWS). KWS have deployed two officers to Enarau Conservancy, who help in boosting conservation efforts. The services offered by these two officers have been critically important in protection of wildlife against illegal poaching and illegal logging within and outside Enarau Conservancy. This increased wildlife security and in response there is a notable increase in the number of wildlife inflow to Enarau Conservancy. This collective effort of KWS officers and Enarau Conservancy rangers is a noteworthy endeavor aimed at improving wildlife protection.



Fig 11: KWS officers and Enarau Conservancy manager, posing with Enarau rangers before going out for patrols.

2.5.3 Grazing management plan

Holistic grassland management is important in conservation; this reduces overgrazing that leads to land degradation.

Enarau Conservancy relies on a day to day grazing plan, which allows livestock to access different grazing zones (1,2,3 & 4) in different months of the year. Use of grazing zones reduces land degradation and at the same time improves soil fertility thanks to the animals' droppings. Illegal grazing is monitored by our rangers and addressed based on conservancy policies.

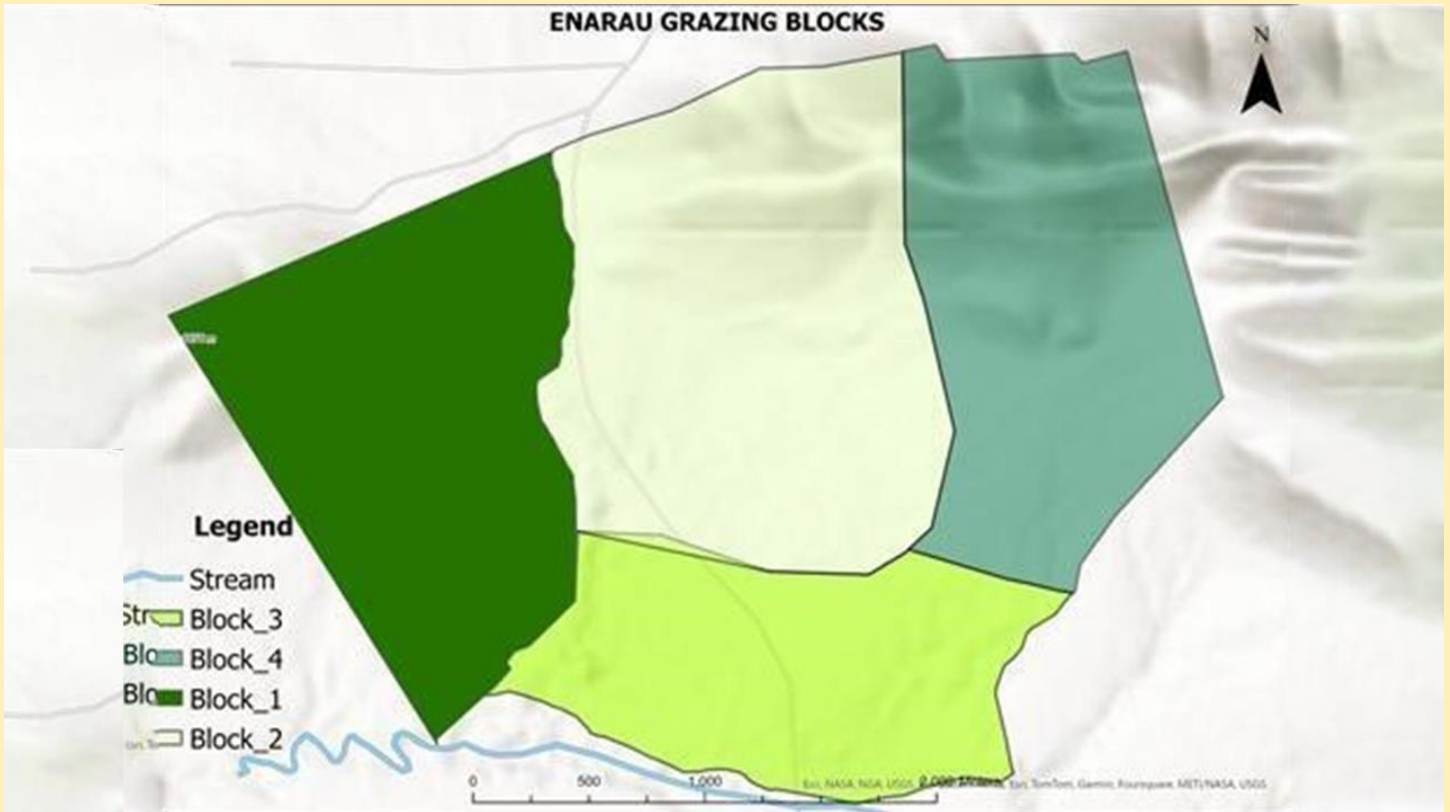


Fig 12: Enarau conservancy grazing blocks

2.6 Earth Watch Programme Assessment Visit

In collaboration with CERK, the Earthwatch Program was successfully launched at Enarau Conservancy in the month of June. Earthwatch Program partnered with Nottingham Trent University, in which the latter partnered with CERK which will be the implementing partner through Enarau Conservancy. The program involves a group of volunteers/participants who travel to different parts of the world to volunteer in restoration and research activities. The project commenced with assessment of the Enarau Conservancy being the host of the project. Enarau Conservancy hosted the Earth Watch Program Manager Dana Salomon, two Nottingham Trent University lecturers and CERK staff for a one-week assessment visit. The assessment went well and the Program has been approved to kick-off in January 2025. The Program will involve volunteers participating in various research and restoration activities such as vegetation survey, mammals survey, birds survey, tree nursery operations, and removal of invasive species. They will also undertake data entry, and to some extent data analysis. This project aims to provide volunteers with fieldwork experience in restoration and research, which ultimately contribute to the flourishing of conservancy's flora and fauna.



Fig 13a : Dana Solomon (Earthwatch program manager)together with our staff engaging in seed preparations in the tree nursery.



Fig 13b : Dana Solomon, Julius Gichira and Stew Thompson preparing soils for seed planting.



Fig 13c : Earthwatch Program Manager Dana Salomon, in the field removing invasive species using a jembe.

3. TECHNOLOGY

3.1 Camera traps and drone camera

Research team and rangers received adequate training on the use of camera traps. Camera traps are important conservation tools, particularly in monitoring. Data collected includes animals' sightings, illegal conservancy trespass, and illegal grazing. This data is analyzed and utilized in the process of making decisions.



Fig 14a: Bushbuck recorded by the camera trap at a water point.

Fig 14b: Common Zebras quenching an afternoon thirst, captured by a camera trap.

Use of drone cameras is undoubtedly an important tool in wildlife conservation. Fortunately, our conservancy corporal Jack Kauria was trained and licensed by Kenya Civil Aviatioskills for better results in future



Fig 15: Our corporal controlling a drone camera

3.2 Continued commitment to use of GIS in conservation

The Geographic Information System popularly known as GIS is a very powerful tool in the current world, capable of doing several tasks in the field of science. Our major pillars on conservation, restoration and research all in one way or another are complemented/dependent by/on the GIS technology.

Enarau Conservancy rely on the direct use of GIS technology in the following core areas:

Ranger Patrol and Monitoring

GIS technology has made it possible to closely monitor our rangers' movements and patrols through the use of a powerful software known as Earth Ranger. Through the Earth Ranger software, we are able to capture the total distances covered by our rangers on patrol, we are also able to capture the various routes taken by the rangers during patrol. All these ranger patrols can be captured in real-time and recorded duration, meaning we can tell what distance

was covered in a day, a week, fortnight, month or even three months. At the same time, we can tell where a ranger was at a specific time just by using the Earth Ranger patrol monitoring system.

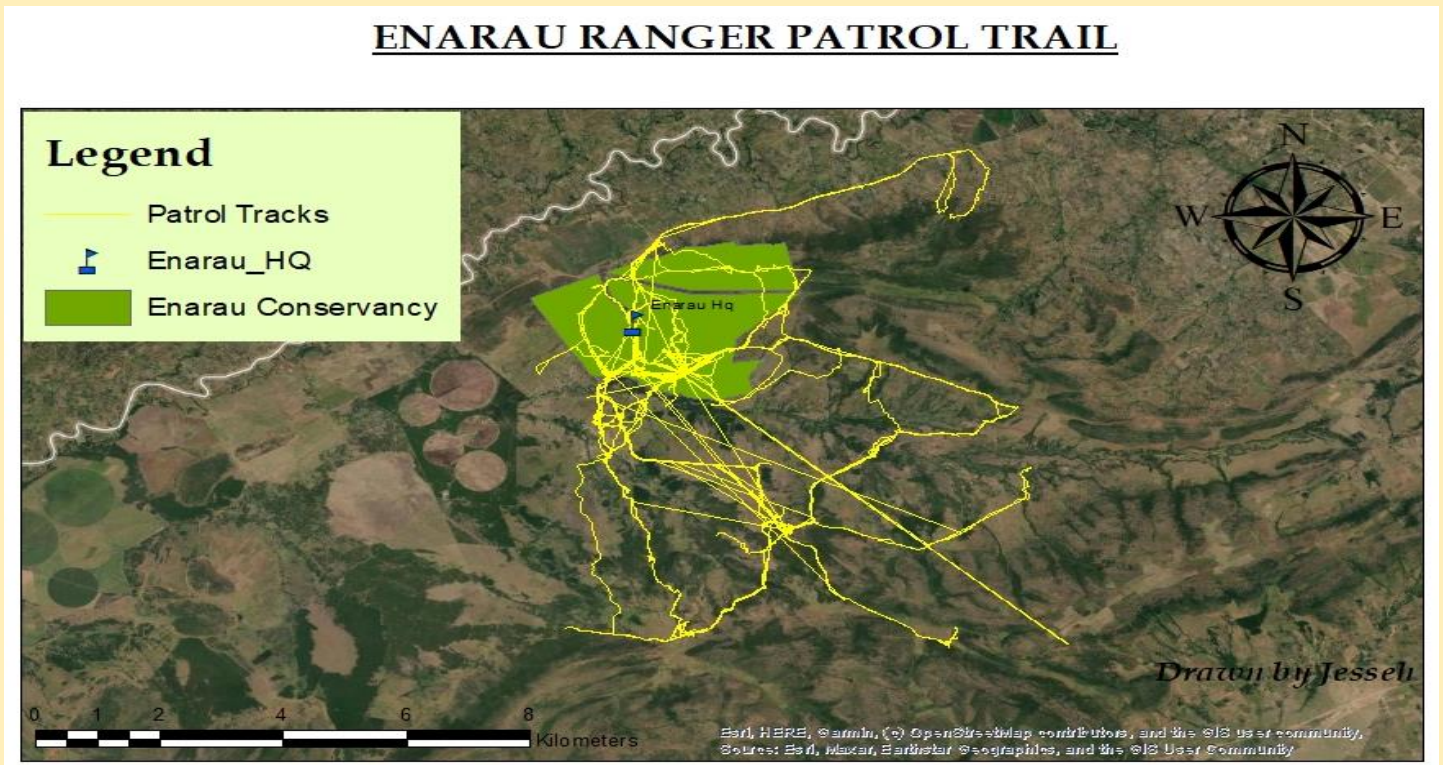


Fig 16: A google map showing rangers' patrol tracks

Event and Incident reporting

In order to closely monitor the progress and efforts by the Conservancy, it is important to have a means of reporting events and incidents that occur within the conservancy. Events such as illegal logging, charcoal burning, illegal grazing, wildlife sighting, animal control, etc. All these events are captured and recorded in our Earth Ranger Pamdas software account.

Map generation

GIS is a tool that is popularly known for generating maps of several kinds. At Enarau Conservancy we apply it to make and generate geographical maps of the conservancy, wildlife corridors, map of ranger patrols, animal habitats, conservation areas, etc.

ENARAU CONSERVANCY BOUNDARY

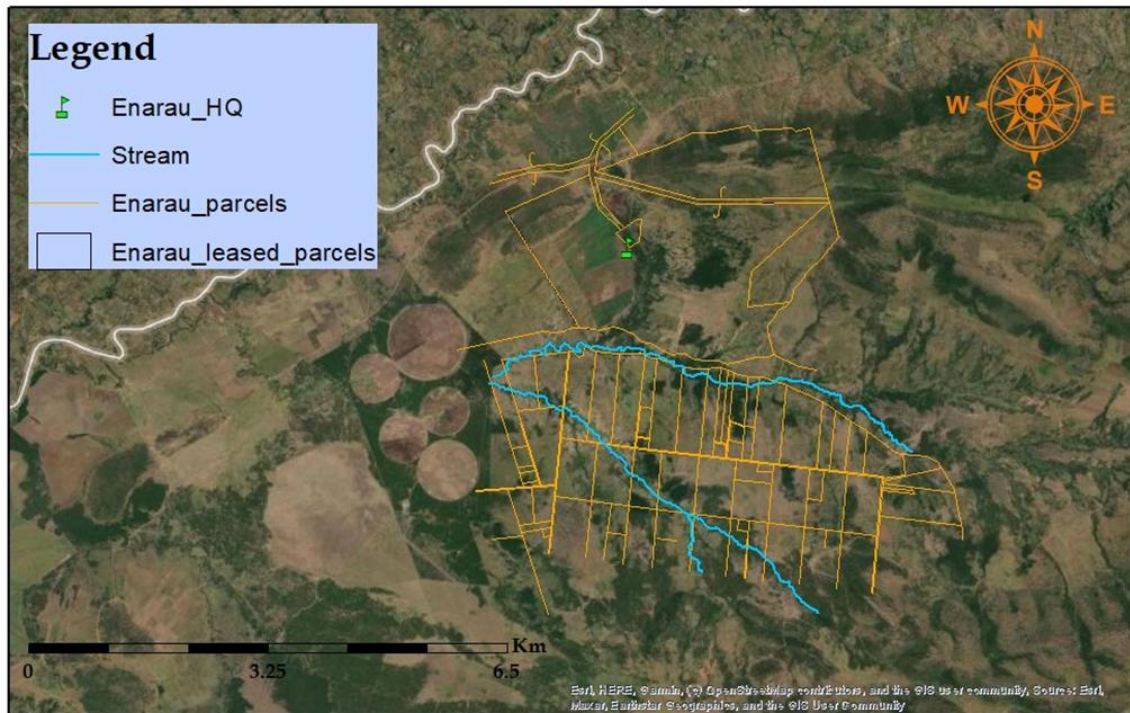


Fig 17: *Enarau Conservancy plots*

Research

In the world of research, it is almost impossible to exclude GIS technology from research work. The application of powerful GIS software such ArcGIS, Q-GIS, Google Earth are among the popular ones used to aid in data processing and analysis which later generates spatial maps. The conservancy research team makes good use of the technology in determining data collection locations and in the monitoring and evaluation.

4. COMMUNITY WELLBEING

4.1 Community engagement on Restoration and conservation

The conservancy management organized an interactive meeting with members from the Laila/Emorijoi community on a conservancy sensitization program.

Community members had the opportunity to visit Enarau Conservancy and enjoy a blissful environment full of new life, later on had an interactive session with the conservation and restoration participants from CERK and Nottingham Trent University. During this session, community members shared their knowledge of Enarau and surrounding landscape and its changes for over 50 years. This information is key as it forms part of traditional ecological knowledge, which is crucial in restoration activities. Importance of conserving the environment, the role of visitors in supporting conservation efforts, and how the community can actively participate in these initiatives was discussed exhaustively. It involved presentations and discussions aimed at engaging the community and putting emphasis on the significance of their involvement in conservation activities. This created a strong bond between community members and conservation agents, fostering a sense of shared responsibility in environmental conservation. The meeting was insightful in regard to restoration and conservation within Enarau Conservancy and its environs.

4.2 Proposal on establishment of a Cultural Center

During the conservation engagement between Laila community, CERK and Nottingham Trent University, community members had a privilege to showcase and sell their bead work items to our visitors. This is in line with our pillar of community wellbeing. Our community liaison officer Elizabeth Kuel together with Enarau Conservancy management are currently working on a proposal to establish a cultural center. The cultural center which will be established at the wildlife corridor will improve the livelihood of our community. Community members will have a chance to showcase Maasai cultural dances, sell of bead work products and other cultural artifacts. This will foster conservation, as this will give them an alternative source of livelihood, hence reducing degrading agricultural activities. We are hopeful to open up our cultural center to full operation in the first quarter of next year, this will be possible if we get the necessary support.



Fig 18: (Right) Enarau Conservancy community members in a cultural dance. (Left)Members of the community posing for a photo after a community interaction session with CERK and NTU staff members.



Fig 19:(Right)Community members displaying beadwork. (Left) Enarau Community members selling beadwork to visitors from BioNest international.

5. CHALLENGES

Enarau Conservancy is making notable progress in its four strategic pillars, however, accomplishing its mission and vision is hindered by a few challenges mentioned herein;

- Power outage due to over reliance on solar system power supply, this challenge easily be solved by connection to the main power grid.
- Lack of proper working Office space, for our staff and scientific researchers limits the conservancy's productivity.
- Lack of decent staff accommodation units, hence limiting our conservancy operations.
- Ongoing cultivation on the eastern sides of the conservancy and the wildlife corridor hinders free flow of wildlife, to have more land on these parts under conservation boost wildlife inflow.

- Our current annual lease fee per acre is lower compared to nearby conservancies and cultivation lease ratings. This is a big challenge that can only be alleviated with more donations in future.
- Human-wildlife conflict; crop raiding by elephants and Zebras, Livestock attacks by predators.
- Poor network service providers have hindered proper communication and sometimes smooth real-time tracking, this necessitates acquisition of network booster, especially for Enarau Conservancy HQ.

CONCLUSION

In summary, Enarau conservancy has made tremendous strides in achieving its mission and vision as outlined in the strategic plan. As per our four pillars; research achieved its objectives by setting line transects set to monitor birds, mammals as well as woodland. Soil profiling is notably done to assess the possibility of vegetation regeneration based on soil health. Under conservation, more lobbies on land acquisition are ongoing majorly on the eastern side of Enarau conservancy as well as the wildlife corridor. Daily patrols by rangers, tree planting and management of grazing land are the main activities in a day to day operation of the conservancy.

Use of GIS, camera traps, earth ranger software, digital camera and training on use of drone cameras forms part of technology integration in conservation efforts. This has ease conservation as well as giving better ways of monitoring its progress. Community wellbeing is important in conservation and restoration, therefore engaging the surrounding communities is mandatory. Engaging community members give insight especially on traditional ecological knowledge, which is so important in restoration strategies. Establishment of a cultural center, additionally is a bolster to conservation since it gives locals an alternative source of capital apart from agriculture. Despite the challenges faced in conservation, Enarau Conservancy still made significant strides, which can further be amplified once the challenges are addressed in future.