USE OF ELECTRIC FENCE IN HEC MITIGATION: A case for Uganda

SPACE FOR GIANTS
www.spaceforgiants.org

What is Human Elephant Conflict?

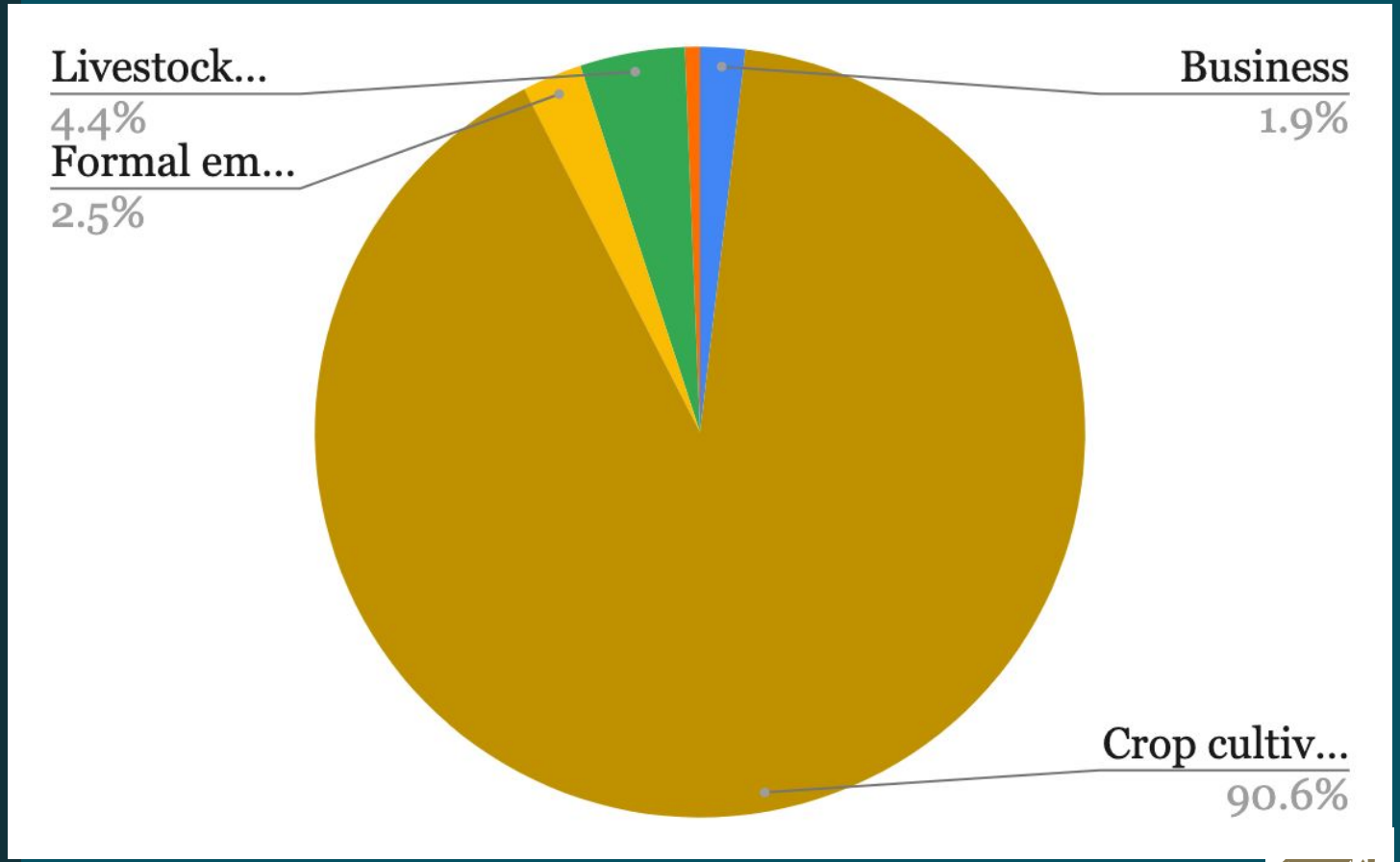
Phenomenon where the needs of elephants overlap with interests of human beings in the same landscape

MANIFESTATIONS OF HEC

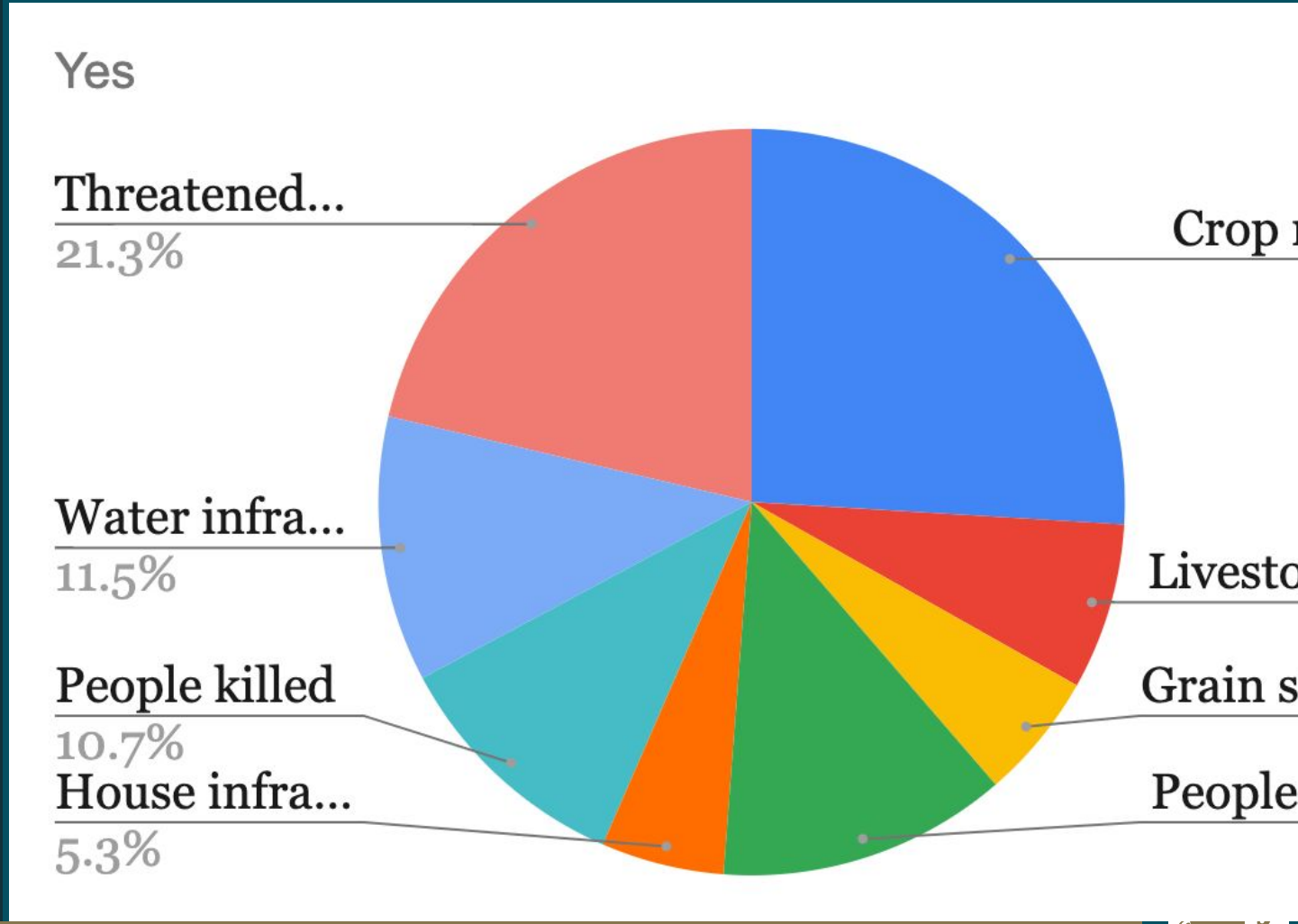
AMONG UGANDAN COMMUNITIES

CROP DAMAGE

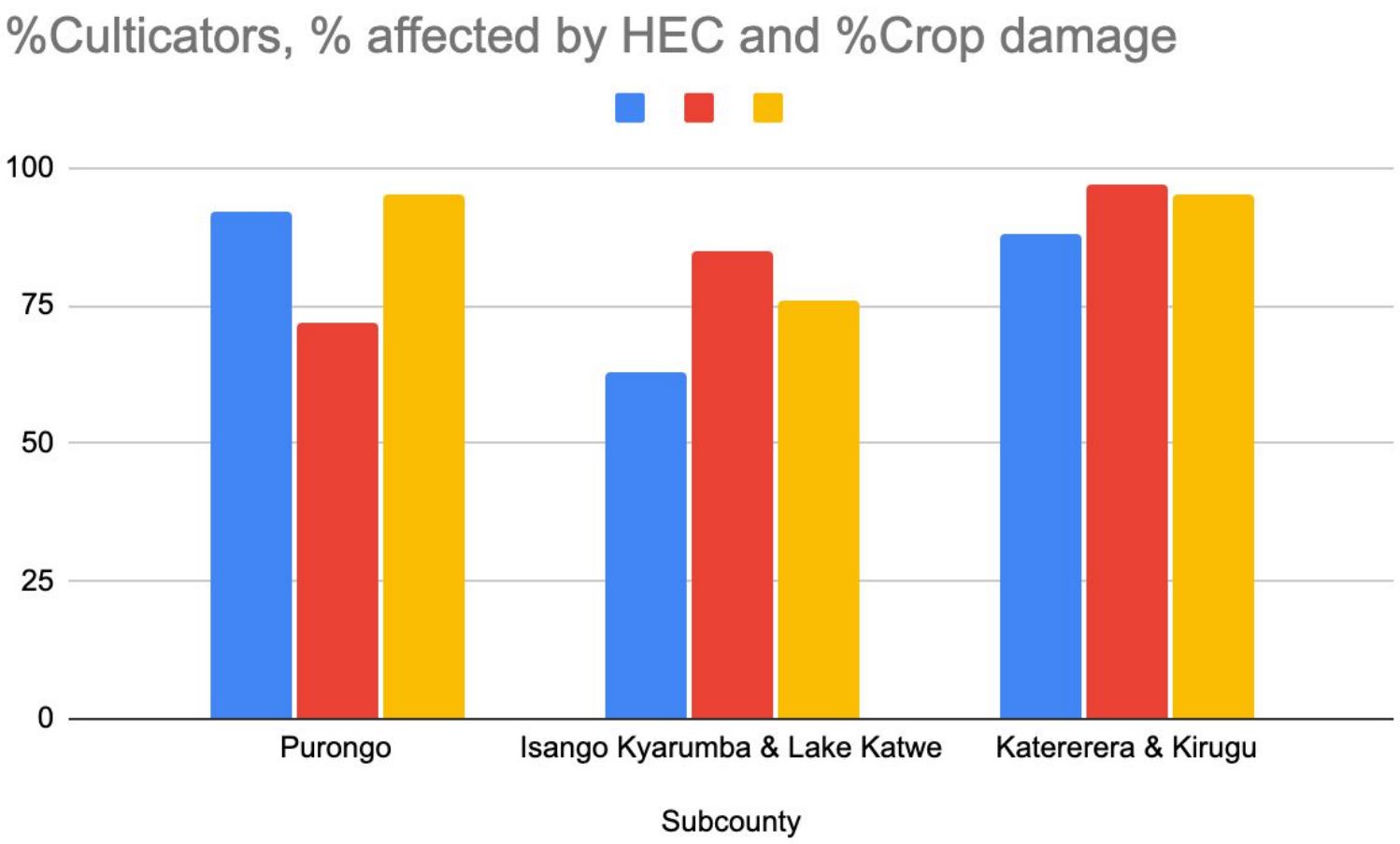
CROP DAMAGE



CROP DAMAGE -


Yes
Threatened...
21.3%
Crop
Water infra...
11.5%
Livesto
People killed
10.7%
Grain s
House infra...
5.3%
People

CROP DAMAGE


%Culticators, % affected by HEC and %Crop damage
100
75
50
25
0
Purongo
Isango Kyarumba & Lake Katwe
Katererera & Kirugu
Subcounty

PROPERTY DAMAGE

RETALIATORY KILLING

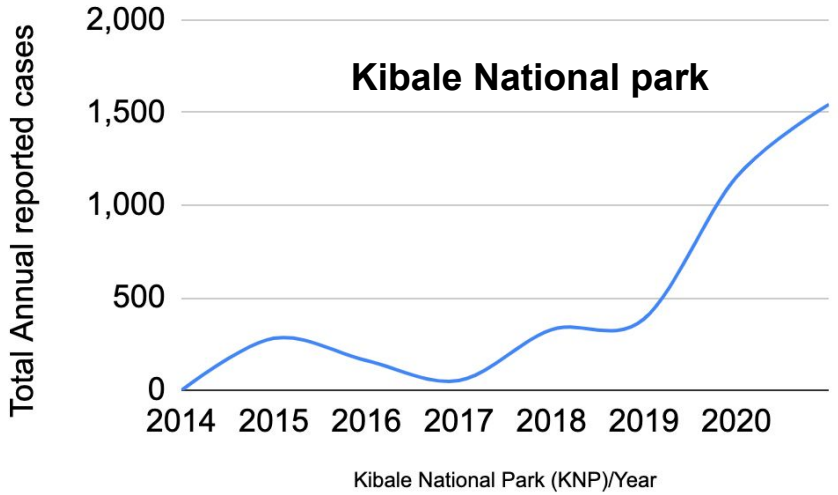
CHASING ELEPHANTS

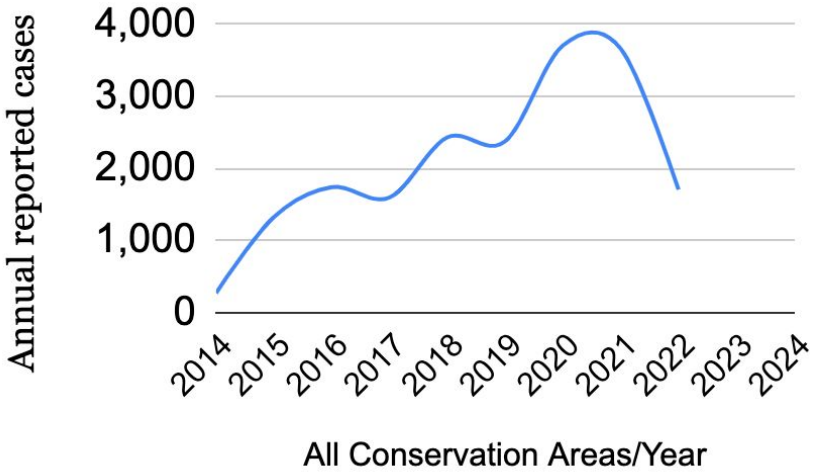
Why should human wildlife coexistence be fostered

- improved access to natural capital; improved livelihood opportunities; improvements to social capital; greater food security and reduced vulnerability to ecosystem degradation etc.
- People will only protect what is valuable to them. Elephants can bring benefits through tourism and employment. Co-existence perhaps the only way to ensure both humans and wildlife needs are taken care of.

Is there need for use of Wildlife Electric Fences in Uganda?

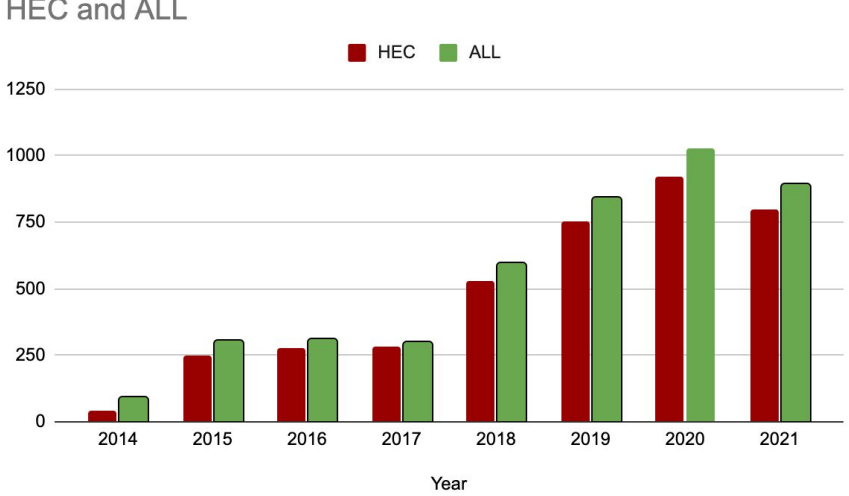
- **Increased reported annual human wildlife cases especially in elephant range PAs in Uganda**
- **Outcry of affected people living adjacent to protected area boundaries**
- **Inadequacies of existing mitigation measures (in some areas)**

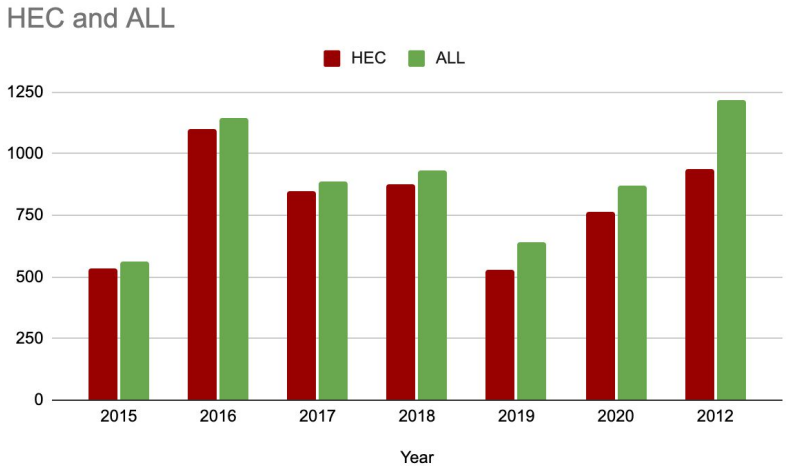


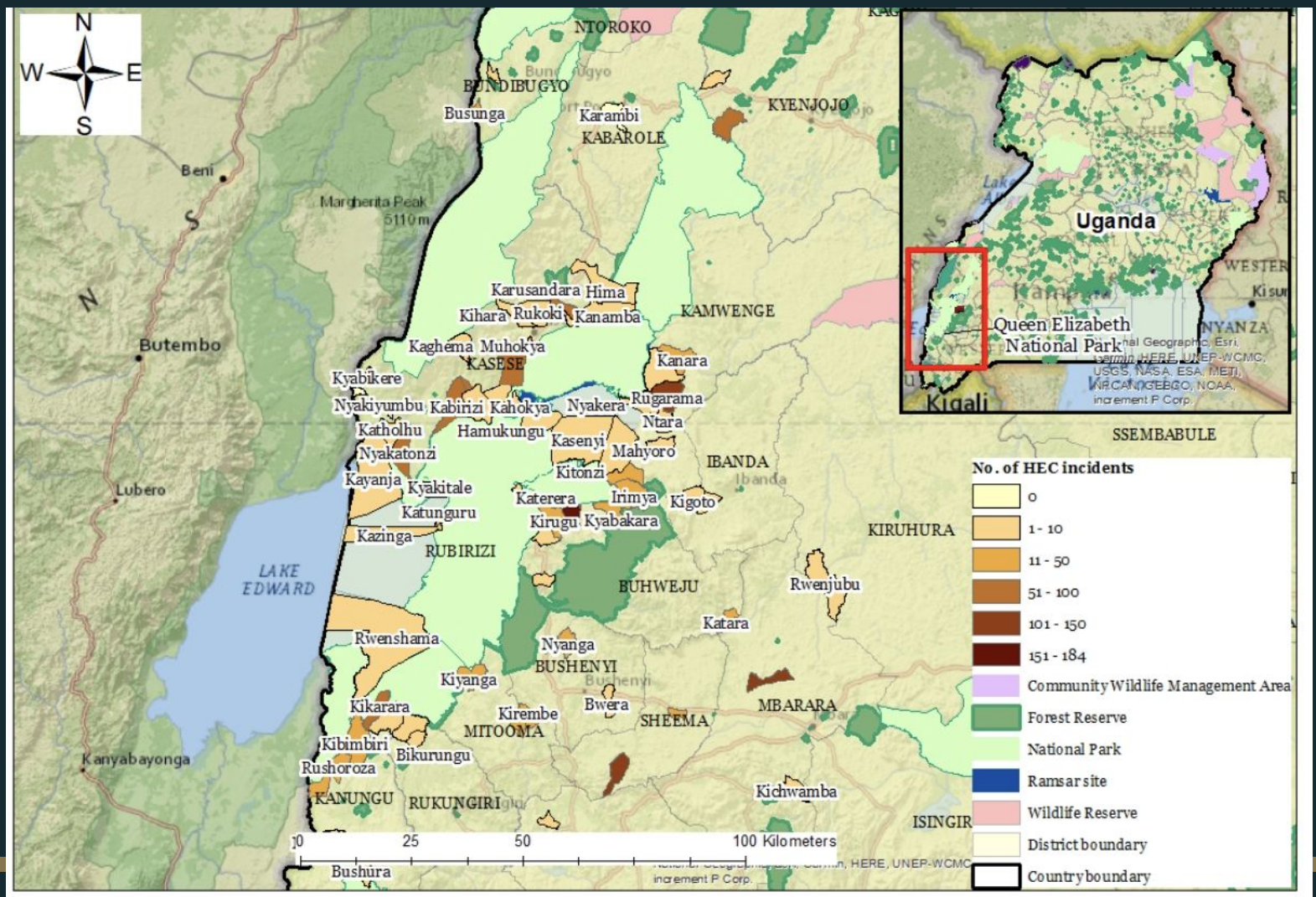


Why Elephant Electric Fences have been priority?

- **HEC constitutes over 78% of all reported cases in elephant range PAs in Uganda**
- **In baseline surveys 88% of respondents experienced HEC in the past 12 months**






N
W
E
S
NTOROKO
BUNDIBUGYO
Busunga
Karambi
KABAROLE
KYENJOJO
Beni
Margherita Peak
5110m
Karusandara
Hima
Kihara
Rukoki
Kanamba
KAMWENGE
Butembo
Kaghema
Muhokya
KASESE
Kanara
Kyabikere
Nyakiyumbu
Kabirizi
Kahokya
Nyakera
Rugarama
Katholhu
Hamukungu
Ntara
Kasenyi
Mahyoro
Nyakatonzi
IBANDA
Kayanja
Kyakitale
Kitonzi
Lubero
Katerera
Irimya
Kigoto
Katunguru
Kirugu
Kyabakara
Kazinga
KIRUHURA
RUBIRIZI
LAKE
EDWARD
BUHWEJU
Rwenjubu
Katara
Rwenshama
Nyanga
BUSHENYI
Kiyanga
Kikarara
Bwera
MBARARA
Kirembe
SHEEMA
MITOOMA
Kibimbiri
Bikurungu
Kanyabayonga
Rushoroza
KANUNGU
RUKUNGIRI
Kichwamba
ISINGIRO
0
25
50
100 Kilometers
Bushüra
Uganda
Queen Elizabeth
National Park
Kigali
SSEMBABULE
No. of HEC incidents
0
1 - 10
11 - 50
51 - 100
101 - 150
151 - 184
Community Wildlife Management Area
Forest Reserve
National Park
Ramsar site
Wildlife Reserve
District boundary
Country boundary

MANAGEMENT OF CONFLICT

CONTEXT SPECIFIC INTERVENTIONS

Beehive and barbed wire fences

WHAT DO WE KNOW ABOUT CROP RAIDING BEHAVIOUR?

1. Patterns in time & space
   a. Close to agriculture & at night
2. Customisable behaviours
   a. Increase speed of movement
3. Some deserve more blame
   a. Not all elephants cropraid
4. They teach each other
   a. Bulls teach each other

ATTITUDES OF AFFECTED COMMUNITIES

Rugarama FG, “In relation to the family, especially those near the park boundary, the men would go to guard crops at night. The men who were living far away from the boundary would normally go to disturb wives of the men who were on guard. This usually caused a lot of domestic violence in the home. As of now this has reduced because the man gets more time to stay in his home than before”.

Rugarama FG, “I used to look at the elephants as an enemy because of destroying crops. I felt like all the elephants should die and get finished in the park. But now I love the elephant because the elephant contributes a lot money and benefits my family.”

Quotes on Attitudes prior to electric Fence construction

"I wish they could be killed because they destroy crops a lot and reduce our productivity"

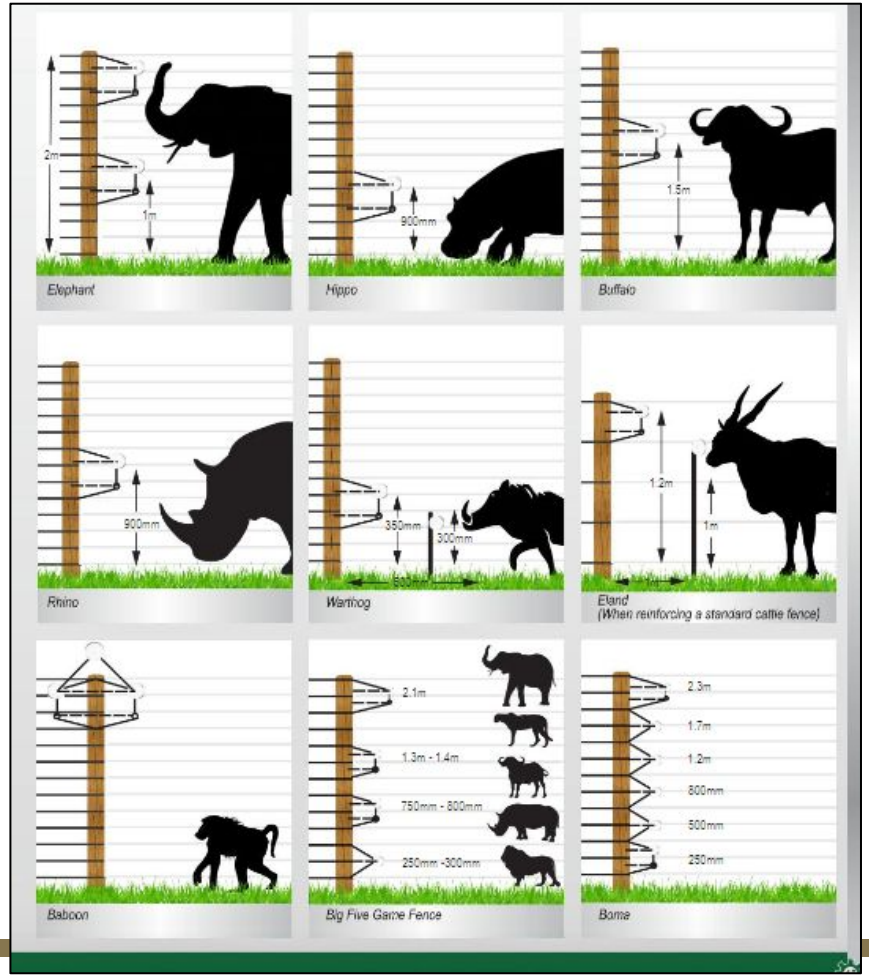
"elephants are the worst animals as they destroy our gardens which leads to less/low yields" (respondents in Rubirizi district 2018)

ELECTRIC FENCE AS MITIGATION MEASURE

FENCES BUILT FOR PURPOSE

- A barrier that uses electric shocks to deter animals from crossing a boundary
- The design and configuration of the electric fence depends on the target animal(s)

Examples of Electric Fences



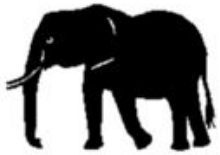
ELECTRIC FENCES

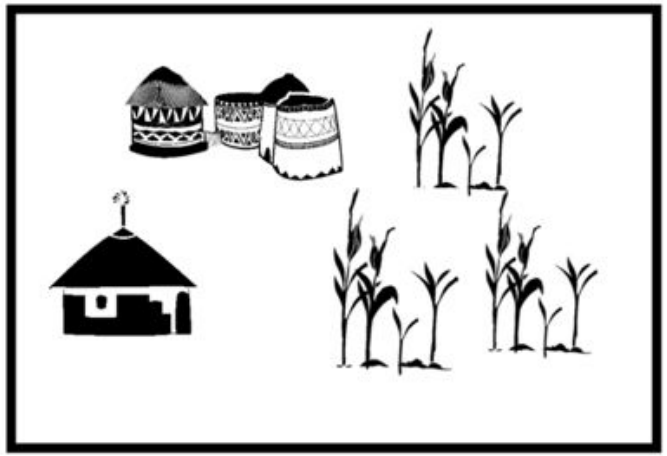
GO BIG OR GO SMALL?

First Electric fence was commissioned by H.E. President Museveni in August, 2019 in Rubirizi district

DETERRING ELEPHANTS

FARM LEVEL

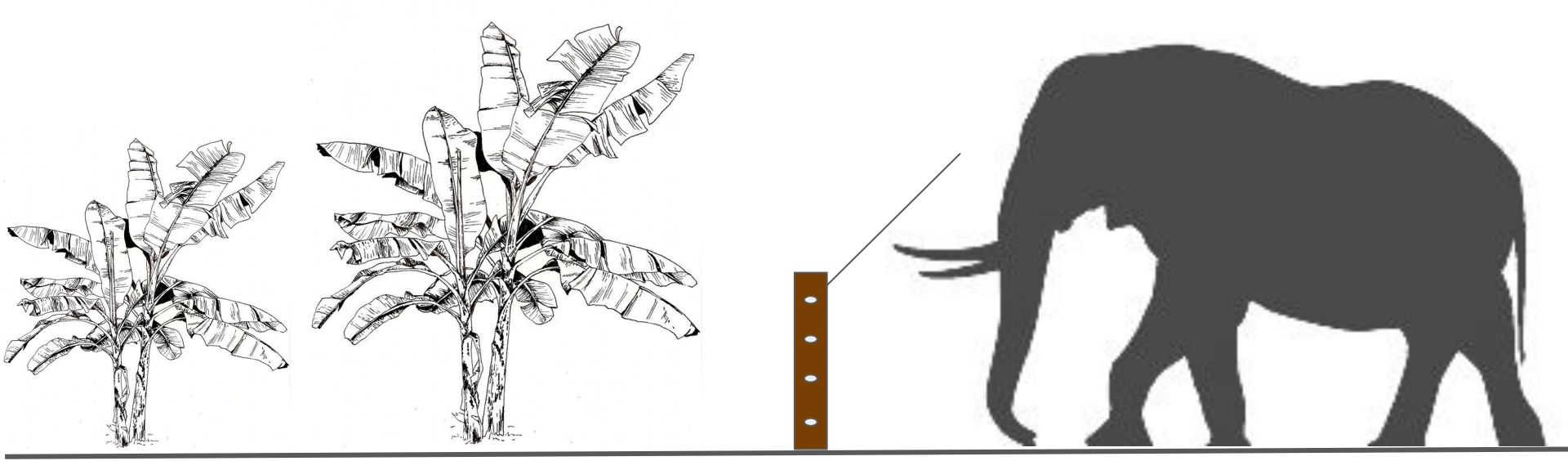




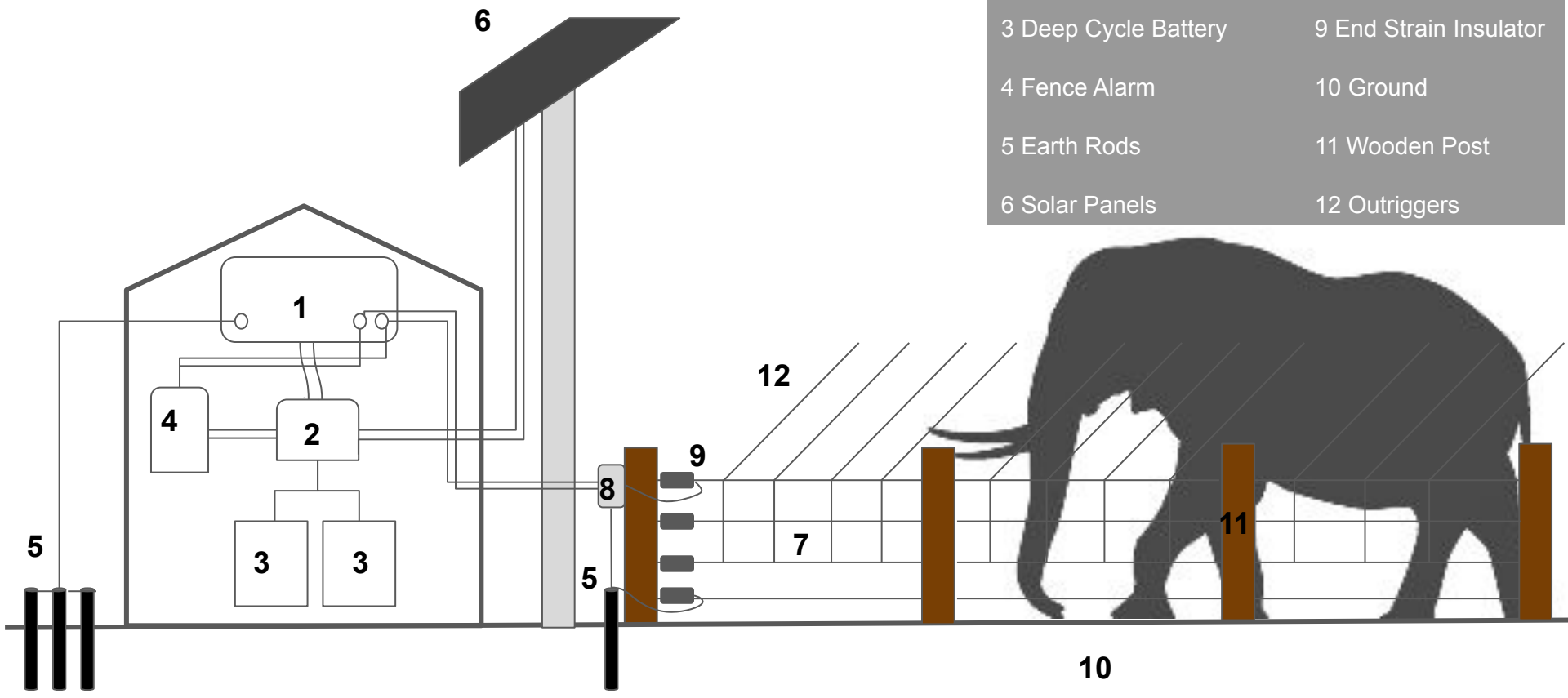
DETERRING ELEPHANTS

LANDSCAPE LEVEL

HEC mitigation

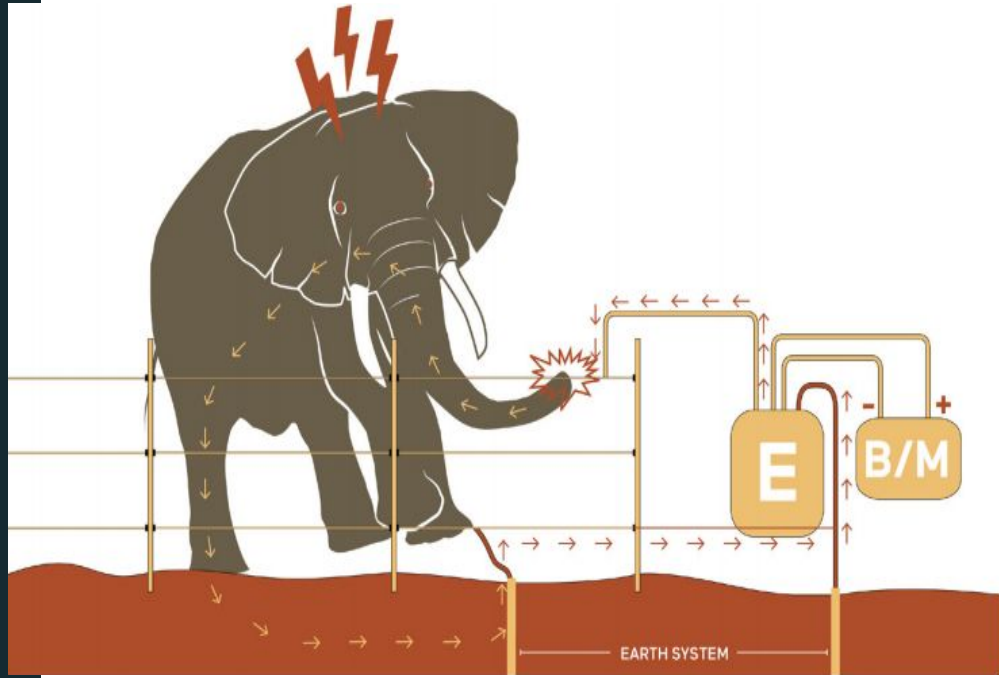


HEC mitigation

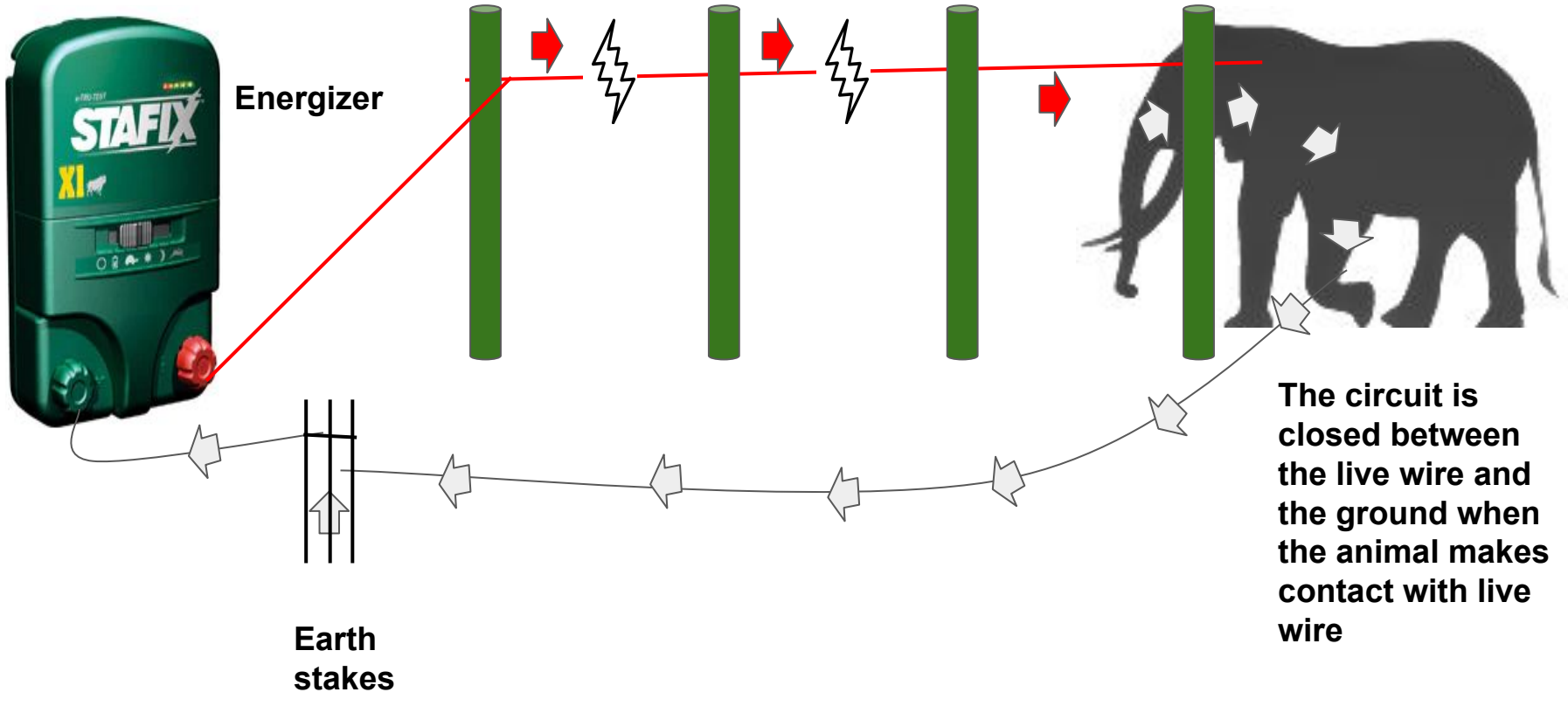


HOW AN ELECTRIC FENCE WORKS

- **EF controls animals by giving them a powerful, short, sharp, shock which is unforgettable**
- **The shock received by the animal is a function of the power available and total resistance of circuit**
- **An electric fence is both a physical and a psychological barrier. All animals need to be trained to respect the electric fence.**



HOW AN ELECTRIC FENCE WORKS - GROUND RETURN



Elephant Electric Fences Planning, construction and maintenance - Outline of process

- Awareness
- Assessment
- Baseline survey
- Fence design, material identification/ determination and costing
- Construction
- Maintenance and monitoring

Importance of EF Assessment

Establish presence animal corridors, accessibility

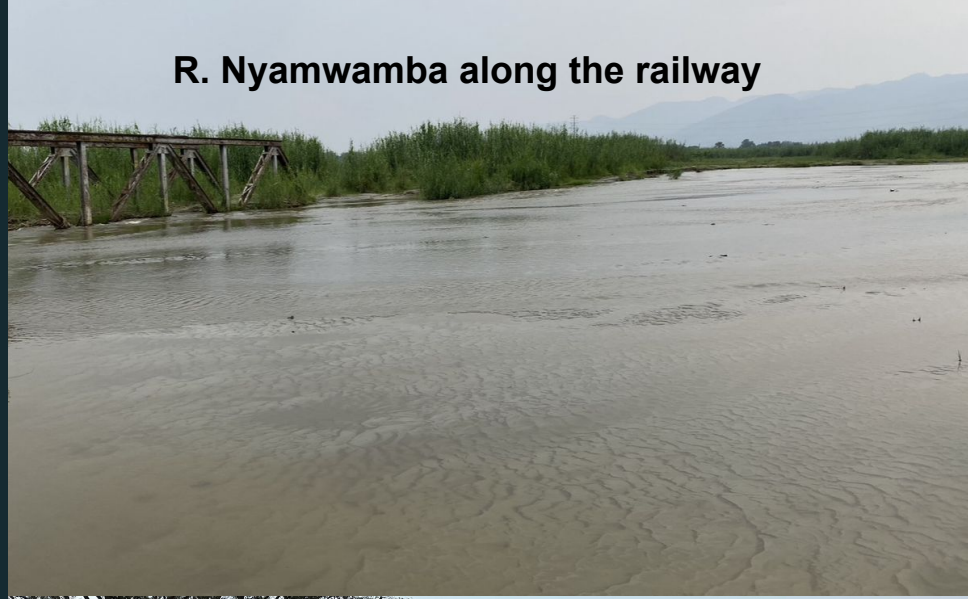
Stakeholder identification (UNRA, UR, UEDCL etc, Resource users)

Determine Fence design (rivers, barriers, etc)

Determine supportive infrastructure needed eg grids across roads and


Sandy trenches


Raiway at Purongo


R. Nyamwamba along the railway

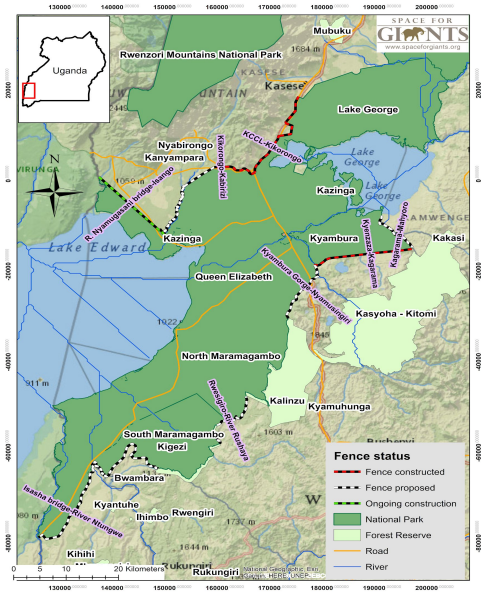

Along Broad to Bugungu gate

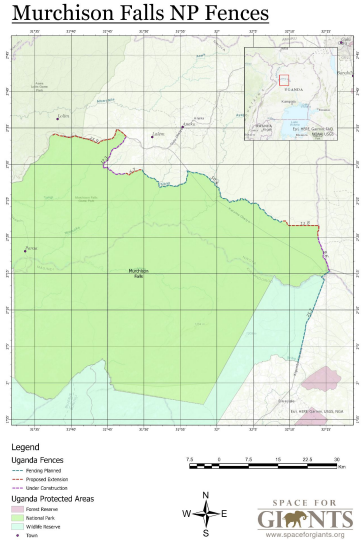
Threats to EF establishment

1. Poor maintenance regime
2. Wildfires
3. Poor quality of materials
4. Scaling / adopting without technical guidance
5. Crossing the fence to access resources by community members

Status of HEC electric fences in Uganda

CA	Fence section	No of km
MFCA	Karuma	14.5
	Yagupino - Latoro	28.5
QECA	Kyenzaza - Kagarama	19.5
	KCCL - Kikorongo - Kabirizi	32.5
	Kayanja - Isango	6.2
	Total	101.2





Factors important for the success of a HEC electric Fence

- Length of the fence
- Maintenance
- Use of quality materials
- Proper fence monitoring

Good Practices of Electric Fence Construction

1. Use good quality materials from credible suppliers
2. Sustainable maintenance regimes

Impacts of HEC Electric fence - Livelihoods

- **HEC relief to the immediate beneficiaries of the electric fence**
- **Reduced social conflicts induced by HEC eg domestic violence**
- **Improved food security due to**
  - **Increased acreage,**
  - **Harvesting mature crops**
  - **Re-introduction of new crop varieties**

Impacts of HEC Electric fence - Livelihoods

- Increased land values
- Increased amount for hiring land
- Increased household incomes
- Threats have changed from HEC to:
  - drought,
  - crop diseases,
  - poor soils

Impacts of HEC Electric fence - Elephants Conservation

- Positive attitudes registered among benefiting communities during Impact surveys due to reduction of trauma

Kirugu FG, “The elephant is good even from previous times. Firstly it attracts tourists to the area.Secondary we and our children see it as a good animal. Only the small thing of damaging our property had made us to hate it. We would have killed the elephants because it ws not difficult only that we were seeing them as good animals. They are good and should increase.”

CONTACT US

SPACE FOR GIANTS

www.spaceforgiants.org

What the electric fence does not do?

1. kill people
2. stop illegal activities eg poaching and illegal resource access

Lessons learnt

Positive impacts of electric fence are realised in a short time

Assessments of potential electric fence are extremely important (determine fence design, stakeholders, beneficiaries)

Indirect benefits such reduction in domestic violence and improvement of family cohesiveness are well articulated by beneficiaries

Maintenance and quality of materials are important for effectiveness of the EF and longevity

Non target wildlife eg hippos and buffaloes have benn controlled