LIVELIHOOD INSURANCE FROM ELEPHANTS (LIFE)

SITUATIONAL ANALYSIS REPORT

FEBRUARY 2019

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List of Acronyms

CWCCC- County Wildlife Conservation and Compensation Committee

HEC- Human Elephant Conflict

HWC- Human Wildlife Conflict

KWS- Kenya Wildlife Service

NGO- Non-Governmental Organizations

WCMA- Wildlife Conservation and Management Act

Introduction

With the piercing effects of climate change, urban development and population growth, Elephants have been driven to seek alternative means of survival. As a result, there has been a spike in the Human Wildlife Conflict (HWC) incidences. Due to population pressure and a change in climatic patterns, elephants being herbivores have been inclined to feast on crops that are grown by man for domestic consumption and for commercial purposes in the land neighbouring protected areas. It is with this interaction that Human -Elephant conflict (HEC) arises. In Kenya, HEC is the most common form of HWC (see Table 1).

This report seeks to introduce Human-elephant conflict (HEC) in the Kenyan context. It will, with the use of tables and images, spell out the occurrences and point out the specific incidences that occur as a result of the conflict, highlighting the prominence of crop related cases. It will then introduce a section that expounds on measures that have been taken to try and mitigate the conflict focusing mainly on government interventions and private compensation schemes. It will then narrow down on our specific areas of focus based on the data received from our community-based partners. It will try and understand the frequency of incidences, the specific locations where HEC is more frequent within the counties, and the effects of HEC to both the community members and the animals.

	Human Death	**Human Injury**	**Crop Destruction**	**Livestock Injury**	**Property Damage**	**Total of cases Reported per year**
2015	24	28	949	18	4	*1023*
2016	32	34	1835	6	9	*1916*
2017*[1]	21	9	189	2	2	*223*
Total of cases per incident type	*77*	*71*	*2973*	*26*	*15*	
GRAND TOTAL (2015-2017)						**3162**

Table 1: Cases of HEC reported in Kenya (The National Wildlife Conservation Status Report, 2015-2017)[2]

[1] Figures here are only for the month of January and February
[2] Table compressed and compiled from figures in The National Wildlife Conservation Status Report, 2015-2017

HEC hotspots in the Country

Human wildlife conflict is prominent in some parts of the country with elephants leading the "most-notorious" species list in terms of crop damage and property destruction.

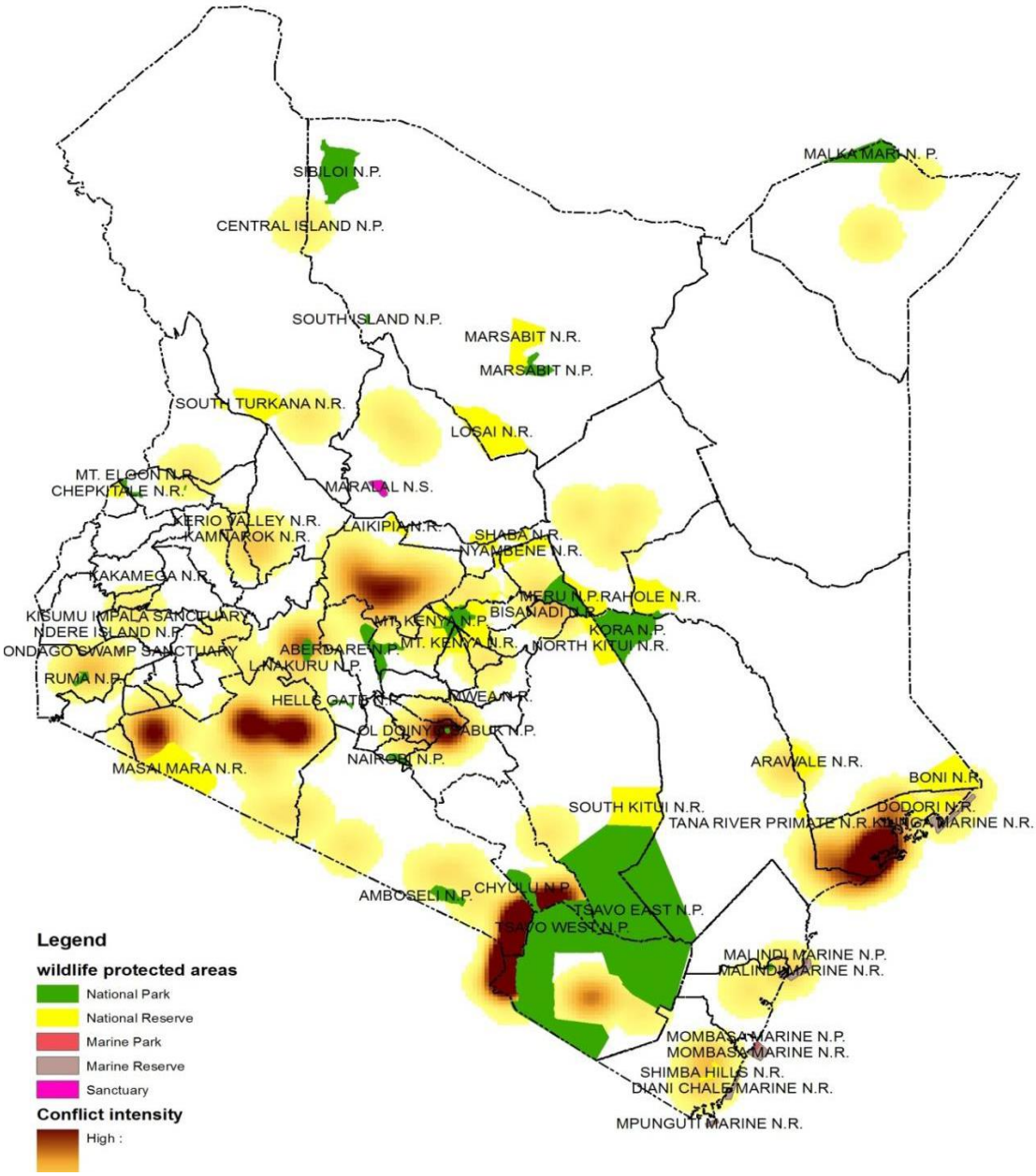

Figure 1: Human Wildlife Conflict Hotspots in Kenya (The National Wildlife Conservation Status Report, 2015-2017)

Particularly, HWC is prominent in the counties of Laikipia, Nyeri, Narok, Kajiado, and Taita Taveta.

Of these, the sites that have been settled on for purposes of this project are **Taita Taveta County and Kajiado County**.

Historical perspectives: human- elephant relations

To understand human-elephant relations in Kenya, a node to the land-use question must be acknowledged as it has greatly shaped how communities and wildlife have interacted over the years. This section will briefly expound on the historical human-elephant relations in our two areas of focus as an attempt to understand how attitudes and relations have evolved over time.

Taita Taveta county

Taita Taveta county was home to 6 ethnic groupings, The Taita (who form the current majority in the county), the Taveta, the Maasai, the Orma, the Kamba, and the Waata. Culturally, their way of life created for peaceful coexistence with the wildlife of the area (Kamau & Sluyter, 2017). In fact, killing of animals without a cause was frowned upon and considered a bad omen (Kamau & Sluyter, 2017).

The circle of life was revered, and elephants, were valued for their role in clearing land and allowing for grazing land for cattle and goats through the knocking down of trees. In seasons of drought, the Waata people were said to collect water from the holes dug out by the elephants (Kamau & Sluyter, 2017).

Table 1: Precolonial livelihoods and human-elephant interactions of communities in the Tsavo ecosystem[3]

Community	Precolonial Livelihoods	Human-Elephant Interactions
Taita	Crop farming; cattle rearing	*Kept elephants off their fields but did not believe in eliminating the animals*
Taveta	Crop farming	*Kept elephants off their fields but did not believe in eliminating the animals*
Maasai	Pastoralism (cattle rearing)	*Used elephant trails to track better pastures for their cattle. Rarely hunted elephants*
Waata*	Hunting and gathering	*Seasonally hunted elephants for food*
Kamba*	Hunting and gathering	*Seasonally hunted elephants for food*
Orma	Pastoralism (cattle rearing)	*Used elephant trails to track better pastures for their cattle. Rarely hunted elephants*

[3] This table has been compiled by the authors of the report based on information gathered from (Kamau & Sluyter, 2017)
* In spite of their livelihoods, overhunting was not a factor in early precolonial times until the Ivory trade in the late 19th century

Following the growth of ivory trading in the 19th century, the Kamba turned to elephant hunting cited as a response to the numerous droughts and raids that made crop growing, their main source of livelihood, unsustainable.

Colonisation further interfered with the human-elephant interactions that occurred in the region. With introduction of colonial land policies, there was a shift of land use that often saw indigenous people displaced and, in some instances, forced out of their native homelands. The area that is presently Taita Taveta county was transformed to a wildlife conservation area. All wildlife was placed under the jurisdiction of the colonial government and this further aggravated the disconnect between local communities and wildlife in the region.

The post-colonial era has largely been a replication of colonial institutions and land-use questions have remained a significant challenge. Colonial and political backgrounds coupled with demographic pressures have ultimately resulted in the aggravation of HEC in the Taita Taveta region.

Kajiado County

The Amboseli ecosystem was predominantly home to the Maasai community who, like in the Tsavo ecosystem, co-existed with the wildlife in the area. The Maasai in the Amboseli region are from the Ilkisongo grouping of the larger Maa community (Lewis, 2015).

During the colonial period, there was a relocation program by the then government to move the Maasai people further south, in what was referred to as the Southern reserve (Lewis, 2015), in order to create agricultural land for the settlers. Consequently, population density in the Amboseli region increased.

As much as the Maasai had a co-existing relationship with the wildlife in the area, HWC did occur to some extent. To safeguard themselves specifically from elephants, communities preferred setting up their homesteads surrounded by large acacias which offered some form of mitigation (Lewis, 2015). Similarly, in the Amboseli region, colonial effects and other population pressures have aggravated the conflict with killing of wildlife being the most extreme retaliatory measures. It is said that some community members aid in poaching activities as a response to adverse poverty and as way of getting rid of the elephants which they regard as a menace.

The next section will expound on the present livelihoods and human elephant-interactions.

Kenya at Present: Livelihoods and Economic activities

Taita Taveta County

Taita Taveta County houses the Tsavo Ecosystem which is home to the largest population of elephants in the country with over 12,000 elephants (KWS, 2018)[4]. The communities within the county depend heavily on land and land resources to sustain their livelihoods. Taita Taveta county poses a unique situation where over 60% of the county land is occupied by the Tsavo East and Tsavo West National Parks. The land use is broken down as follows:

LAND-USE CLASSIFICATION	SQ.KM
Agricultural Land	6478
National Parks	10634
Waters	16
Total	**17128**

Table 2 Land Use Classification in Taita Taveta County

(Source: County Government of Taita Taveta Office of The C.E.C. – Lands, Environment and Natural Resources[5])

The most common economic activities in the county are tourism, farming, grazing and mining. The main type of farming practiced is subsistence farming with farmers mainly growing bananas, maize, beans, onions, garlic, chillies, lemon grass and ginger.

Kajiado County

Kajiado County is home to the Amboseli ecosystem which has a population of over 1,700 elephants (Sitati, 2016). Although largely semi-arid, the southern part of the county (Kajiado South), which is close to Mt. Kilimanjaro, is made up of arable land and agricultural activities take place in that area. The main economic activities in the county are livestock rearing and crop growing (Agricultural Sector Development Support Programme (ASDSP), 2014). Agricultural practice in the area is mainly subsistence farming with food crops accounting for 1,055 ha of the arable acreage and to a smaller extent, commercial farming (60ha) (Agricultural Sector Development Support Programme (ASDSP), 2014). The main food crops grown are maize, beans, potatoes, pumpkins,

[4] This is a third of the country's elephant population

[5] Source: https://taitataveta.go.ke/sites/default/files/LAND%20AND%20NATURAL%20RESOURCES%20SECTOR%20BRIEF%20ON%20CHALLENGES%20AND%20POTENTIALS.pdf

cassava and vegetables (mainly kale, locally known as Sukuma wiki). Commercial farming of cotton, onions and tomatoes is done throughout the county though some are grown in small quantities. Horticulture[6] is also gaining popularity through irrigation schemes mainly in Isinya and Kajiado North Sub-Counties. Some farmers are engaged in tree planting which at times the elephants damage.

Crop raiding accounts for 87% of the HWC in the region with elephants being the main perpetrators (KWS; Amboseli Ecosystem stakeholders, 2009). It is reported that over 600 elephant-related cases are reported annually in the region (Sitati, 2016). Consequently, the majority of elephant fatalities in the region are linked to their crop-raiding[7].

Mitigation Efforts

Government Interventions

The Wildlife Conservation and Management Act (WCMA) 2013 (WCMA, 2013) has provisions for a government-run compensation scheme in the event of death, injury, loss of crop and livestock, and property damage. Prior to the WCMA, there was a consolation payment provision that was repealed in the wildlife act of 1989. Subsequently, compensation schemes/consolation payments were taken up by NGOs who, as expected, have been limited in terms of scope.

The incidences of HWC are recorded by KWS officials on the ground in the Problem Animal Control register and occurrence books after which the follow-up on the financial compensation occurs (KWS, 2015). As of now, it is primarily the cases of human death that are considered for the compensation scheme[8]. Compensation for crop-related damages has been seen to be complicated and almost impossible to meet due to its high-cost nature linked to its frequency and difficulties in quantifying loss (Sitati, 2016).

Table 3:Number of human deaths and injuries 2012-2014[9]

Year	Death	Injuries
2012	172	913
2013	199	1409
2014	170	1496

[6] The horticultural produce usually includes melons, bananas, apples, oranges and grafted avocados
[7] Over 60% or elephant deaths in the region are linked to HEC
[8] It should be noted that even though these are the cases that have been considered so far, payout has been slow. Table 4 shows the number of unpaid compensation cases.
[9] Table 3 and 4 Source: Effectiveness of measures out in place by KWS in protecting wildlife, Office of the Auditor

Table 4 Unpaid compensation cases 2014-2016

Type of case	Number of Cases	Cost of Compensation in Ksh.
Human Injury	2,029	990,188,000
Human Death	274	1,245,200,000
Total	2,303	2,235,388,000

There was an attempt by the Kenyan government via the Ministry of Environment, Natural Resources and Regional development to devolve the wider HWC mandate by setting up the County Wildlife Conservation and Compensation Committee (CWCCC). This has however recently been halted due to a variety of issues and there are talks of re-organising the committees to be regional rather than county-based. An amendment to the act in January 2019 has replaced the CWCCC with Wildlife Conservation Committees (Republic of Kenya, 2019).

Some technical efforts undertaken to mitigate the conflict include:

i. Elephant Collaring- The government through the KWS has embarked on an Elephant collaring system as a way of tracking the animal movements in a bid to obtain data and understand their patterns to mitigate HWC.
ii. Elephant Translocation - Owing to the frequency of HEC in Laikipia and Nyeri County, KWS has been relocating some problematic herds to the Tsavo ecosystem. The reason behind increased HEC in those areas has been population increase which has resulted in a blockage of traditional elephant movement routes (KWS, 2018).

2 Elephant Translocation in Laikipia County

iii. The use of electric fences - Used to deter the animals, so far, it is only the Aberdare National Park that has been fenced all round.

The challenges facing Governments interventions include the following:

1. Lack of funds to operationalize compensation committees

2. Bureaucracy
3. Corruption
4. Lack of proper mechanisms to determine validity of the claims
5. Inefficient capacity building

Existing private compensation schemes on HWC

Human wildlife conflict is considered very common because as it stands, 65% of wildlife lives outside protected areas (Ministry of Tourism and Wildlife, 2018). In addition to government intervention, some NGOs working in the country have come up with compensation schemes to alleviate existing situations. These schemes aim to increase tolerance for wildlife by community members who might otherwise choose to harm/injure animals in instances of conflict.

The Table below attempts to summarize these existing schemes and how they operate:

ORGANIZATION	COMPENSATION SCHEME	LOCATION	DESCRIPTION	FUNDING SOURCE
Maasai Wilderness Conservation Trust	The Wildlife Pays Programme	Kuku Group Ranch, Chyulu Hills	• Compensates members on livestock injuries and/or fatalities "caused by any species *including* occasional trampling by elephants" (Bauer , Müller , Van Der Goes , & Sillero-Zubiri, 2017) • Payments are made quarterly	Tourism activities[10], donations, social investments
Maasailand Preservation Trust[11]	Mbirikani Predator Compensation Fund	Mbirikani Group Ranch, Kajiado	• 70% of the costs are taken up by the scheme and 30% are met by the group ranch	Supported by Big Life Foundation
Mwaluganje Elephant Sanctuary	Annual Compensation per acre	Mwaluganje - Shimba Hills ecosystem, Kwale County	• Annual fee paid out to farmers in the area who have contributed their acreage for the Sanctuary to substitute their farming incomes	Donor funding, tourism activities
Mara North Conservancy	Predator compensation scheme	North of the Masai Mara National Reserve,	• Compensates for the loss of livestock as a way of mitigating retaliatory killings by community members (Mara North Conservancy, 2018)	Tourism activities

[10] Surcharges from the Campi ya Kanzi fund the programme
[11] In September 2012, the Maasailand Preservation Trust merged with the Big Life Foundation

Challenges facing these schemes have been fraudulent claims, lack of adequate funding and at times, lack of support from the communities on the ground. The Mwaluganje scheme is no longer in existence owing to lack of funds. Furthermore, because these schemes heavily rely on donor-funding from well-wishers, there is always a question of sustainability. If the Mwaluganje scheme is anything to go by, there is need for more sustainable mitigation measures.

Despite the severity of predator cases, a majority of HWC cases are primarily crop-related. There exists an obvious gap that the LIFE microinsurance scheme will be attempting to bridge, albeit at a small scale.

Viability of microinsurance schemes

Despite the various interventions, there is still so much that can be done. Microinsurance[12] is a perfect way to supplement the government scheme as it targets the low- and middle-income earning citizens.

Unlike the traditional insurance or the existing compensation schemes, microinsurance has the potential to offer the following benefits:

1. Microinsurance seeks to understand the needs of the potential insurance catchment communities through research and co-creates the insurance solutions with the communities for buy-in and ownership.
2. Microinsurance employs human-centred design principles in product developments for solutions that are simple, understandable, accessible and affordable while giving value to the insured communities.
3. It also has clear pre-determined benefit contracts eliminating the uncertainty of expected pay-outs in event of a claim. Most importantly, it has simple claims processes that facilitate easy claims registration and quick pay-outs.
4. Each individual scheme being run separately is inefficient and expensive to the financier. Microinsurance has the ability to pull larger numbers, employ technology and manage the entire client journey from registration to claim settlement in such a way that client value and business case are well balanced.

Therefore, it is highly likely that the introduction of a microinsurance compensation scheme will improve the relationship between wildlife and humans. Based on a study that was carried out by Kamau (2017), 76% of respondents mentioned that they had ill feelings towards the wildlife because they were not compensated accordingly. It is as a result of these ill feelings that

[12] Micro-insurance is insurance that targets small income households who need insurance the most.

elephants are injured and/or killed by community members or outsiders with other motivations are aided and abetted to come in and kill them. The proposed microinsurance scheme will attempt to streamline the claim retrieval process and create some autonomy from government compensation. Should the scheme succeed, it will bring about an improved relationship is a win both ways as it is expected that elephant fatalities will drop while the livelihoods of HEC victims will be secured.

Data Analysis from partners

The Tsavo Conservation Group (TsavoCon)

The organization predominantly works in the Tsavo ecosystem with an all-encompassing approach that encourages the co-existence of wildlife and humans. Using the "Stabilization through conservation" (Stabilcon)[13] approach, they work closely with the communities in Taita Taveta to deal with challenges that are unique to their landscape owing to the significant population of wildlife. They work closely with the 28 ranches[14] that form the Taita Ranches in a wide range of programs that include anti-poaching initiatives and natural resource management.

As mentioned earlier, Taita Taveta county is a hotspot for HEC with most recent news features[15] showcasing the plight of Sagalla residents who have been dealing with crop raiding incidences. To better understand and manage the conflict, TsavoCon has been collecting data and mapping elephant activities. The information in this section will draw from data collected in the year 2018.

[13] *"StabilCon is a holistic approach to complex contemporary conservation challenges, which seeks to build societies and environments where wildlife is accepted and natural resources are respected through an acknowledgement of their importance to humans"*(http://www.tsavocon.org/stabilcon)

[14] Lumo Wildlife Conservation Trust, Taita Ranch, Oza Group Ranch, Wangala Ranch, Golini Mwaluganje,Rukinga, Taita Hills Wildlife Sanctuary, Mbulia Conservancy, Ngutuni Sanctuary, Kasigau Ranching Company ltd, Mkuki Ranch, Amaka Ranch, Maungu Ranching Company ltd, Wushumbu Ranch, Dawida Ranching Company ltd, Kambanga Ranching Company ltd, Mgeno Ranching Company ltd, Bura Ranch, Mramba Ranch, Galana Wildlife Conservancy, Izera, Taita Sisal Estate Sanctuary, Ndara, Lualenyi Community Conservancy, Peregrine Conservation Area[Kaluku] See Appendix 1

[15] The conflict has been highlighted recently on the Daily Nation and The Star

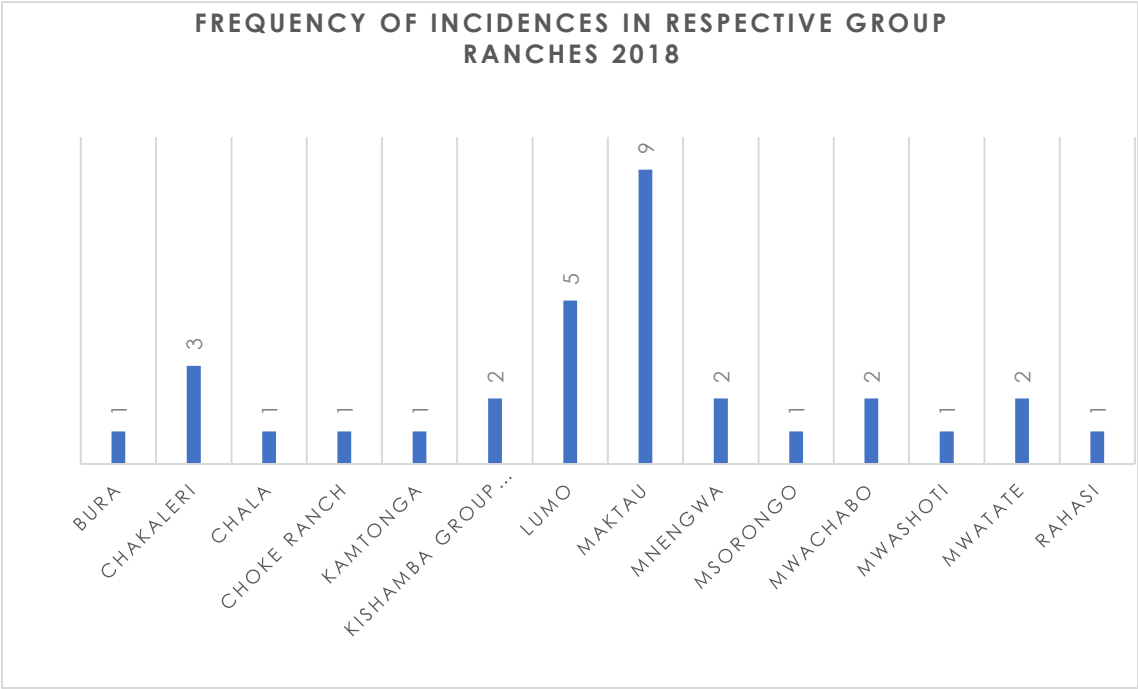

Figure 4 Frequency of Incidences in group ranches

The location that had the most frequent incidences was Maktau (see Figure 4) with the crops in the area being mainly Cassava, Maize and Sweet potatoes. In addition to crop raiding, the elephants were responsible for destroying property that included the destruction of granaries and water tanks. Compared to the other areas, Maktau had the most incidences across months with crop raiding incidences happening monthly*.

The month of August had the greatest number of incidences recorded (see Figure 5). This may have been due to the fact that there was no rainfall recorded in the lowlands of Taita Taveta county in that period and also because August is the harvest month for the region (National Drought Management Authority, 2018). Additionally, water levels in the rivers and springs and other water sources in the region had reduced significantly in the same month (National Drought Management Authority, 2018).

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* The information presented here is based on data received from TsavoCon. Kindly note that this is not a comprehensive depiction of the HEC incidences on the ground. A lot of incidences go unreported

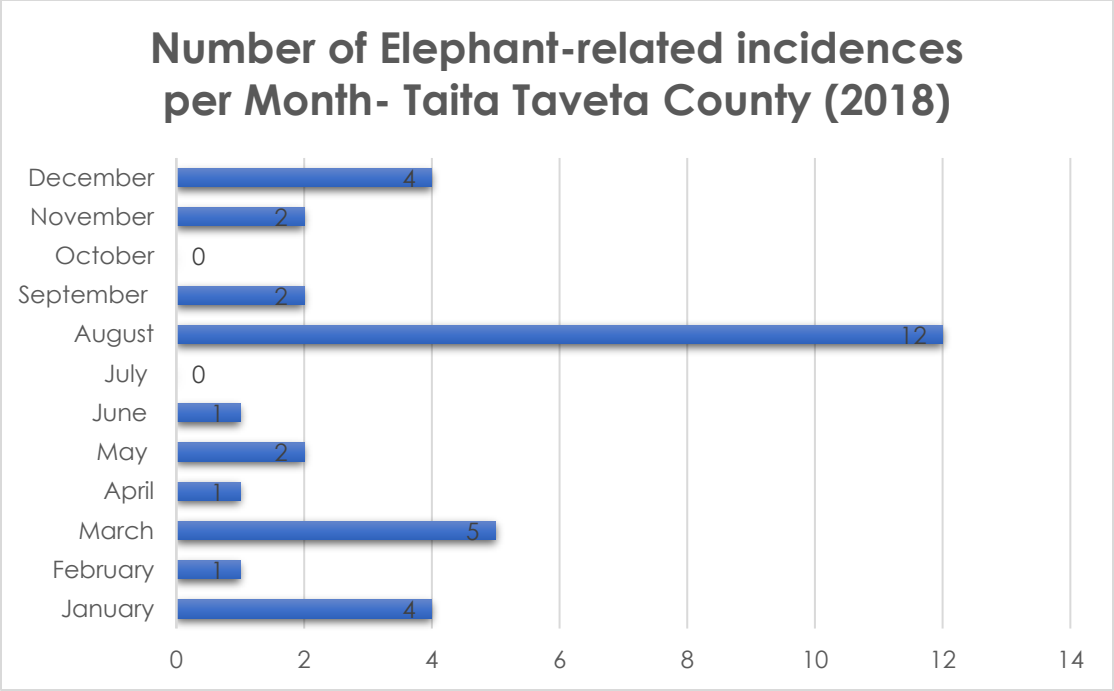


Figure 5: Number of elephant-related incidences in the respective month

With regards to crops, the elephants were drawn to maize (with maize farms and granaries being the most raided), tomatoes, bananas, cassava, sweet potatoes, sisal tubers, and orange and mango trees.

TsavoCon works with the KWS where it at times assists in relaying information about elephant invasions in the community areas. The organization is in the process of launching a community scouts' program that will contribute to monitoring wildlife activities for better co-existence.

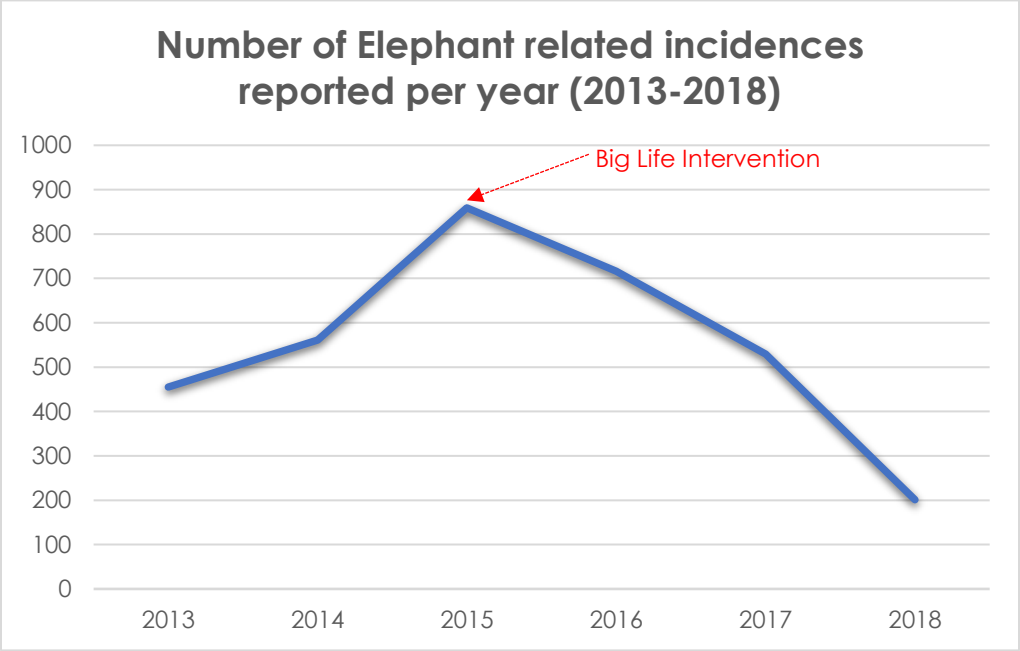
BIG LIFE FOUNDATION

It's mission statement, "On the ground in Africa, partnering with communities to protect nature for the benefit of all", is a representation of Big Life's activities. The organization works closely with the community in Mbirikani Group Ranch to run its activities. It is currently running a predator compensation scheme as a way of mitigating HWC. Over the years, the program has contributed to the reduction of retaliatory attacks by community members that often resulted in the death of wildlife in the area. Through their community ranger program, Big Life has hired over 315 people who have been instrumental in anti-poaching activities and mitigating HWC in the Amboseli ecosystem.

Despite the successes, HEC has remained a significant challenge for the community members and for the organization to deal with. Over the years poaching incidences have decreased significantly while those of HEC have been on the rise. This rise has been attributed to the

competition of limited resources and spatial conflict between humans and wildlife (Big Life Foundation, 2018).Most cases of elephant mortality outside natural causes have been because of HEC. The frequency of the incidences displayed in the data available from Big Life is barely a representation of the severity of HEC on the ground.[16]

Figure 6: Number of elephant related incidences



From the line chart, we can see that from 2015 there has been a decrease in crop raiding incidences in the region. This can be attributed to the community ranger program managed by the organization. A decision to keenly monitor elephant activity and intercept incidences has contributed to the prevention of 1127 crop raiding incidences in the last three years[17]. Additionally, Big Life foundation embarked on constructing an "elephant exclusion" fence to keep the elephants out of people's farms. As of September 2018, about 70 km of fence had been constructed with 120km being the end target. Big Life states that so far, the fence has helped prevent about 90% of incidences in the areas where it has been placed.

However, owing to the clever nature of elephants, it will be interesting to observe if they will re-route and find ways to circumvent the fences as they have been known to work around other barriers in the past[18].

[16] It is estimated that over half of crop raiding incidences go unreported.
[17] 2016-2018
[18] Personal communication with community members in January 2019

Most crop raiding incidences occur in the areas of Kimana, Tikondo, the southern part of Mbirikani group ranch, Endonet, Enkariak Rongena, Kuku ranch and Rombo ranch. These areas are mainly along elephant corridors and are predominantly crop-growing areas. The crops that are subject to the most crop raiding incidences include maize (having the highest rate of incidences and area destroyed), tomatoes, beans, peas and potatoes. Occasionally, the elephants would raid watermelon farms, paw paws and capsicum farms.

Table 5: Acres destroyed in crop raiding incidences

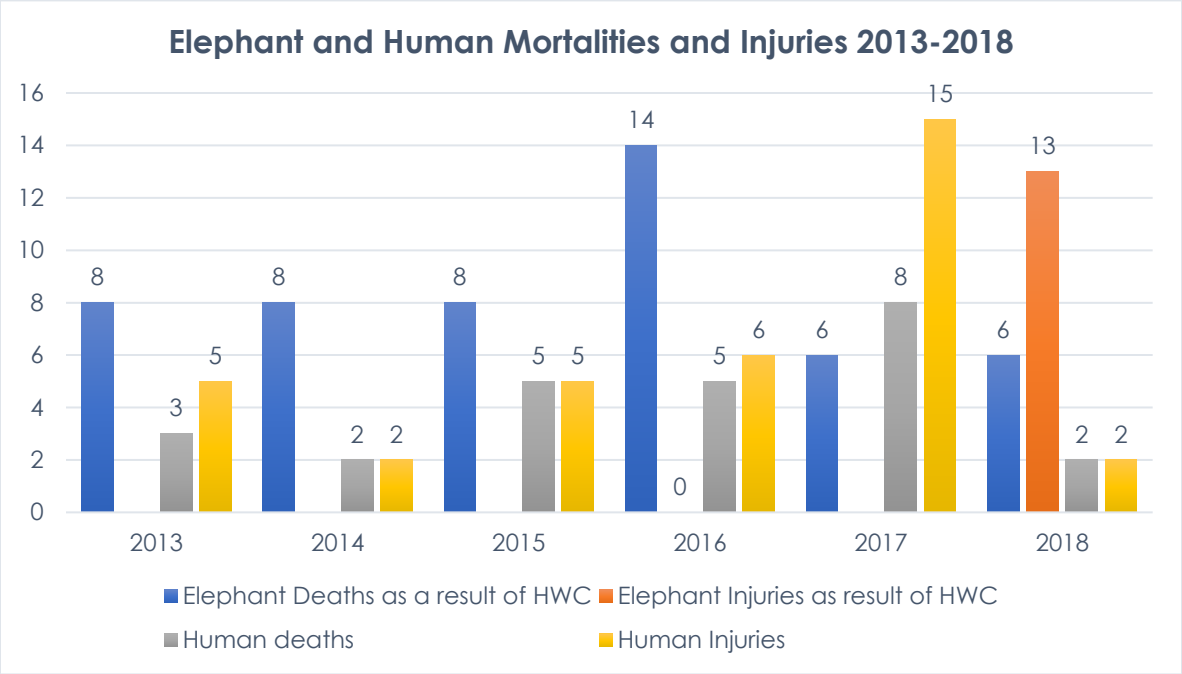
Year	2013	2014	2015	2016	2017	2018	
Acreage destroyed in crop raiding incidences	118.00	341.65	710.00	440.00	312.00	208.80	**2130.45 acres**

Crop raiding on even a small portion of land is considered extremely severe because the farmers in the area depend wholly on seasonal crops (Big Life Foundation , 2014). The other HEC hotspots are areas that are in close proximity to water sources which tend to experience the most regular incidences (Big Life Foundation, 2015).

From the quarterly reports analysed, crop raiding incidences are particularly frequent between the May-June months and the months of Nov-Dec. Additionally, crop raiding incidences surged in times of delayed rainfall and became less frequent during the wet seasons which are usually between March-June and November-December as wildlife have access to food and water during those periods (Big Life Foundation, 2014). However due to irregular rainfall patterns, the data shows that these months at times had high incidences of crop raiding in the region.

With regards to mortality, 25 people have lost their lives as a result of elephants over the last five years. Almost all the incidences of elephant death in recent years have been as a result of HEC, many of them being retaliatory attacks from community members.

Figure 7 Elephant and Human mortalities and injuries 2013-2018



This report remains conscious of the fact that, based on the information from the partners, the incidences and figures presented here are an underestimate of the actual numbers. AB is still in the process of obtaining some data from KWS who we have been informed may have more information about frequencies and incidences.

KEY INSIGHTS

1. The information in this analysis depicts a strong correlation between crop raiding incidences and weather patterns. It may be important to contact the relevant meteorological/climate departments to obtain information on forecasting when designing the scheme. It may also inform the guidelines that will be put together for the final product.
2. It may be important to consider community members who live near water sources as they may have the most frequent incidences.
3. There is a reiteration by the data received from both organizations that the HEC incidences that are on record are an under-representation of what is happening on the ground. It will be important to bear this in mind during the field visits.
4. The agricultural activities that are happening in both counties are mainly for subsistence purposes. This is a key factor to consider when designing the scheme.

Conclusion

The purpose of this report was to paint the HEC picture in two counties within the country as a starting point that will help guide the design of a microinsurance scheme. From this, we have been able to begin to understand the frequency of incidences that will inform our work and the product development. The next steps will be an inception field visit on the ground followed by a data collection period that will gather insurance-specific data to aid in the design of the scheme.

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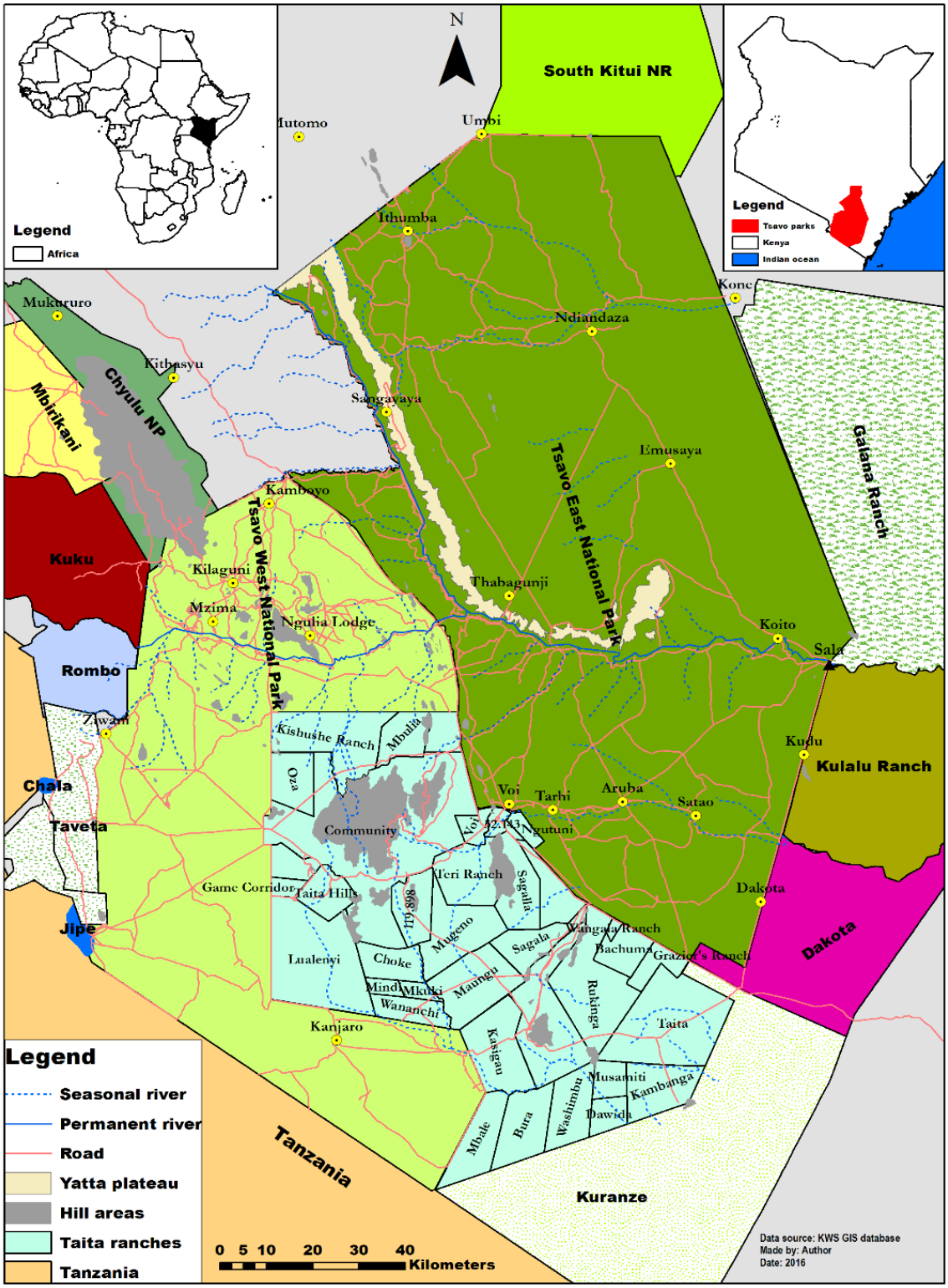
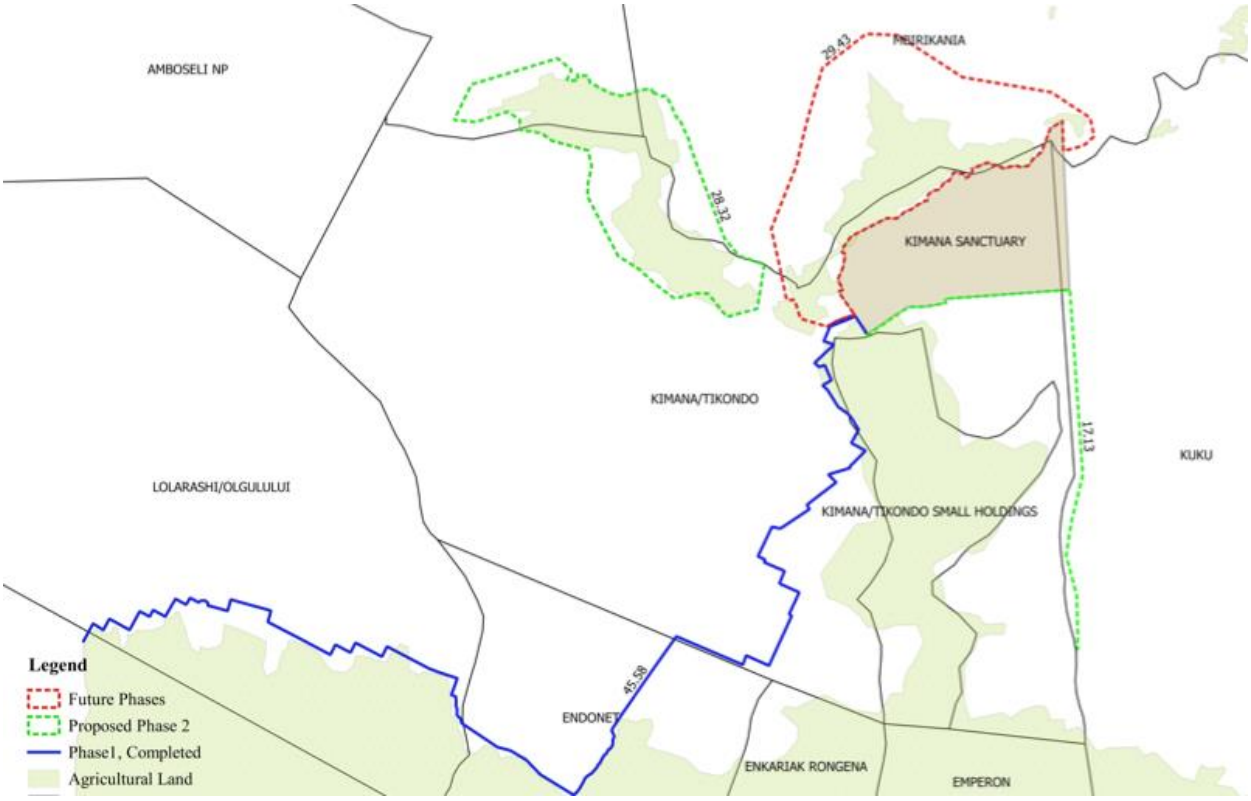
Appendices

Appendix 1: Taita Conservation Area Map



(Source: KWS)

Appendix 2: Crop protection Fence in the Amboseli Ecosystem



(Source: Big Life Foundation)

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