



INTER-GOVERNMENTAL AUTHORITY ON DEVELOPMENT (IGAD)
THE BIODIVERSITY MANAGEMENT PROGRAMME IN
THE HORN OF AFRICA (BMP)
CROSS BORDER EXCHANGE TOUR TO MPALA RESEARCH CENTRE



Report Prepared By; Grace Koech, Josephat Nyongesa And Wilfred Muriithi 2017.

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ACKNOWLEDGMENT

ICRAF would like to thank the members of the cross border dialogue platform coordinated by the IGAD BMP project for participating in the cross border learning. Our sincere gratitude goes to Mpala research center for hosting the team and for sharing their research findings with the participants. All the persons involved in the planning process are acknowledged.

1 EXECUTIVE SUMMARY

IGAD BMP project implemented by ICRAF enhances cross border collaboration in biodiversity management by the member states through, among other things, organizing cross border learning. This year a group of 27 participants from Somalia, Djibouti and Kenya visited Mpala research center to learn from the research findings on biodiversity and how it could inform governance and policy.

During the visit, the participants learned from knowledgeable scientists, visited experimental plots and plenary sessions which was very insightful. It was evidenced that biodiversity conservation is a cross border issue since wildlife have no boundary hence need for cross border collaboration. Notably, the issue of incorporating biodiversity issues in the curriculum was raised. Mpala research has initiatives which allow students to participate in a number of conservation related issues such as vaccination of dogs, head counts of wildlife. Through this, students have learnt the importance of wildlife and are thus willing to conserve them.

2 The Visit

The cross border exchange visit to Mpala research center was for two days as discussed in the section below;

Friday, April 21, 2017

Welcome talk by Dr. Dino Martins (Executive Director)

Dr. Dino Martins welcomed participants to Mpala and gave them a brief introduction of Mpala. He noted that the center is home to nearly 7,000 elephants, the world's 4th largest African wild dog population, and the globally endangered Grevy's zebra. These large populations of wildlife mingle alongside herds of livestock as they traverse between private and pastoralist ranches. Further, Mpala is committed to using research to benefit the surrounding communities through multiple educational outreach programs in order to tackle issues of human-wildlife conflict and thus ensure that both conservation and human-livelihood goals are met.

He then wished the participant a successful mission applauding the able scientist in the center who will take the participants through various talks and demonstrations in the field.

Rangeland Management: Lessons from Ecology

Dr. Duncan Kimuyu

Rangelands are grasslands, shrublands, woodlands, wetlands, and deserts that are grazed by domestic livestock or wild animals (*Wikipedia*) which contributes to 40% of the landmass of the world. Globally, livestock shares land with wildlife. This calls for experiments that examine the separate and interactive effects of both guilds on each other and on their ecosystems.

With the need, Mpala research center set up the Kenya Long-term Exclosure Experiment (KLEE) in 1995. The experiment had six combinations of large mammalian herbivores as show in the table below;

Table 1: six combinations of large mammalian herbivores used in the experiment

Mega herbivores and wildlife	Wildlife only	No cattle no wildlife
Mega herbivores, Cattle and wildlife	Wildlife and cattle	Cattle only

The results of the experiment demonstrated that Wildlife compete with cattle during the dry season, but facilitate cattle during the wet season. **In turn, cattle competitively suppress most wildlife species. However;** cattle impact on wildlife depends on the season – less severe during the wet season, cattle impact also depend on whether elephants are present. Overall, negative

effects of cattle are much less in presence of elephants. Cattle (only) create ephemeral patches of plant diversity, but only in rainy periods after droughts.

Although some aspects of livestock management benefit wildlife, livestock production reduces wildlife overall. We may increase compatibility, but not eliminate conflict. At moderate densities, livestock production can be compatible with biodiversity.

He also mentioned the relevance of fire in the savanna as; most trees survive direct effects of fire, although the survival varies across tree height class. Notably, elephant browse damage is more in burnt areas than unburnt areas. Nonetheless, fire present a potential for more synergies herbivore interactions.

Table 2: Plenary based on discussion on rangeland management

Questions/comments	Responses
How are rangeland maintained?	Through herbivory and by fires
What is the criteria used in recruiting the landowners	we rely on the goodwill from the land owners
How can use be sure that animals remain within the plots?	The experiment is controlled, there is fence around the plots.
The livestock grazing in the area is common how does that happen?	There is a cordial relationship between livestock and wildlife

Field visit “Preserving Biodiversity in Savanna Ecosystems”

Dr. Duncan Kimuyu and Kimani Ndung’u

Traditional enclosures

After abandonment, the traditional cattle enclosures, these bomas develop into ‘glades’ that last for many decades. This glades serves as the ecosystem heartbeat of the savanna mosaic and are highly desirable for both livestock and wildlife.



Traditional enclosures for pastoral communities, source Mpala research center

Visit to termite sites

Mounds made by termites can prevent the soil from drying up and become barren especially in agricultural lands and other environment where land is thin. Termites may not directly be the source of help but its mounds are very useful for soil to withstand climate change.

Table 3: Plenary based on field visit

Questions	Answers
How termites influence the local environment	They promote water retention and soil aeration in the environment
How are termites channels formed?	The site is modified to increase water retention and soil aeration.
Termites can address the issue of food security as they can be used as proteins	
What is the effect of different amount of water on the termite's molds?	It affects the size of the mound.

Talk on Dogs

Dedan Ngatia

The wild and domestic dogs share space use, shared pathogens and their routes of transmission are similar. Based on research, domestic dog abundance is increasing on global scale which is

associated with human population growth. The dogs have different roles which include, herding, security and as pets. Both wild and domestic dogs are affected by and can transmit rabies.

Rabies is a deadly disease which can be prevented through vaccination. Mpala launched campaign to vaccinate the domestic dogs. Vaccination is aimed at eliminating rabies.

Table 4: Plenary based on discussion about dogs

Questions	Answers
What is the lifespan of dogs?	10-20 years
How long does it take from been bitten by a dog to getting rabies?	72 hours
How much does it cost to vaccinate a dog?	Mpala charges Ksh 60 per dog while the government rate is at Ksh 100 per dog
Cross border movement of dogs provide an avenue for cross border collaboration	Wilds dogs can travel miles away and cause damage in the new site and non at their residential area

Saturday, April 22

Visit to Mpala Ranch Cattle and Camel Bomas

The participants visited the cattle and camel bomas within the Mpala research center.

Role of Research in biodiversity management/Conservation

JOHN M. KIMANI

Mr. Kimani mentioned two main strategies involved in biodiversity conservation. Hotspot approach looks at the economic priorities vs partial response but leaves out the cold spots. Comprehensive approach considers both hot spots as well as cold spots. Cold spots include Soda lake microorganisms which harbor several biotechnologically relevant enzymes and biomolecules for example, cellulases and amylases. The enzymes and biomolecules can be used medically but culturing it within rodents such as naked mole rat and African spiny mice.

He thus emphasized the need for bioprospecting efforts in different ecosystem with new integrated approaches to ensure biodiversity conservation. Importantly, all ecosystems around the world need to be protected from anthropogenic pressures that threaten their long-term existence.

Community-Based Conservation: Involving Children in Conservation

Anchal Padukone

Aside from research, Mpala research center help children in Laikipia understand the connections between wildlife, the landscape and their livelihoods. This is achieved through;

outdoor activities, experiential learning, awareness on need for action, teachers training, strengthening partnerships



Students been taught based on observation in the field, source Mpala research center, 2017



Student involved in an outdoor activity source Mpala research center, 2017



Students engaged in uprooting invasive species within Mpala, source Mpala research center, 2017



Teacher been trained on conservation issues source Mpala research center, 2017



Involving all the stakeholders in conservation related matters source Mpala research center, 2017



Enhancing use of indigenous knowledge source Mpala research center, 2017

Conclusion and Recommendations

The visit was a successful. The following were the recommendations from the visit;

1. The need to include biodiversity conservation in school curriculum
2. Use of indigenous knowledge to foster biodiversity conservation
3. Need for cross border collaboration in wildlife conservation

List of participants

<u>SOMALIA</u>	<u>Affiliation</u>	<u>Email</u>
<u>Mohamed Yusuf Omar</u>	<u>Ministry of Environment, Energy and Minerals</u>	dalacada18@hotmail.com
<u>Abdullahi Hassan Kahin</u>	<u>Badhaade District</u>	-
<u>Ali Said Awol</u>	<u>Local Community</u>	-
<u>Abdikarim Mohamed Hersi</u>	<u>Somalia Wildlife Authority</u>	hersisom2000@hotmail.com
<u>Mahamad Ahmed Ali</u>	<u>Ministry of environment and tourism</u>	moet@jubalandstate.so
<u>Abdimalik Abdullahi</u>	<u>IRDO</u>	iimaan.org@gmail.com
<u>Abdulahi Mustafa</u>	<u>Savana</u>	savanaconsultancy@gmail.com
<u>Mohamud Ahmed Madey</u>	<u>Ministry of Environment, Energy and Minerals</u>	Madeyma4@gmail.com
<u>KENYA</u>	-	
<u>Joseph Kanyiri</u>	<u>County Commissioner - Lamu</u>	lamucounty12@yahoo.com
<u>Mohammed Baddi</u>	<u>Community Witu</u>	sanye_2009@hotmail.com
<u>Haji Mohamed Ali</u>	<u>NMK - Lamu</u>	alihajimohamed@yahoo.com
<u>Jackline Mutwiri</u>	<u>KWS - HQ</u>	jmutwiri@kws.go.ke
<u>Bashir Salim</u>	<u>NEMA -Lamu</u>	saleemke@yahoo.com
<u>Jacob Orhale</u>	<u>KWS-Lamu</u>	jorahle@kws.go.ke
<u>James Mwang'ombe</u>	<u>KFS - HQ</u>	mwangombejames@yahoo.co.uk
<u>Maneno Evans</u>	<u>KFS - Lamu</u>	evansalwenam@yahoo.com
<u>ISSA Elmi</u>	<u>NEMA - Nairobi</u>	ielmi@nema.go.ke

<u>Kaviha Khamis</u>	<u>CEC trade, Tourism and Forestry</u>	<u>KavihaKhamis@yahoo.co m</u>
<u>Eric Randu</u>	<u>Lamu County Government</u>	<u>Erandu77@gmail.com</u>
<u>Mohamed Mwenje</u>	<u>NMK-Lamu</u>	<u>mamwenje@yahoo.com</u>
<u>Stephen Sangolo</u>	<u>Interior, lamu</u>	<u>sksangolo@gmail.com</u>
<u>Kareko Kiunga</u>	<u>WWF</u>	<u>KKareko@wwfkenya.org</u>
<u>ICRAF</u>	-	-
<u>Wilfred Muriithi</u>	<u>ICRAF</u>	<u>w.muriithi@cgiar.org</u>
<u>Josephat Nyongesa</u>	<u>ICRAF</u>	<u>j.nyongesa@cgiar.org</u>
<u>Grace Koech</u>	<u>ICRAF</u>	<u>g.koech@cgiar.org</u>
<u>IGAD</u>	-	-
<u>Serge Darozze</u>	<u>IGAD</u>	<u>serge.darroze@igad.int</u>

Schedule for Biodiversity Management Program Stakeholder Visit to Mpala Research Centre, Laikipia

Friday, April 21

8:00 am: Arrival at Mpala Research Centre

8:10-8:30 am: Welcome talk by Dr. Dino Martins (Executive Director) and Mpala management team: **“Mpala Research Centre and Ranch: Living with Wildlife Sustainably”**

- Historical background: From “Mpala Farm” to “Mpala: Research, Conservation, Education and Outreach”
- Local community involvement in research and conservation
- Sustainable infrastructure at Mpala

8:30-9:00 am: Talk by scientist Dr. Duncan Kimuyu: **“Rangeland Management: Lessons from Ecology”**

- Brief description of the project
- Applications of research findings to rangeland management

9:00-9:20 am: Tea break

9:20 am-1:00 pm: Field visit with Dr. Duncan Kimuyu and Kimani Ndung’u **“Preserving Biodiversity in Savanna Ecosystems”**

- Visit to KLEE Plots: How different conservation scenarios/ management regimes affect the environment
- Relationship between soils and vegetation
- How termites influence the local environment
- Invasive species control – *Opuntia stricta* spread, management and challenges

1:00-2:00 pm: Lunch

2:00-2:30 am: Talk by biologist Dedan Ngatia

- Kenya Rangelands Wild Dog and Cheetah Project
- Human-wildlife conflict and community outreach
- **Laikipia Rabies Vaccination Campaign: How to Start a Research-Driven Outreach Campaign**

2:30-4:30 pm: Wild-dog tracking with Dedan Ngatia

4:30-5:00pm: Tea break

5:00 pm: Depart to Nanyuki

Saturday, April 22

8:00am: Arrival at Mpala

8:00-10:00am: Visit to Mpala Ranch Cattle and Camel Bomas

10:00-10:30am: Tea

10:30am-12:00pm: Talk by biologist Steve Ekwanga: **“Lion Conservation and Challenges: Mitigating Human-Wildlife Conflict”**

- Lion-tracking and geofences
- Other solutions to human-lion conflict
- How this model could be applied to other wildlife conflicts
- Q & A/ Group discussion on human-wildlife conflict and possible solutions

12:00-12:40pm: Plenary discussion **“Achieving Conservation and Livelihood Goals”**

- How can cattle and wildlife coexist? How can human communities coexist with wildlife?
- How can we partner with different stakeholders and promote sustainable use of natural resources in our communities and beyond? (through ecotourism, educational programs, community-based conservation, etc.)
- Experience-sharing among participants

12:40pm: Group photo

- Participants can sign our Visitor’s Book and share their contacts with us if they would like to be on our mailing list

1:00-2:00pm: Lunch

2:00-4:00pm: **“Community-Based Conservation: Involving Children in Conservation”**

- Presentation: lessons we have learned about how to involve young children in conservation
- Visit to a Conservation Club project (Mpala Academy cochineal house): *Opuntia stricta* biocontrol and challenges

4:00-5:30pm: Game drive

