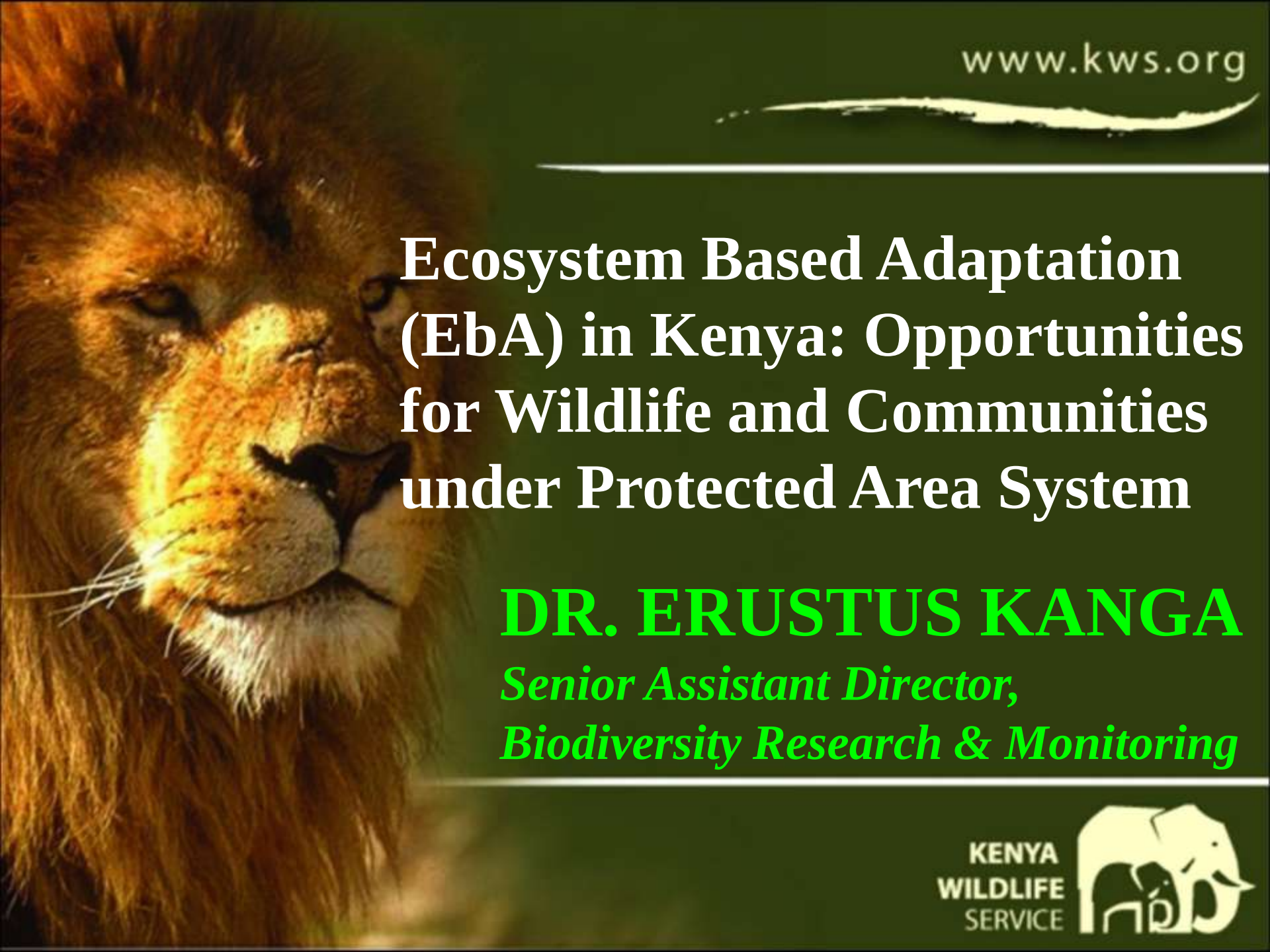
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Ecosystem Based Adaptation (EbA) in Kenya: Opportunities for Wildlife and Communities under Protected Area System
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KENYA WILDLIFE SERVICE

WHERE IS KENYA?

- ✓Africa
- ✓East Africa
- ✓582,646 km^2
- ✓42 Million people

RATIONALE

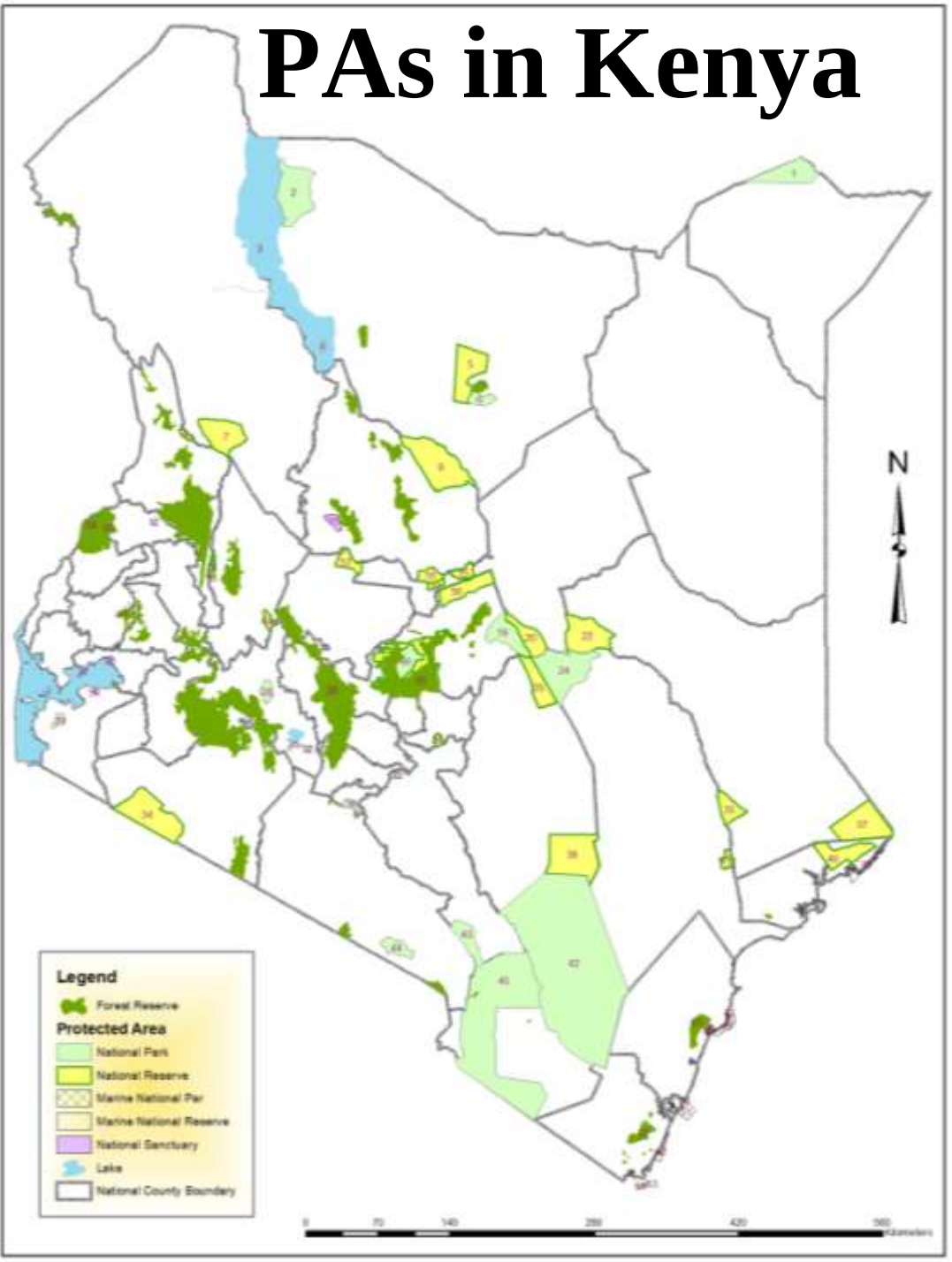
Building resilient ecosystems and communities through ecological restoration in and around Protected Areas (PAs) in Kenya

i. Well-functioning, well-connected networks of Protected Areas are increasingly being recognized as an essential part of the global response to climate change.

ii. Protected areas enhance ecological, social, and economic resilience to climate change, protect natural carbon reservoirs, and respond to national and local development needs such as water resources, disaster risk reduction, and coastal zone management.

iii. Ecological restoration, both in and around protected areas is often essential for maintaining or restoring these important climate change adaptation and mitigation functions.

PAs in Kenya



24 National Parks
27 National Reserves
203 Forest Reserves
4 Marine NP
6 Marine NR
4 Sanctuaries

- ✓ About **12%** area
- ✓ Several PAs listed as:

a) **World Heritage Sites;**

b) **RAMSAR Sites, and**

c) **Biosphere Reserves**

PAs IN KENYA

- The regulating services of Kenya's PA ecosystems are important production factors to **the agriculture, forest and fishing sectors, the electricity and water sectors, tourism** (hotels and accommodation sector), **and community households**.

- These sectors, together, contributes **between 30-40% to the National GDP**.

- In addition, these sectors have a **significant multiplier effect** on the rest of the economy's GDP.

EbAs IN KENYA

Water is the common denominator:

- ✓ **Water shapes ecosystems and livelihoods**
- ✓ **Most climate impacts are felt through the water cycle**
- ✓ **Water management determines our ability to cope.**

OPERATIONAL PILLARS

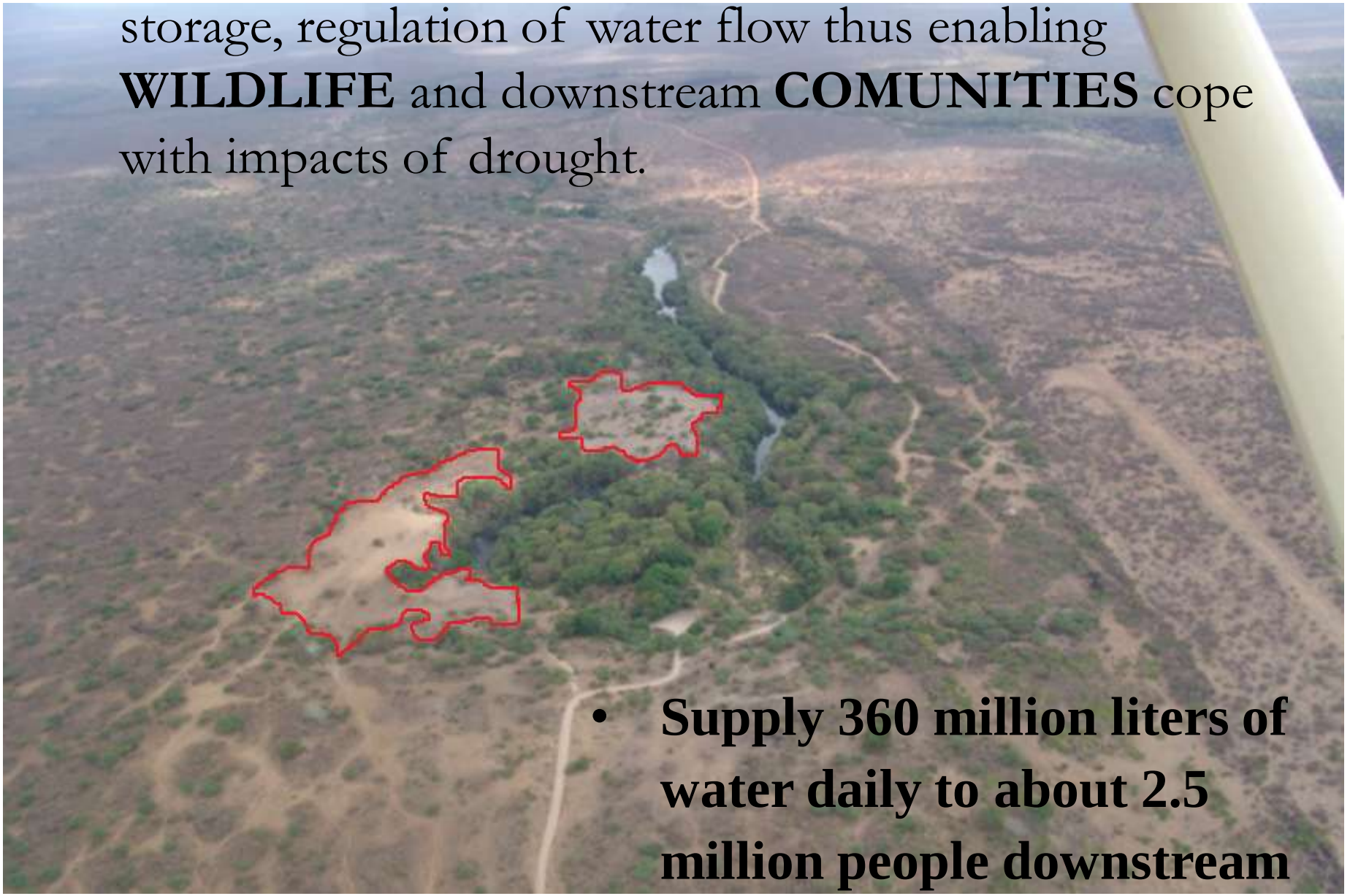
1. **Conservation Actions**
2. **Visitor Experience**
3. **Public Education and Awareness**

OUR CONSERVATION ACTIONS

CONSERVATION ACTIONS

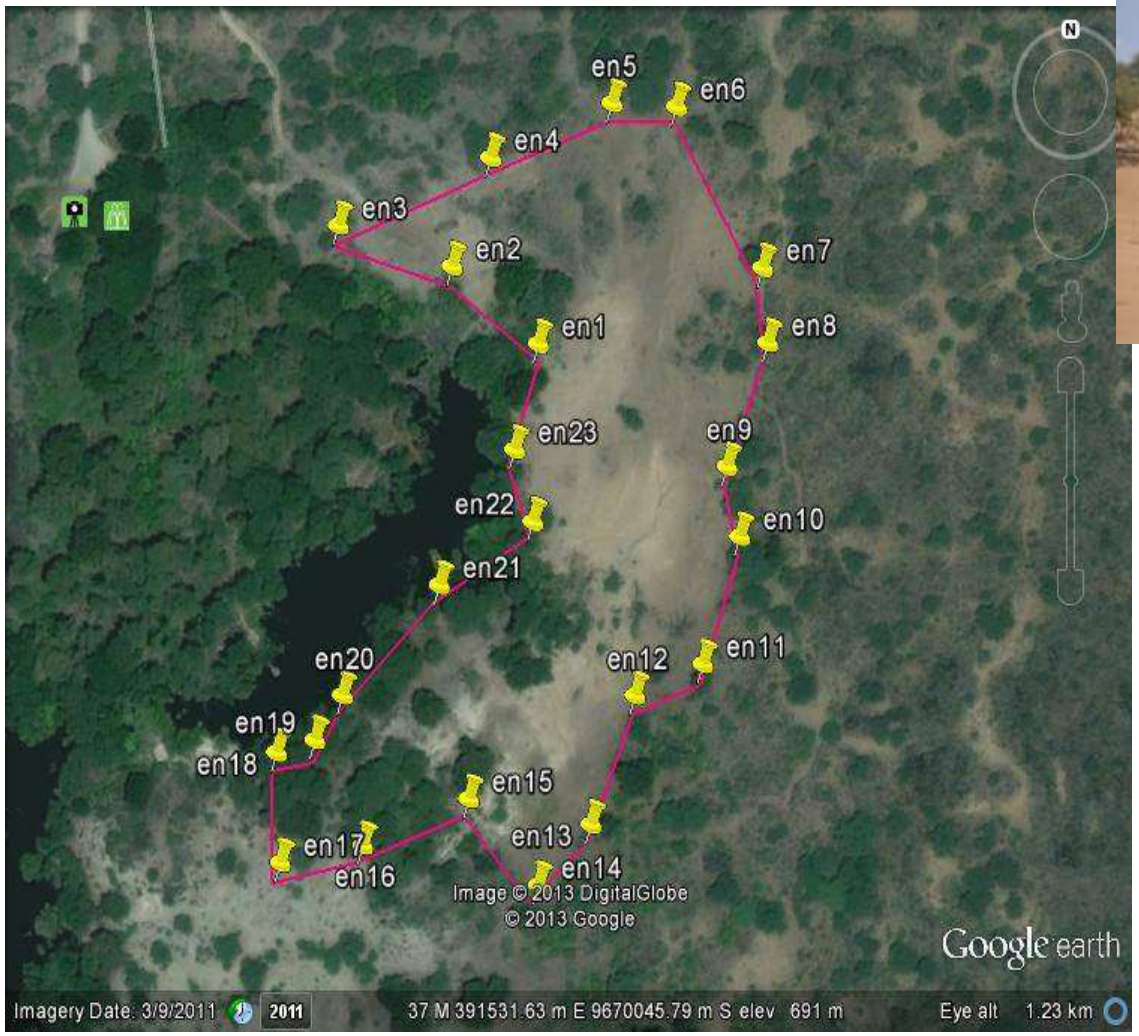
1. Rehabilitation and Restoration of degraded natural areas (wetlands, forests, savannah).
2. Enhance water storage capacity for wildlife and communities
3. Enhancing PA connectivity through corridors
4. Protecting and restoring natural infrastructure
5. Management and Control of invasive species in PAs

1. **Rehabilitation degraded natural areas** to enhance critical ecosystem services, as water recharge and storage, regulation of water flow thus enabling **WILDLIFE** and downstream **COMUNITIES** cope with impacts of drought.



- **Supply 360 million liters of water daily to about 2.5 million people downstream**

CONSERVATIONS ACTION



1. Mapping out the degraded area.
2. Construction a wildlife ex-closure to protect degraded area.
3. Construction of watering point equipped with a solar pump to provide alternative water to wildlife.

RESULSTS AT MZIMA SPRINGS

1. Electric fence around the Spring

2. Pump house, complete with solar power

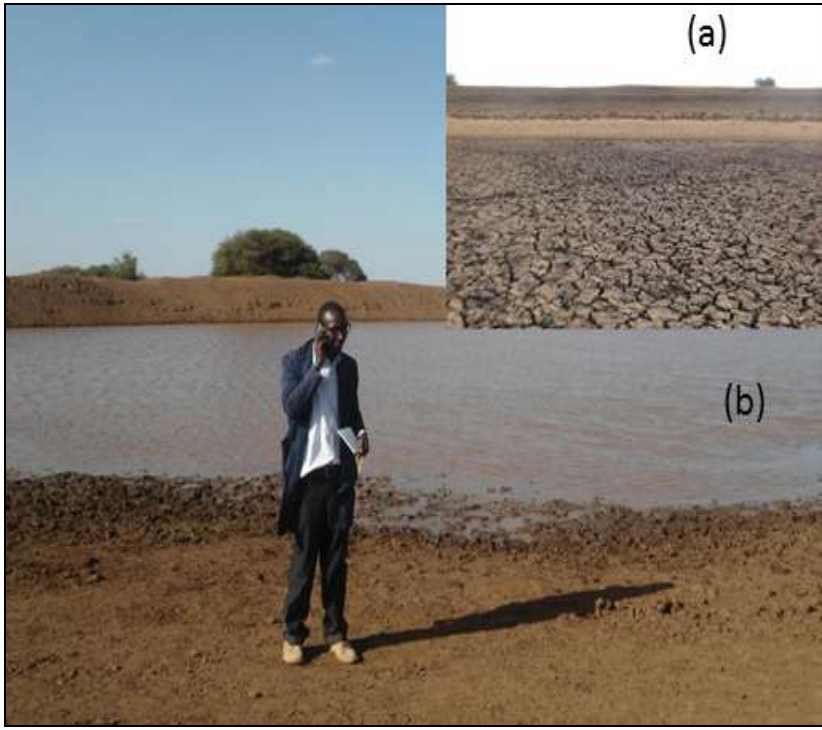
3. Alternative Watering point for wildlife

RESULSTS TSAVO AND AMBOSELI

Restored enclosure (less about 1 year)

- ✓ **Habitat Restored to protect springs and enhance forage.**

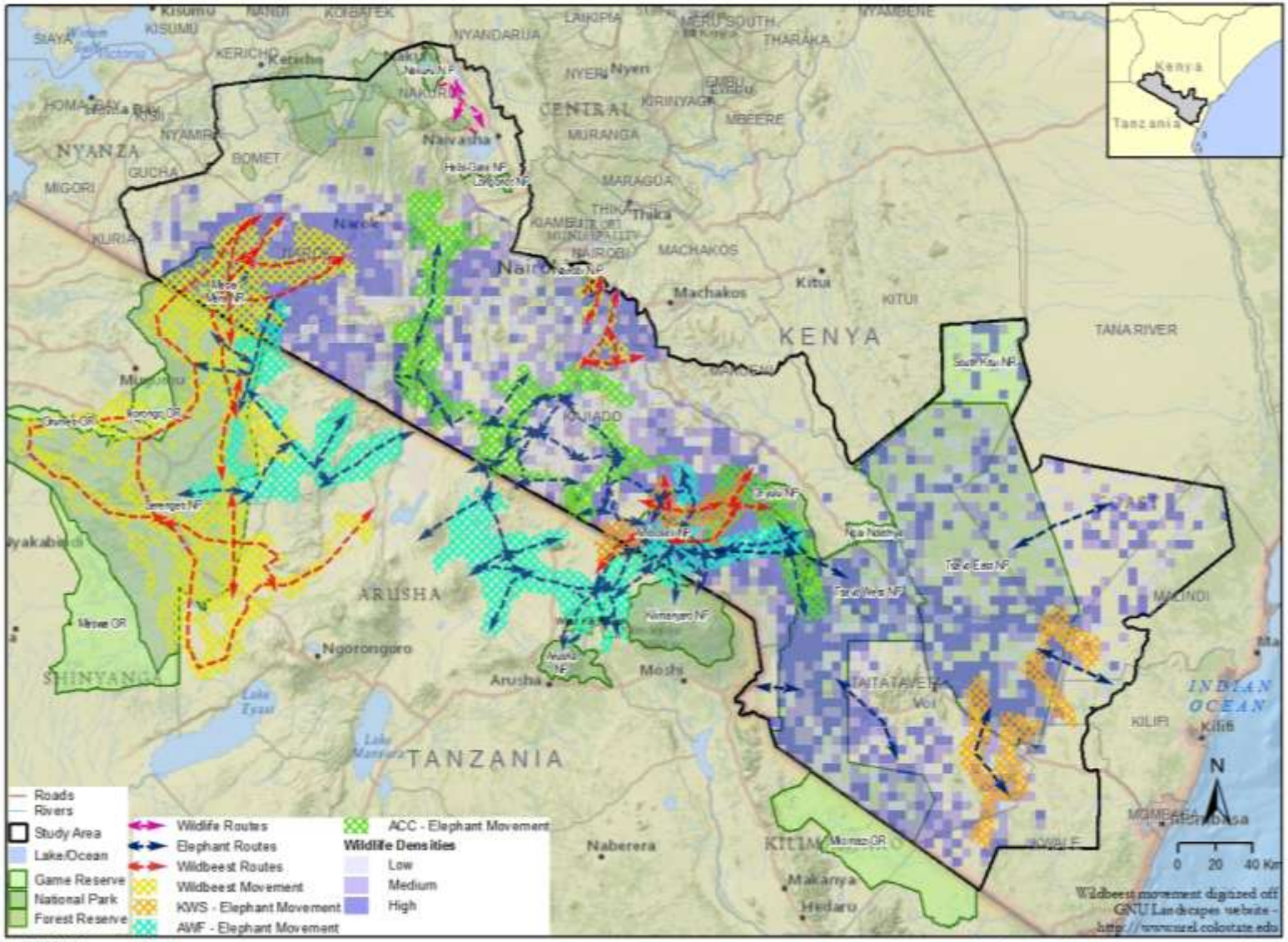
2. Enhance water storage capacity for wildlife and communities



✓ **Provision of water harvesting/pan to wildlife and communities**

Nkiito dam (a) before and (b) after de-silting in Amboseli ecosystem: The water pan is holding water from one month before de-silting to 4 months after de-silting.

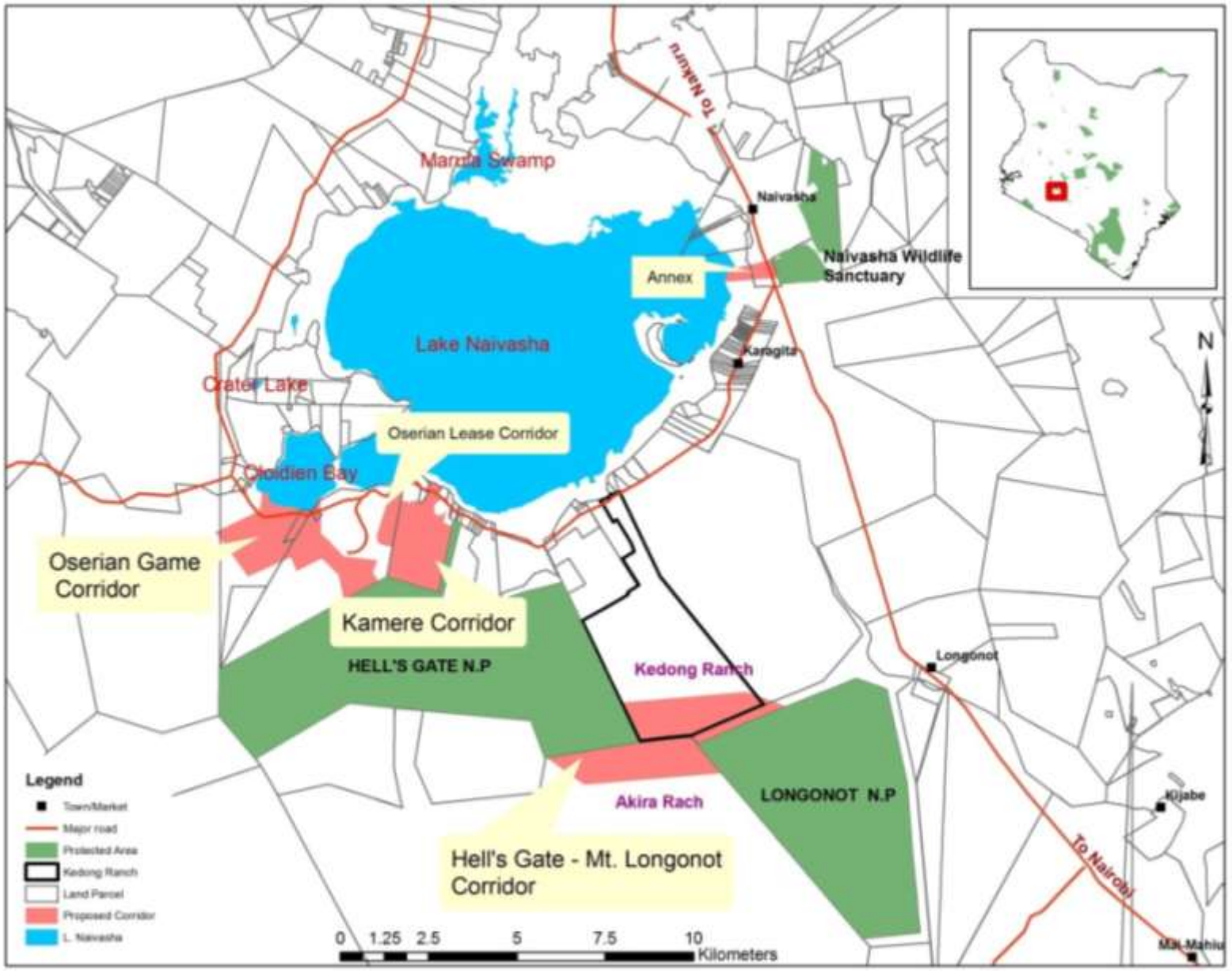
3. **Connecting** different ecosystems and habitats to enable people and biodiversity to access resources and move to more viable habitats as the climate changes.



Wildlife Movement Routes

Source: DRSRS,AWF, ACC, ILRI, KWS, Colorado State University, ESRI, Nat-Geo World Map

✓ Mapping and securing corridors and dispersal areas: Naivasha experience



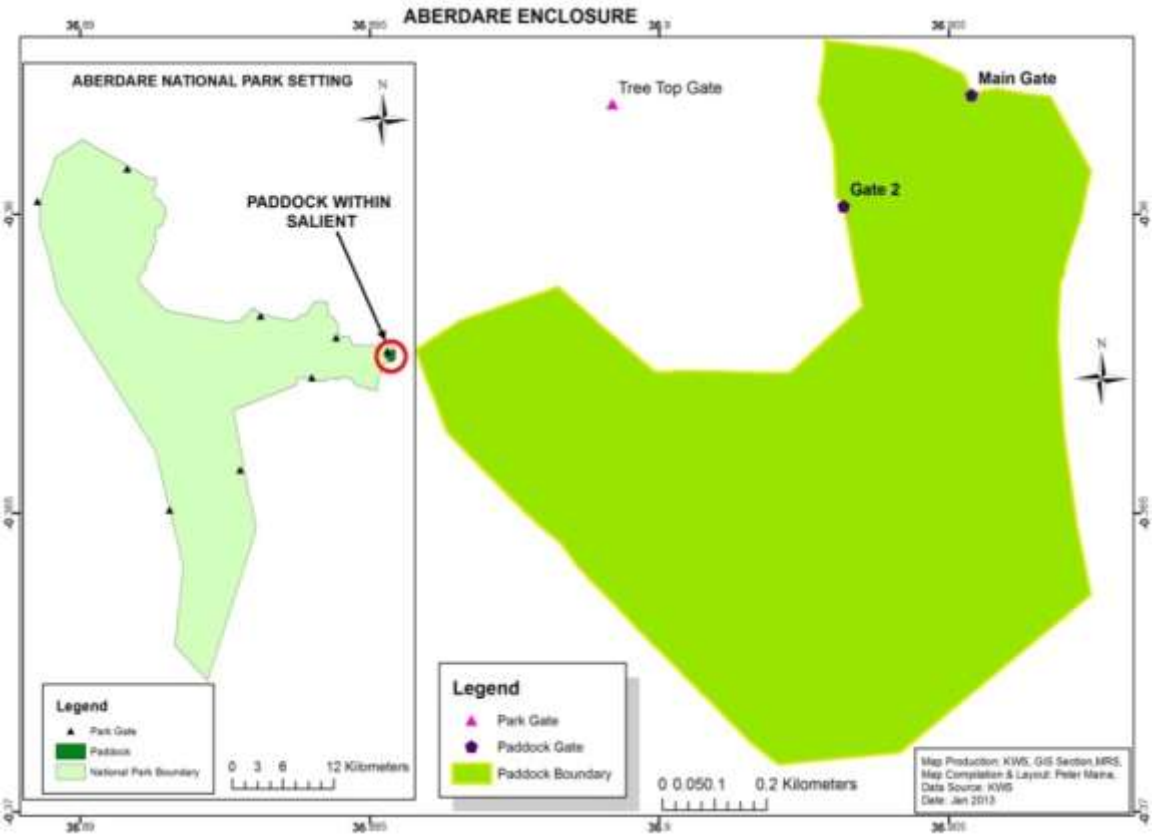
Wildlife underpass and over pass, Mt. Kenya and Laikipia

4. **Protecting and restoring natural infrastructure** such as mangroves, and forests to buffer human communities from natural hazards, erosion and/or flooding.

Mt. Kenya Forest

Aberdares Range Forest

Reforestation/Restorations



1. Mapping out the degraded area
2. Construction reforestation enclosure to protect degraded area
3. Establishment of modern tree nurseries, including some for communities
4. Training of community members

- ✓1,000,000 seedlings in nurseries and greenhouse
- ✓78% survival rate recorded (**growing not planting**)
- ✓Enclosures in Amboseli, Tsavo + others

Training of Community members and CFAs in modern seedling production to increase efficiency in production

Community members, School children and College student **Participating in tree planting**

RESULTS AND IMPACTS

Healthy systems are more resilient to climate extremes and provide networks along which species can migrate

Annual Wildebeest migrations is assured with flow of Mara river and stabilized micro-climate.

GENERAL RESULTS:

1. Lowered Human-Wildlife Conflicts
2. Improved habitats and range condition in park

5. Management and Control of invasive species in PAs

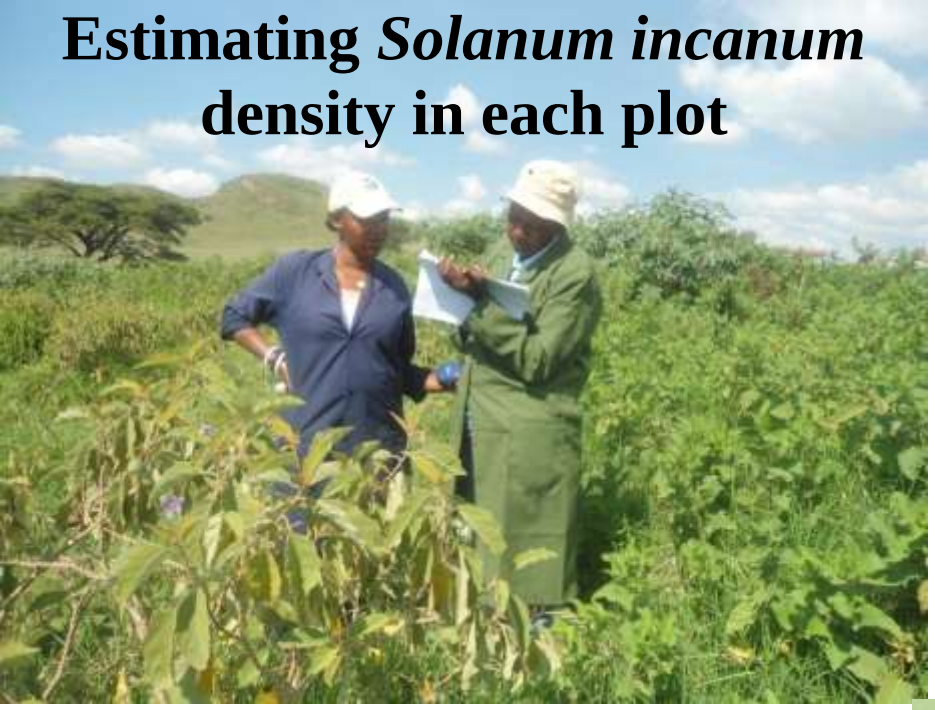
Implications of IAS:

1. Loss of wildlife habitat
2. Biodiversity degradation
3. Low agricultural and livestock production

Actions

1. Survey and mapping out infested area
2. Carry out eradication
3. Train staff and community members
4. Prepare education materials

Estimating *Solanum incanum* density in each plot



RESULTS AND IMPACTS

i. More habitat for wildlife won
ii. Enhanced visitor experience as wildlife become more visible
iii. Increased awareness on the impacts of invasive species among staff and the local community
iv. Employment and source of livelihood to local communities

6. Training and Capacity Building

- ✓ Combination of our Staff, other agencies and community members

1. What are the potential impacts from climate risks in your area?
2. What other non-climatic stresses act in concert with climatic risks identified above?
3. What can be done and what resources are needed?

ENHANCE OUR VISITOR EXPERIENCE

IN BRIEF…..

- ✓**Ecological restoration in and around Protected Areas enhances the capacity of these ecosystems and the communities that depend on them to respond to climate change**

Other EbAs: Renewable Energy

- Solar
- Biogas
- Energy jikos
- briskets

✓ **Supporting household level adaptation measures:** Human, financial, physical…

LESSONS LEARNT

- **Implementation of active PA management strategies (EbA) aimed at maintaining or restoring ecosystem service are necessary, especially now that the extreme Weather events are Frequent and Intense.**


Thank You!
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