REPUBLIC OF KENYA

MINISTRY OF TOURISM AND WILDLIFE

TASK FORCE ON HUMAN-WILDLIFE COMPENSATION SCHEMES:

Product Pricing

July 2020

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Executive Summary

Human-wildlife conflicts (HWC) are a common occurrence around the world and specifically in Kenya where most wildlife are found outside protected areas. HWC occur when the needs of wildlife and humans overlap, leading to sharing and competition for limited resources. Among the main factors contributing to increased HWC include increase human, livestock, and wildlife populations, change in climate and land use, habitat degradation and fragmentation. Thus, communities that bear the brunt of HWC are less resilient to wildlife conservation and may result in retaliatory killings of wildlife. This threatens biodiversity conservation, affects revenue generation for the country and the inherent ecosystem services the Kenyan people derive from wildlife.

Mitigation and prevention of HWC strategies include fencing, provision of water, guarding, and compensation. Compensation for losses incurred due to HWC has been adopted in Kenya by the Government and privately as a mitigation strategy. Most compensation schemes are underfunded, often inefficient and subject to abuse. To ensure efficacy and effectiveness in HWC administration process, the Cabinet Secretary - Ministry of Tourism and Wildlife formed a Human-Wildlife Conflict Task Force that constituted of an insurance cluster subcommittee. A consultative approach including field visits and review of existing documents were adopted to come up with this report. The report proposes product design and a claims process for an insurance consolation scheme to address multiple HWCs. It elaborates on policy schedule, risks involved, justification of the set limits, exclusion, and the claims process. It further spells out the roles of each party. Use of technology is proposed to expedite and improve on service delivery on HWC. A general conclusion and specific recommendations are provided at the end of the report.

A product design is envisioned that seeks to console affected victims and seeks to relieve the government of legal liability. The product section recognizes four sections death and injury, property damage, crop destruction and livestock predation. Thus, personal bodily injury and human death from wildlife is provided based on existing standard practices i.e. the Continental Scale of Benefits, a globally accepted scale for permanent injury compensation. A proposed maximum of KES 3,000,000 for death is provided. Besides this, it is proposed that medical, pharmaceutical and hospital expenses be covered but capped at KES 150,000 as well as funeral costs at KES 50,000. Crop damage includes un-harvested growing crop where compensation is based on input costs incurred at KES 15,000 per Acre and capped at KES 150,000 per event. Livestock predation leading to death is based on Tropical Livestock Unit (TLU) (e.g. cattle is equal to 1 TLU which is valued at KES 30,000 and all other livestock are a function of this TLU). These proposed payments for these products are based on the current WCMA, Act 2013, WIBA, and evaluation of existing HWC payments.

The exclusion risk section provides a list of circumstances or conditions under which the policy does cover. For instance, the policy shall not cover injury, death or disablement caused by, contributed to or arising from accidents occurring in wildlife protected areas, injury or death as a result of an incident other than Human Wildlife Conflict etc. For crop damage the insurance shall not cover, storm, tempest, floods, subterranean fires and shall not cover crops such as hay and straw etc. For llivestock predation and depredation, the insurance shall not cover destruction in compliance with any legal requirement of Government or local or public authority, theft, and veterinary expenses. Property damage the insurance shall not cover loss by theft during or after the occurrence as a result of incidence arising out of an accident, bullion or unset precious stones, explosives etc. Claims will emanate from the government to the insurance company on behalf of parties affected by HWC. Insurance claims whether as compensation or consolation schemes generally adhere to the principles of insurance. However, timely and fair payments of consolation shall be supported by accurate data, actuarial analysis and technology. Technology ranging from Distributed Ledger Technologies such as block-chain and others such as drones, USSD and Apps can immensely improve service delivery.

The report concludes by providing a number of proposed list of amendments WCMA Act 2013 including a provision of an accelerated benefit for death to cover funeral expenses at a level of KES 50,000, and the adoption of the continental scale for permanent total disability injuries that provides varied benefits based on the level of injury. The continental scale is a globally accepted scale for injuries. Its conclusion also provides a list of recommendations for the insurance scheme to work e.g. the need to leverage technology on claims process and consideration for adoption of mobile money payment systems for claim payouts among others.

List of Acronyms

AAL- Annual Aggregate Limit

CVO- Community Verification Officer

CVR- Community Verification Officer's Report

HWC - Human-wildlife conflict

HWSRS- Human Wildlife Self Reliance scheme

PTD- Permanent Total Disability

SLA- Service Level Agreement

TOR- Terms of Reference

TLU- Tropical Livestock Unit

P&S- Pain and Suffering

WCMA - Wildlife Conservation and Management Act

1. Introduction

Human wildlife conflict (HWC) is the interaction between humans and wildlife which often leads to loss. This loss manifests in the form of death and injury of humans, livestock predation and depredation, crop and property damage, as well as death and injury of wildlife. Multiple factors interact to exacerbate HWC and they include human, livestock and wildlife population increase, land-use changes, and climate change (reduced/erratic rainfall) among others. These factors reduce food, water and space increasing competition for resources between humans, livestock and wildlife and consequently conflict is the ultimate result.

Interventions to mitigate HWC include physical measures as well as financial incentives. Thus, financial mitigation measures include compensation schemes used as a way to increase tolerance for wildlife by communities that live in or adjacent wildlife rich region (Madhusudan, 2003). Compensating for economic loss suffered through wildlife interaction can increase tolerance. This access to compensation is critical in ensuring that communities support wildlife conservation (Mukeka, et al., 2019). This will lead to sustainable biodiversity conservation and ensure ecosystem services are derived. Besides, wildlife is an important contributor to Kenya's GDP through tourism, investment and employment.

Within the compensation sphere, there exists both private and government led compensation schemes. Some selected examples globally include Sri Lanka government compensation schemes, the Human Wildlife Self Reliance scheme (HWSRS) from Namibia (both of which are government led), and the Project snow leopard compensation scheme in Pakistan (private scheme) (Wilson-Holt & Steele, 2019).

In Kenya, both government and private HWC compensation schemes/programmes exist e.g. the Government compensation scheme which as spelled out in the Wildlife Conservation and Management Act 2013 (WCMA- 2013), private compensation schemes including the Mbirikani predator compensation scheme by Big Life foundation, The Wildlife Pays programme by the Maasai Wilderness Conservation Trust, and the Predator compensation scheme by the Mara North Conservancy. These schemes are thought to contribute to increased tolerance towards wildlife in the various locations in which they are based (Wilson-Holt & Steele, 2019). This is because of their ability to alleviate financial loss which is often a pain point that at times trigger retaliatory attacks. Whether government or private, compensation schemes have not been devoid of challenges. The private schemes have been critiqued for being too species specific and largely focussing on charismatic animals like the lion leaving out other wildlife species. Other cross-cutting challenges include high costs of running such schemes, inefficiencies, fraud and lack of support from the communities.

Insurance is a possible way to improve HWC compensation processes and therefore ensure co-existence between human and wildlife. Insurance is commended for its ability to pool large numbers[1], employ technology and manage the entire client journey from registration to claim settlement in an efficient way. This will likely improve the current government run compensation which is has been unable to adequately ensure timely HWC compensation to victims. This is particularly so because conflicts that result in human death/injury and gross economic losses affect the rural poor whose livelihoods are impaired. Future wildlife support especially outside protected areas (host over 60% of wildlife) is inextricably tied to winning support from local communities that bear the brunt of conflicts.

The Human Wildlife Conflict task force which came into force on the 14th of June 2019, was formed by the Cabinet Secretary of the Ministry of Tourism and Wildlife, after a National Consultative forum. The forum, for the first time brought together, the private sector through the insurance industry, government and community-based organisations to discuss matters of Human wildlife conflict.

On the 9th to 13th September 2019 the insurance cluster subcommittee of the taskforce had a week-long workshop in Machakos University hotel to compile the product design and claims process for the proposed human-wildlife conflict insurance scheme. The subcommittee directly responded to the following Terms of Reference (TOR) from the taskforce.

- *From the Main Taskforce TOR:*
    - Examine all the Schemes presented at the Consultative Forum on Human-Wildlife Conflicts Compensation Schemes, including but not limited to:
        - Joint proposal by Insurance companies to include financial requirements.
        - Proposals by Non-State actors based on existing programs to include financial requirements, and to gauge the success, viability and sustainability of such sponsored programs.
- *From the Insurance subcommittee*:
    - Examine the schemes presented during the consultative forum by Insurance companies to include financial requirements.
    - Provide recommendations on how long-term data can be aggregated from government and non-state actors for the purpose of designing a HWC scheme.
    - Document lessons learnt from existing schemes, including the national scheme, to inform future solutions.

This report centres on product design and proposed claims process of the proposed human wildlife conflict insurance compensation scheme. It elaborates on the policy schedule, risks

[1] This is the ability of insurance companies to group risk in a way that makes it affordable and accessible to low-income populations

involved, justification of the set limits and the claims process. It will then spell out the roles of each party after which it will conclude with recommendations to the main taskforce and proposed amendments to the act.

Besides being a Human-Wildlife Conflicts Insurance proposal, the scheme will endeavour to further the governments agenda on Food Security and Universal Health Care. By providing compensation on loss of agricultural output and livestock, the scheme furthers food security in the most marginalized communities in Kenya, and by the proposed partnership with NHIF, the scheme will promote access to healthcare.

2. Methodology

To achieve its objectives, the Insurance Cluster established four groups. These are:

i. Committee on Pricing of insurance premium
ii. Committee on product design
iii. Committee on claims design and administration
iv. Committee on use of technology and innovation

In order to have a cogent understanding of issues in Human Wildlife Conflict, the team undertook field visits to conflict zones (hotspots) of Maasai Mara, Nanyuki, Taita Taveta and Amboseli. The objectives of the group included,

i. To understand the perception of residents towards wildlife coexistence
ii. To collect the citizen's views on HWC compensations
iii. To collect data on conflict species and how communities deal with them together with understanding the existing community organisations and how they work
iv. To observe and analyse biodiversity and attitudes across regions

Committees invited external experts to provide technical information and expertise, in line with the mandate of the insurance cluster group.

The Task Force also commissioned two expert studies to further guide the Task Force in making informed recommendations on the insurance financing and administration of HWC. The studies focus on the following core issues: assessment of critical interests of communities in HW conflict zones; comparative studies of funding schemes developed in other countries; and, institutional framework for the sustainable conservation and management of wildlife in Kenya.

In the course of its work, the Cluster faced some challenges. These included concluding comprehensive reports within a limited scope of time. The taskforce also faced the need to undertake surveys and studies across the country which is characterised by varied nature of communities having different language, varied biodiversity and needs.

2.1. Data Analysis process

Data analysis was undertaken on the existing KWS data on Human Wildlife Conflict between 2008 - 2019. The objective of data analysis was to:

- To identify major conflict species
- To provide the taskforce with a clear view of hotspot areas for better planning
- To lend scientific basis to the pricing team for accurate pricing
- To provide information for the general structure and design of the insurance scheme
- To help identify priority areas requiring support.

2.2. Experience of the Cluster

The cluster studied the hotspot regions, conflict maps, correspondences on wildlife conservation activities, compensation processes currently undertaken by KWS, Community Based organisations' processes in existence, ad hoc request for wildlife conservation and compensation of humans in the conflict zones

3. Product design

3.1. Introduction

As a solution to the human wildlife conflict, the task force discussed and designed a product which seeks to console the affected victims. The product is split into four sections namely Death & injury, Property damage, Crop destruction and livestock predation. The product is designed to offer faster and reasonable pay-outs to the affected as it also encourages coexistence between humans and wildlife. Below is a detailed outline into the features of the product:

3.1.1. Personal Bodily Injury and Human Death

Death or/and bodily injury directly caused by accidental, violent and external means as a result of an accident, and which shall result in death, disablement or the incurring of medical expenses to person.

Under this section the risk covered will be;

(a). Death as a result of an accident;

(b). Permanent Disablement:

(c). Pain and Suffering compensation. , as per Continental scale schedule.

- Injury specified in the Continental Scale of Benefit; or
- Injury not specified in the Continental Scale of Benefit where the injury is not specified, the Company will adopt a percentage of disablement which is consistent with the provisions of the continental scale of benefit;

(d). Medical, Pharmaceutical and Hospital Expenses

(e). Funeral Expenses for funeral arrangements

3.1.2. Crop damage

Loss or damage to unharvested growing crop as a result of damage by wildlife. The proposed compensation are based on researched input costs incurred by the farmer, capped at a maximum of KES 15,000 per acre and Maximum of KES 150,000 per event.

3.1.3. Livestock predation and /or depredation

Predation and/or depredation leading to death or on grounds of necessity on the advice of community verifying officer/ para-veterinary Veterinary/ attendants / Surgeon caused by wildlife. The bases of settlement shall be **Tropical Livestock Unit (TLU).** For the purpose of computing the claimable amount, the Livestock types shall be transformed into a standard Tropical Livestock Unit (TLU) as follow:

1TLU = KES 30,000

- 1 Cattle = 1 TLU
- 1 Camel = 1.4 TLU
- 1 Donkey = 0.5 TLU
- 1 goat/sheep = 0.15 TLU

3.1.4. Property damage

Under this section the settlement will be due to loss or damage to building and/or stock as a result of damage caused by wildlife.

3.2. Scope of each cover

3.2.1. Personal Injury

- Death: As a result of attack by wild animals based on a fixed Sum insured at a maximum specified in the policy schedule;
- Injury/Medical Expense: the actual medical, pharmaceutical and hospital expenses incurred by the person as a result of an Accident;
- Permanent Total Disablement: subject to the continental scale as attached in Appendix -1
- Pain and Suffering: based on the minimum rural National wage of Kes13,500. (but limited to the maximum period as specified in the sample policy schedule).

SECTION I - HUMAN PERSONAL - INJURY OR DEATH	
COVER:	Personal Injury/Death and Medical Expense as a result of an Accident as defined in the Policy document
SUBJECT MATTER COVERED:	Kenyan Citizens and registered residents in Kenya outside protected Wildlife areas

		Maximum Limit
LIMITS OF LIABILITY:	Death per Person	KES 3,000,000
	Permanent Total Disability	Based on Continental scale Up to a maximum 3 million
	Pain and Suffering	Up to a maximum of 12 Months
	Medical Expenses	KES 150,000
	Funeral Expenses	KES 50,000
	Note: Pain and suffering (P&S) is Kes13,500 – per month	

Table 1 Scope of cover for bodily injury and death

3.2.2. Crop damage

SECTION II - CROP DAMAGE		
COVER:	Loss or damage to unharvested growing crop following an Accident as defined in the Policy Document	
SUBJECT MATTER COVERED:	Unharvested growing crops outside the protected Wildlife areas	
LIMITS OF LIABILITY:	Per any one claim/claimant	KES 150,000
BASIS OF VALUATION:	Input cost per Acre	KES 15,000

Table 2 Scope of cover for crop damage

3.2.3. Livestock Predation and Depredation

SECTION III - LIVESTOCK MORTALITY		
COVER:	Livestock Predation and Depredation as a result of an Accident as defined in the Policy Document, leading to death and euthanasia on medical grounds	
SUBJECT MATTER COVERED:	Livestock outside the protected Wildlife areas, namely: Cattle, Camel, Goats, Sheep, and Donkey	
BASIS OF VALUATION:	Based on Tropical Livestock Units (TLU)	
	1 TLU is Equivalent to	KES 30,000
	Cattle = 1TLU	KES 30,000
	Camel = 1.4TLU	KES 42,000
	Goat/Sheep = 0.15TLU	KES 4,500
	Donkey = 0.5TLU	KES 15,000
Suggested possible conditions	• *The boma should be properly fenced*[2] • *The herder is above the age of 18 at the time of loss*	
	Note: 1TLU = KES30,000	

[2] The CVO and the KWS official on the ground will advise as to whether or not the boma was properly fenced i.e. with no gaps that would otherwise make the livestock vulnerable to attack

Table 3 Scope of cover for livestock mortality

3.2.4. Property damage

SECTION IV - PROPERTY DAMAGE		
COVER:	Loss or damage to property due to an Accident as defined in the Policy Document	
SUBJECT MATTER COVERED:	Buildings/Out Structures and Harvested Crops (Stock) outside the protected Wildlife areas ; walls, roofs, doors & gates, fences, water tanks, water pipes, water pumps, fish ponds, granaries/grain stores, shallow wells, Solar Panels, drip irrigation pipes, cattle bomas.	
LIMITS OF LIABILITY:	**Per any one claim/claimant**	**Up to KES 150,000**
BASIS OF VALUATION:	Replacement cost	

Table 4 Scope of cover for property damage

3.3 Benefits and justification for the limits

SECTIONS	BENEFITS	JUSTIFICATION
Death and Injury	1-Death limit of KES 3,000,000 - Permanent Total Disability – KES 3,000,000 - Other Injuries KES 13,500PM - Medical KES 150,000 -Funeral Expenses KES 50,000.00	- Based on Limits for Death Unser Road Traffic Act Cap 404 and AKI Circular confirming the limits - Affordability of settlement as well as disincentive to claim. - Based on rural average income - – Limit 12 months based on national index earning - Derived structure from W.I.B.A benefits - Based on NHIF out patient limits - Funeral Average Burial costs
Livestock predation & depredation	- Cows KES 30,000 (1 TLU) - Goats/Sheep 0.15 TLU - Camel 1.4TLU - Donkey 0.5TLU	Based on FAO Guidelines also best practice. 1TLU = Kes30,000. - ❖ 1 Cattle = 1 TLU ❖ 1 goat/sheep = 0.15 TLU ❖ 1 Camel = 1.4 TLU

		❖ 1 Donkey = 0.5 TLU
Crop Damage	- Basic Input Cost per acre of maize as a base for settlement KES 15,000 per acre Max. KES 150,000	- Analyzed 55 Crops grown in wildlife conflict zones. Picked average input cost and settled on Maize input cost as the base. Maximum we have fixed maximum at KES 150,000 in all
Property damage	- KES 150,000 Maximum for property damage.	- Based on the values of properties within the areas buildings, stores, water pipes, machinery

Table 5 Justification for proposed insurance limits

3.4 Exclusion for each risk

3.4.1 Personal Injury

This Policy does not cover injury, death or disablement caused by, contributed to by or arising from:

a) Accident happened in a National park, National reserves, sanctuaries, forest reserves closed conservancy, and prohibited areas within established wildlife conservancies.
b) Injury or death as a result of an incident other than Human Wildlife Conflict;
c) Intentional self-inflicted injury;
d) Suicide or any attempt threat;
e) Own criminal act, dueling, or fighting;
f) Bacterial, viral, fungal infection other than infection occurring as a consequence of an accident;
g) Any pre-existing and/or recurring illness, condition, physical defect or mental infirmity;
h) Claims and/or medical costs relating to the Person willful exposure to the Wildlife peril;
i) Suffering from any sickness, disease or infirmity not resulting from accidental bodily injury;

In the event of any claim hereunder the insured/claimant shall when so require by the Company prove that the claim arose independently of and was in no way connected with or occasioned by or contributed to by or traceable to any of the said occurrence or any consequence thereof and in default of such proof the Company shall not be liable to make any payment in respect of such a claim.

3.4.2 Crop damage

This insurance does not cover:

a) Storm, tempest
b) Rain, Hail or Snow provided the building in respect of which the claim is made or containing the property in respect of which a claim is made is so damaged by any of the perils specified in (A) above as to admit water to the interior of the said building.
c) Flood
d) Aircraft and other aerial devices or articles dropped there from
e) Impact with any building containing the crop by any road vehicle, horse or cattle
f) Subterranean fire
g) Accident due to Wildlife other than those indicated in the list of Wildlife
h) Uncontrollable Pests and Diseases, including uncontrollable birds.
i) Any Crop which has been harvested prior to inspection by the Assessor/ Community Verification.
j) Hay and Straw
k) Infestation, vermin, pests, livestock, birds, insects and other natural enemies or disease of every description whether evident in the crop before or after an insured event.
l) Loss or damage to crop occasioned by its own fermentation, natural heating or spontaneous combustion.
m) The burning of the crop by order of any public authority, or by subterranean fire.

3.4.3 Livestock Predation and Depredation

This insurance does not cover loss directly or indirectly caused by or arising from or in consequence of attributed to be:

a) Livestock injury
b) Slaughter of animal (s) without the consent of the Community due to lack of time where consent of the Company is not obtained unless it is the opinion of a qualified Veterinary Surgeon that immediate slaughter is necessary.
c) Destruction in compliance with any legal requirement of Government or local or public authority.
d) A Livestock becoming unfit or incapable of fulfilling the duties for which it is kept.
e) Any disease arising out of external parasites.
f) Theft.
g) All losses caused by mismanagement.
h) All Illness, disease or epidemics contracted.
i) Veterinary expenses.

3.4.4 Property damage

1. This insurance does not cover:

   a) Loss by theft during or after the occurrence as a result of incidence arising out of an Accident.
   b) Loss or damage to property occasioned by its own fermentation, natural heating or spontaneous combustion
   c) Loss or damage occasioned by or through or in consequence of the burning of property by order of any public authority.

2. Unless otherwise expressly stated in the Policy this insurance does not cover:

   a. Bullion or unset precious stones;
   b. Any curios or work of art;
   c. Manuscripts, plans, drawings or designs, patterns, models or moulds.
   d. Securities, obligations or documents of any kind, stamps, coined or paper money, cheques, books of account or other business books, computer system's records.
   e. Coal, against loss or damage occasioned by its own spontaneous combustion.
   f. Explosives.

3. This insurance does not cover any loss or damage to property which, at the time of the happening of such loss or damage, is insured by or would, but for the existence of this Policy, be insured by any Marine Policy or Policies, except in respect of any excess beyond the amount which would have been payable under the Marine Policy or Policies had this insurance not been effected.

4 Claims Administration

4.1. Introduction to claims

An Insurance claim is a demand made by the person or entity insured and addressed to the insurance company for the payment of benefits under a policy. In the current situation, request for compensation will emanate from the government/ claimant to the insurance company on behalf of parties affected by HWC. The unique nature of HWC claims is that it leans towards a consolation structure as opposed to a compensation structure. Compensation structure is meant to reimburse an aggrieved party for actual loss suffered and reinstate them back to the condition they were before the loss occurred. On the other hand, a consolation structure is some form of comfort given to an aggrieved party following a loss. A consolation does not reimburse the party for their actual loss and rarely is it equivalent to the loss originally suffered.

Insurance claims whether as compensation or consolation schemes generally adhere to the principles of insurance.

The Principles of Insurance

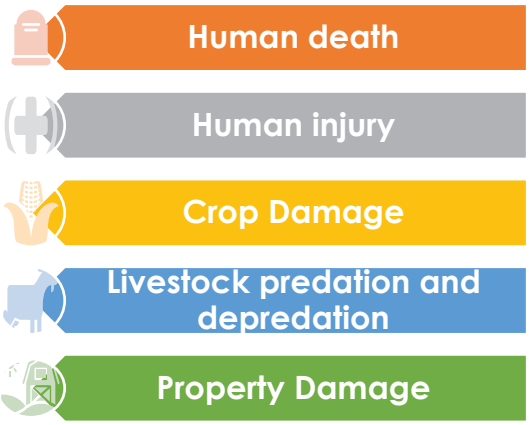
i. Principle of insurable interest – the party being compensated must have actual financial interest in the property destroyed or damaged
ii. Principle of indemnity – the party being compensated should not benefit from the loss by receiving compensation or consolation that is of more value than the property lost
iii. Principle of utmost good faith – the party being compensated must act in good faith and not submit exaggerated or fraudulent claims
iv. Principle of subrogation – the party being compensated must be willing to surrender any other right for compensation in respect of the same loss to the insurance company
v. Principle of contribution – in case of the damaged property being double insured, the respective insurance companies will contribute equitably towards the same loss
vi. Principle of proximate cause – concerned with how the loss occurred which must be losses intended to be covered under the policy

A key criterion for successful insurance consolation schemes is acceptable payments made to aggrieved parties within short time period. Success of such a scheme will be dependent on the following areas four challenges being handled effectively:

- Cost effective scheme administration
- Timely and fair insurance payments
- Incentives for future damage prevention
- Financial sustainability of premium payments

Timely and fair payments of consolation can be supported by accurate data, actuarial analysis and technology with aggrieved parties kept updated through mobile SMS on the progress of their claims. Consolation payment for small claims can also be equally channelled through mobile money.

The types of claims that will be entertained as a result of HWC include:



4.2 Claims Process Flow

Demand for compensation in respect of events above will be addressed by the insurance Company in accordance with process flow below:

Figure 1 Claims process: Human death and Injury

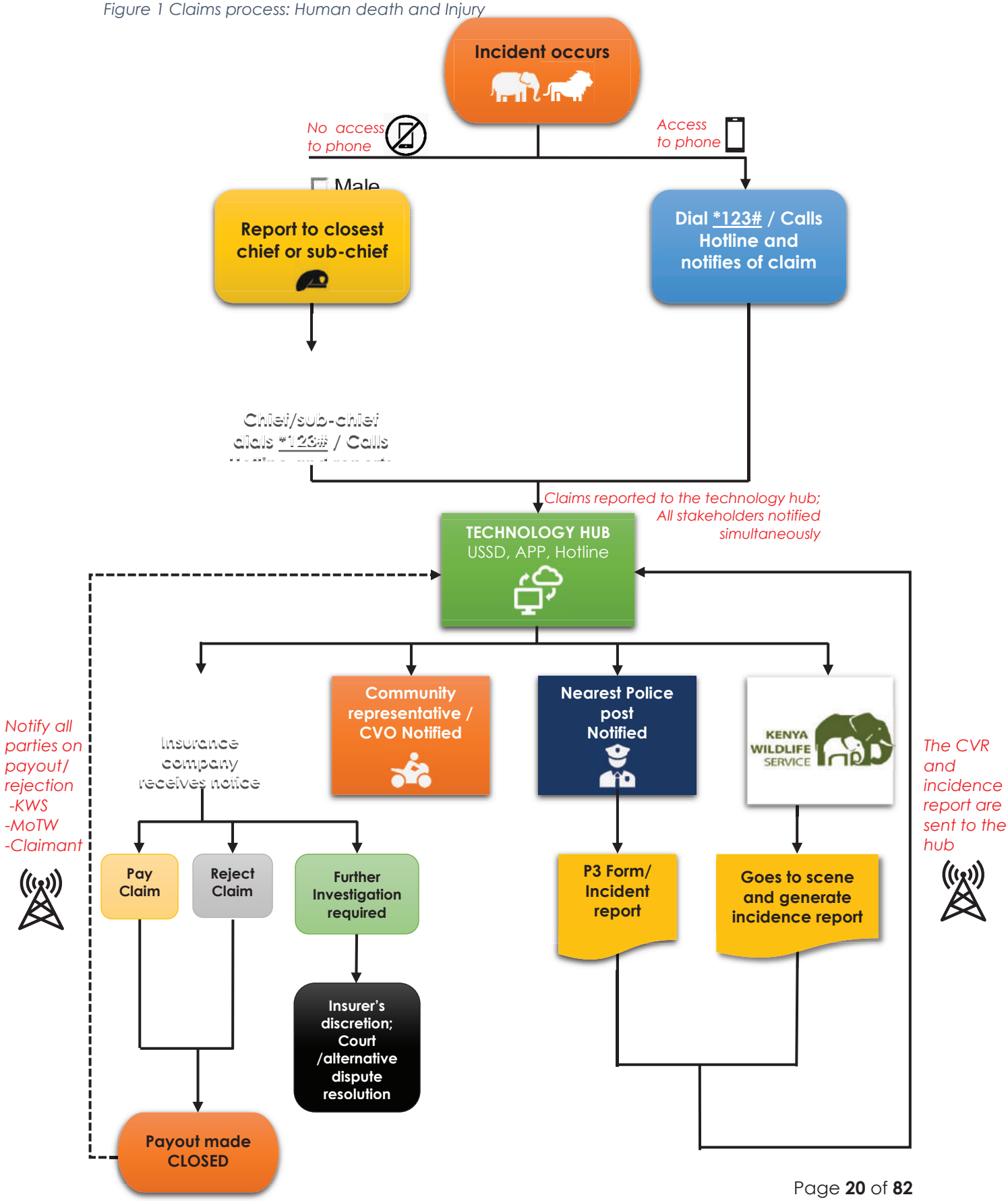
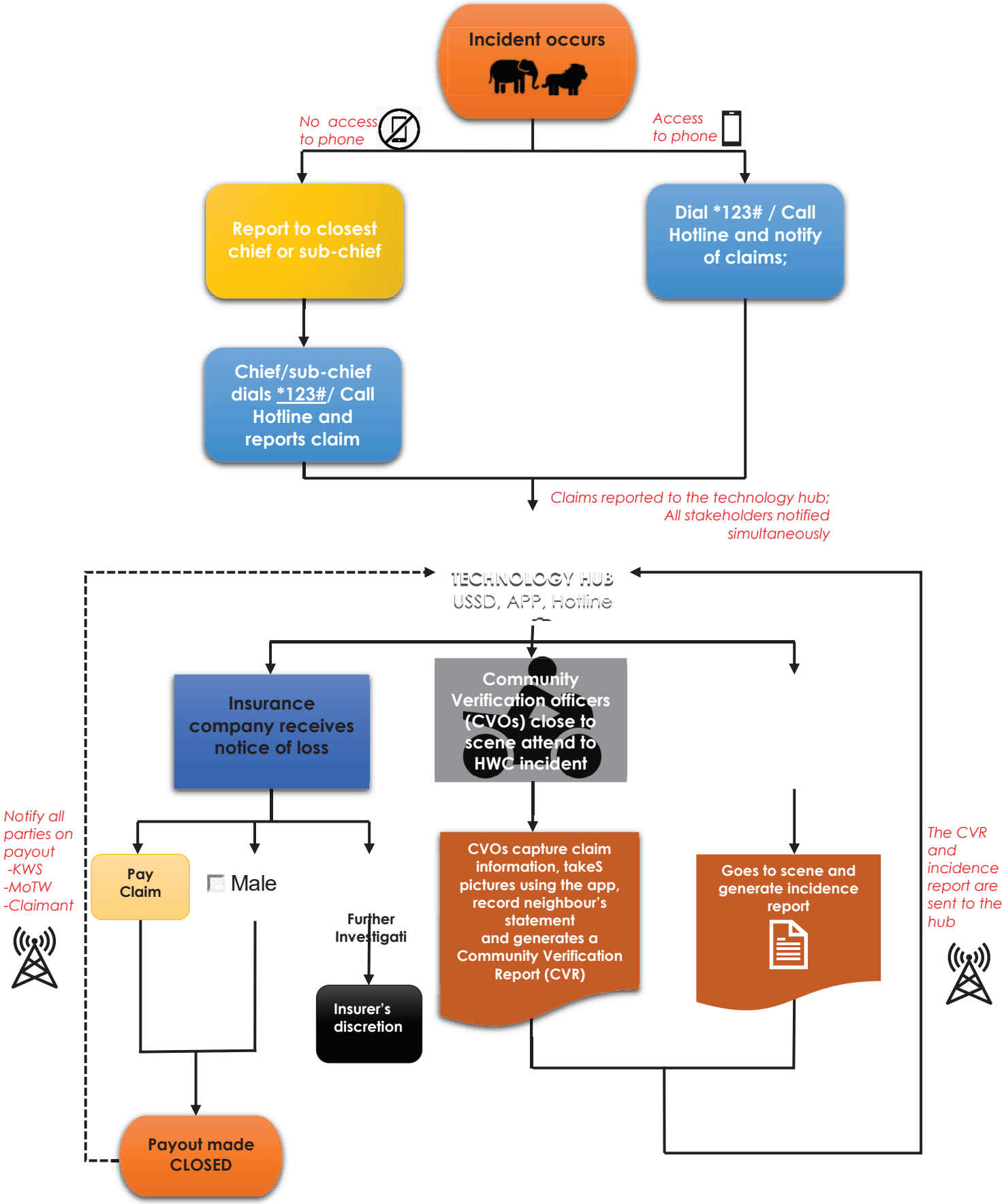


Figure 2 Claims process, livestock, crop and property damage



4.2.1 Claims Process Explained

1. A sudden and violent attack from occasioned by wildlife on the claimant resulting in either of the following;
    i. Loss of Human life
        a. Human injury leading to medical expenses: *Permanent Total Disability (PTD) and Pain and Suffering (P&S)*
    ii. Crop Damage
    iii. Animal predation/depredation
    iv. Property Damage
2. Notification is made by the claimant either individually through the USSD code or by dialing the hotline; or through the nearest local government representative, invariably the chiefs/sub chiefs. They become the first point of call and advise the claimant accordingly. On receipt of the notification, the technology hub simultaneously notifies all stakeholders, that is the local KWS outpost, community representatives, the police (in death and injury instances), and the insurance company. (*we propose a single simultaneous call to these entities*)
3. KWS receives the incidence notice and dispatches appropriate field officers to assess the nature of damage on the ground. KWS agents also carry with them a comprehensive incidence report form to capture more details
4. For livestock predation, crop and property damage, Community Verification Officers (CVO) nearest to the scene are notified through the technological hub and they attend to the scene as soon as possible. They capture the claim information and take pictures & record neighbour's witness statement through voice or video recording. The witness will append and verify that what the CVO is recording appropriate information. All these facets will generate a Community Verification Officer's Report (CVR). The information is immediately reflected in the hub.
5. The CVO works at the ward level and reports to the to the County Insurance Representative who will check claim documentation and either request for further information or recommend for payment to the insurer.
6. For human death and injury, the CVO will also be on the ground as a representative of the community and the insurance company.
7. In the event of death and extreme injuries, the insurer may send a private investigator for further scrutiny.
8. Insurance company meanwhile opens a claim file for the client but await to be furnished with the requisite documentation (See section below).
9. On filling the incidence report, KWS sends a copy of incidence report to the insurance company via the technology hub who in turn request for relevant documents from claimant

10. Claimant fills insurance claim form[3] and sends requisite documents to insurance
11. Insurance undertakes a verification and assessment process and if satisfied completes the claim analysis. After these, they issue the pay/not pay verdict
12. If the insurer is satisfied and issues a pay verdict, the client is called upon for the offer and to sign the discharge voucher + issue bank/payment details
13. This is followed by claim benefit remittance to the bank/mobile bank (cheque, EFT, mobile transfer depending with size of the benefit and the agreement)
    - Verdict details will be communicated to the claimant by the insurer
    - Advise and request for further documentation will be communicated by the insurer to the claimant
    - Specific documentation and personnel requirements are elaborated below
14. Sometimes, the claimant may challenge the payout amount or any other aspect regarding Payment and may go to court to challenge the payout decision. In this case, the insurer appoints a legal representative to guide through the process. The case may then proceed to court or alternative dispute resolution organ whereupon a verdict of payment or no payment is given

15. Upon the submission of all the necessary documentation, the lifetime of the payout should be 60-90 days

[3] The proposed detailed claims forms can be found in Annex 1, 2, 3 and 4

4.2.2 Claims Requirements and Documentations

Requirements	Death	Human Injury	Property Damage	Crop Damage	Livestock predation
Notification	Standard- notifications to the chief via call/USSD/ Physical reporting	Standard- notifications to the chief via call/USSD/ Physical reporting	Standard- notifications to the chief via call/USSD/ Physical reporting	Standard- notifications to the chief via call/USSD/ Physical reporting	Standard- notifications to the chief via call/USSD/ Physical reporting
Documents to accompany duly filled claim form	• Police abstract • Death Notification • Incident Report from KWS • Burial permit • Post-mortem • Death certificate • Certificate of dependency (by chief) • ID of the next of kin	• Prescribed Medical Report form (insurance) • (P3 form)- police • Incident Report from KWS • Medical expenses bill • Medical discharge summary where admitted • Doctor's progress report • Copy of ID/Birth certificate • Photographs[4] • Doctor's monthly review	• Community Verification Officer (CVO) report • Photographs • Incident Report from KWS • Estimates for repairs (optional) • Chief's statement • ID document	• Community Verification Officer (CVO) report • Incident Report from KWS • Photographs • Assessor report (optional) • Chief's statement	• Community Verification Officer (CVO) report • Incident Report from KWS • Photos • Chief' statements

[4] Claimants **MUST** consent for any photographs or personal data to be taken; the insurance company **MUST** ensure privacy of the information

Person Required	Medical/ police officers/ chief/ witness/KWS officer/next of kin/Registrar of births and deaths/	Medical/ police officers/chief/witness/ KWS officer/registrar of births/ Investigator	Community Verification Officer/ KWS officer/ Chief or sub-chief	Community Verification Officer/ KWS officer/ Chief or sub-chief	Community Verification Officer/ KWS officer/ Chief or sub-chief
Time	- 24 hr notification timeline - 14-day period for all documentation to reach insurer - Last expense paid within 48 hours subject to documents highlighted above - Payment/deferment/rejection to be done within 90 days of receiving all documentation	- 24 hr notification timeline - 14-day period for all documentation to reach insurer - Payment/deferment/rejection to be done within 90 days of receiving all documentation	- 24 hr notification timeline - 14-day period for all documentation to reach insurer - Payment/deferment/rejection to be done within 90 days of receiving all documentation	- 24 hr notification timeline - 14-day period for all documentation to reach insurer - Payment/deferment/rejection to be done within 90 days of receiving all documentation	- 24 hr notification timeline - 30 Days upon satisfaction of all docs - Payment/deferment/rejection to be done within 90 days of receiving all documentation

Table 6 Insurance Claim Requirements for Each Risk Type

5 Roles of each party

The Human Wildlife Conflict Compensation Scheme is envisioned to be a public private partnership between several players in the public and private sector. Currently, all roles in the compensation scheme are carried out by public administration and government agencies. The proposed insurance scheme seeks to provide a process that is seamless and efficient that leverages on both the private sector, public sector and the community for the success of the scheme. It is envisioned that the following parties will be involved:

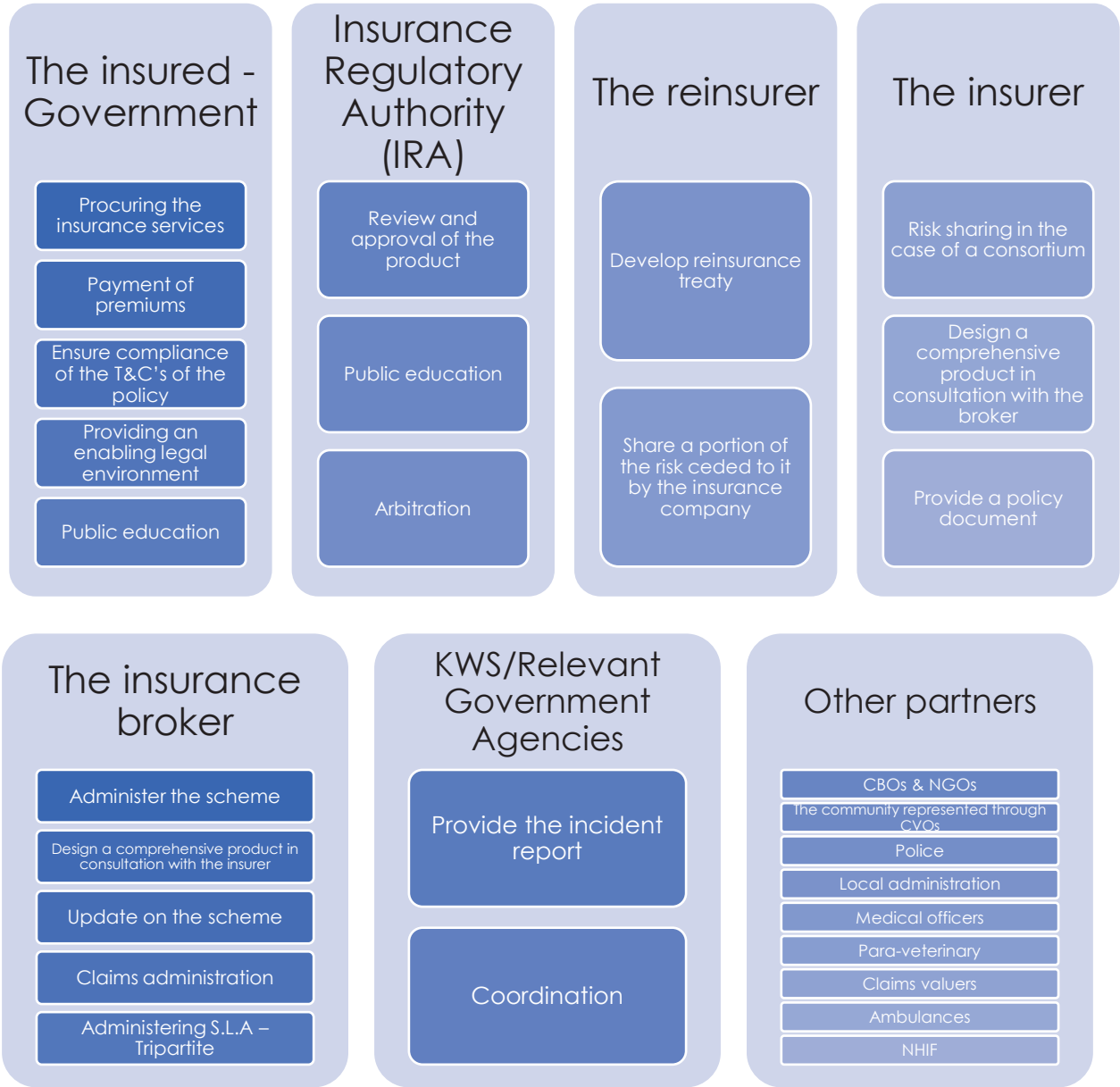


Figure 3 Roles of different players

6 Use of Technology

In its current iteration, the incidence notification and reporting process with regards to Human Wildlife Conflicts (HWCs) is highly centralized and over-reliant on an already strained Kenya Wildlife Service (KWS). In cognizance of this, initiatives must be undertaken to unshackle the burden of responsibilities on KWS and not only delegate, but empower and decentralize some of these functions to other capable stakeholders.

Presently, upon the occurrence of an HWC incident, a KWS ranger is sought out by members of the public through their various local administrations (Chief or Sub-Chief), thereafter, it is the KWS officer's duty to not only manage the animal responsible, but manually log the incidence data and related information back to the nearest KWS outpost, subsequently the data has to be electronically transcribed and relayed to KWS Headquarters. Evidently, the process is inherently clunky and almost entirely "human-centered"; consequently, fraud incidences have become ubiquitous.

As private insurance wades in to try and resolve the front-end shortcomings of the compensation process such as benefits payments, back-end administrative functions are also due a considerable revamp. Intuitively, this transmutation will be embedded with technology, specifically, we propose the use of Distributed Ledger Technologies such as blockchain, drones, USSD and Apps.

6.1 Blockchain/Distributed Ledger Technologies (DLTs)

6.1.1 Introduction

A blockchain system, also known as distributed ledger technology (DLT), handles and shares transaction records across a network of users. Blockchain acts as a distributed public ledger; it is a digital record of transactions and ownership, that is replicated among all the participants of a peer-to-peer network. A consensus algorithm ensures that each node owns the same copy of the ledger as the other nodes[5]. The records can be verified by each user, and transactions are tied together using cryptography so that altering the records is nearly impossible. Blockchains allow for transparency, efficiency, immutability of records, auditability, and security, which reduce problems of system component and database redundancy, fraud, misuse, and many cybersecurity challenges[6].

[5] Ellervee A., et al. (2017). A Comprehensive Reference Model for Blockchain-based Distributed Ledger Technology
[6] Zhang, K. & Jacobsen, (2018). Towards Dependable, Scalable, and Pervasive Distributed Ledgers with Blockchains

Although Blockchain derives its origins from technologies introduced already decades ago, in recent years it gained popularity with Bitcoin. In 2008, an anonymous individual, or a group of individuals, under the pseudonym of Satoshi Nakamoto published a white paper whereby the Blockchain digital currency application called Bitcoin was developed. Bitcoin is the first example of widespread decentralised digital currency which provides a solution to the problem of trust in a currency system. The Bitcoin blockchain is a public decentralized peer-validated time-stamped ledger which is distributed and publicly available to all participants that chronologically registers all validated transactions. Transactions are broadcasted to the Bitcoin network and their validity is verified independently by peers. Valid transactions are collected into blocks which are cryptographically sealed and interlocked one on top of the other in a chronological sequence: a chain of blocks. As a matter of principle, participants do not even need to be humans, they can be autonomous agents operating independently from any human intervention[7].

Independently from its original technological design and application, blockchain is a foundational technology that leads to the paradigm shift from "trusting humans" to "trusting machines" and from "centralized" to "decentralized" control. Indeed, to better grasp the potentialities of blockchain one should look at it by using two different lenses. With the first lens, it can be an "ICT technology" to record ownership of on/off platform assets and rights/obligations arising from agreements. Any type of data can be recorded on a blockchain, from ownership of assets to contractual obligations, to creative art copyrights or credit exposures or digital identity. With the second lens, blockchain can be seen as an "institutional technology" to decentralise governance structures used for the coordination of people and economic decisions making[8].

Governments and organizations around the world are beginning to look seriously at the application of this technology, and some have already implemented it. The main drawing card of this innovative technology is the production of immutable trustworthy records without need of a trusted third party[9].

6.1.2 Advantages and Disadvantaged of Blockchains

Advantages

[7] Aste T., et al. (2017). Blockchain Technologies: foreseeable impact on industry and society
[8] Tasca, P. (2005) Digital currencies: Principles, trends, opportunities, and risks.
[9] Lemieux V., L. (2017). Blockchain and Distributed Ledgers as Trusted Recordkeeping Systems: An Archival Theoretic Evaluation Framework

i. **Decentralization**: Blockchains are inherently decentralized, do not rely on a trusted third party for reliability, and provide censorship resistance for data and ĐApps[10]. Furthermore, blockchain data should remain confidential and anonymous when operating in a thrustless environment.

ii. **Consistency:** The blockchain data should be exactly identical at all peers and at all times. Previously committed transactions are immutable. The current state of the blockchain should be completely verifiable using the entire history of the blockchain. The results of blockchain queries should be identical no matter which peer is contacted.

iii. **Scalability:** The performance (i.e. higher throughput[11], lower latency[12]) and availability of the system should increase as the amount of resources allocated (e.g., number of peers[13], computational power, etc.) increases. The system should be able to handle increasing volume of concurrent users, smart contracts, and queries.

iv. **Accountability**: All transactions are automatically linked. Records are not edited or deleted directly in Blockchain. Rather, in the case of an edit, the original record is kept together with the associated change. In the case of deletion, the original record is again kept along with the subsequent reversal of the entry. If a deletion were ever to be attempted, all users in the network would be alerted. In view of the robustness of this security feature, the government of Estonia uses Blockchain to ensure the integrity of digital registries and repositories, allowing rapid detection of any attempts to attack, modify or compromise the system[14].

Disadvantages

i. **Human error**: If a blockchain is used as a database, the information going into the database needs to be of high quality. The data stored on a blockchain is not inherently trustworthy, so events need to be recorded accurately in the first place[15].

ii. **High energy consumption:** The consumption of power is needed for keeping a real-time ledger. Every time the new node is created and in the same time it communicates with each and other node. In this way the transparency is created[16].

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[10] A decentralized application (DApp, dApp, Dapp, or dapp) is a computer application that runs on a distributed computing system

[11] The amount of material or items passing through a system or process

[12] The delay before a transfer of data begins following an instruction for its transfer

[13] "peers" are computer systems which are connected to each other via the Internet

[14] Emerging Digital Technologies for Kenya: Exploration and Analysis, (2019) The Distributed Ledgers Technology and Artificial Intelligence Taskforce

[15] What are Blockchain's Issues and Limitations? https://www.coindesk.com/information/blockchains-issues-limitations

[16] Golosova J., & Romanovs A. (2018) The Advantages and Disadvantages of the Blockchain Technology

iii. **Cost:** Blockchain offers tremendous savings in transaction costs and time but the high initial cost could be a deterrent[17].

6.1.3 Need for a Blockchain solution

In order to understand why blockchain is a pertinent solution, we must deconstruct the current HWC notification and reporting problem as a Byzantine Generals Problem (BGP). Simply, a BGP Problem gets its name from a 1982 paper in which Leslie Lamport and two co-authors described an allegory for the problems of decentralized decision-making. The allegory goes like this: the night before a battle, a group of Byzantine generals in different camps, each with command over a portion of the army, try to decide whether to attack or retreat. Messages between the generals are passed by messengers. However, there is a problem. Some generals and some messengers may be traitors to the cause. Traitorous generals would be interested in sabotaging the plans of loyal generals, and traitorous messengers would be interested in altering the messages entrusted to them by loyal generals. So the loyal generals need to find a way to reach consensus even with the knowledge that betrayal was possible[18]. The ability to tolerate what computer scientists call "byzantine failures" is a crucial part of blockchains' ability to maintain reliable records of transactions in a transparent, tamper-proof way[19], through use of consensus protocols.

Evidently, the current HWC incidence reporting and notification process displays the three symptoms of a typical BGP Problem, as shown below;

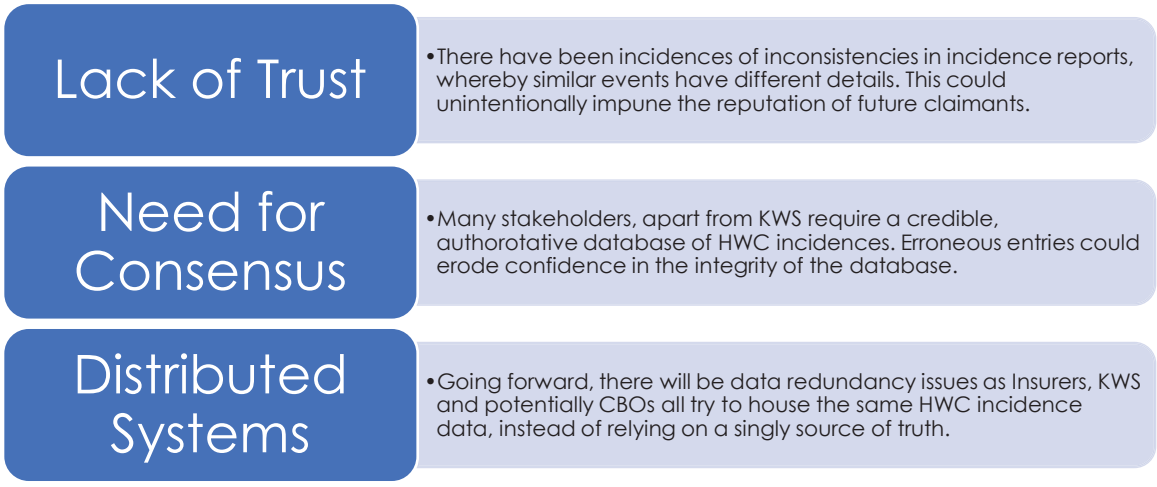

Figure 4 Properties of a BGP problem potentially observed in the HWC Database

[17] Woochul S et al. (2016) Advantages & Disadvantages of Blockchain Technology
[18] Bankex, (2018) What is the Byzantine Generals Problem, Anyway?
[19] Tozzi C., (2017). Byzantine Fault Tolerance: The Key for Blockchains

Blockchains can overcome the problem through adoption of various consensus protocols, which are one of the most important and revolutionary aspects of blockchain technology. As a term, 'consensus' means that the nodes on the network agree on the same state of a blockchain, in a sense making it a self-auditing ecosystem. This is a crucial aspect of the technology, carrying out two key functions. Firstly, consensus protocols allow a blockchain to be updated, while ensuring that every block in the chain is true as well as keeping participants incentivized. Secondly, it prevents any single entity from controlling or derailing the whole blockchain system. The aim of consensus rules is to guarantee a single chain is used and followed.

These protocols create an irrefutable system of agreement between various devices across a distributed network, whilst preventing exploitation of the system[20]. Blockchain consensus protocols are what keep all the nodes[21] on a network synchronized with each other, while providing an answer to the question: how do we all make sure that we agree on what the truth is?

After all, anyone can submit information to be stored onto a blockchain and therefore it is important that there is review and confirmation, in the form of a consensus about whether to add that information. What this means, is that KWS will be able to empower anyone with the ability to report incidences on their database, not only will everyone on the database be notified on the addition but each node will have to confirm either manually or automatically whether the information has met certain pre-determined authentication criteria such as GIS location and time signatures.

6.1.4 Proposed Solution: Creation of an Integrated HWC Management Blockchain

A blockchain is actually a database because it is a digital ledger that stores information in data structures called blocks. A database likewise stores information in data structures called tables. However, while a blockchain is a database, a database is not a blockchain[22].A blockchain database utilizes blockchain technology to create an immutable ledger of transactions. Data is recorded as blocks. As each new transaction or block is recorded, it is added to the chain. As a result, a blockchain contains every transaction recorded since the ledger was started[23].

A distributed client-server database uses a centralized server or servers to maintain the database and to allow users to access it. While users can access and modify the data, the master copy is

[20] https://lisk.io/academy/blockchain-basics/how-does-blockchain-work/consensus-protocols
[21] A device connecting to a blockchain network
[22] Tabora V., (2018) Databases and Blockchains, The Difference Is In Their Purpose And Design
[23] How to Use Blockchain to Build a Scalable Database? https://www.devteam.space/blog/how-to-use-blockchain-to-build-a-scalable-database/

always stored on the central servers. Users are required to have permission to access the data, which is granted by the administrators that control the network. Once data is modified by a user, any change will be recorded by the central server before then being updated for anyone else viewing the database. A key component of a distributed database is that it is highly scalable, something which allows companies to store and access huge amounts of data in real-time.

A blockchain database, on the other hand, is completely decentralized. The database is maintained and controlled by a set of users who act as active participants. Every participant is required to validate a transaction before it can be recorded to the database. This makes blockchain technology far more secure as every participant acts independently of one another. This means that they will act to prevent any unauthorized modification of data stored in the chain, so any hacker, for example, would need to take over the majority of the nodes in the network in order to make such a change, a rough illustration is a shown below:

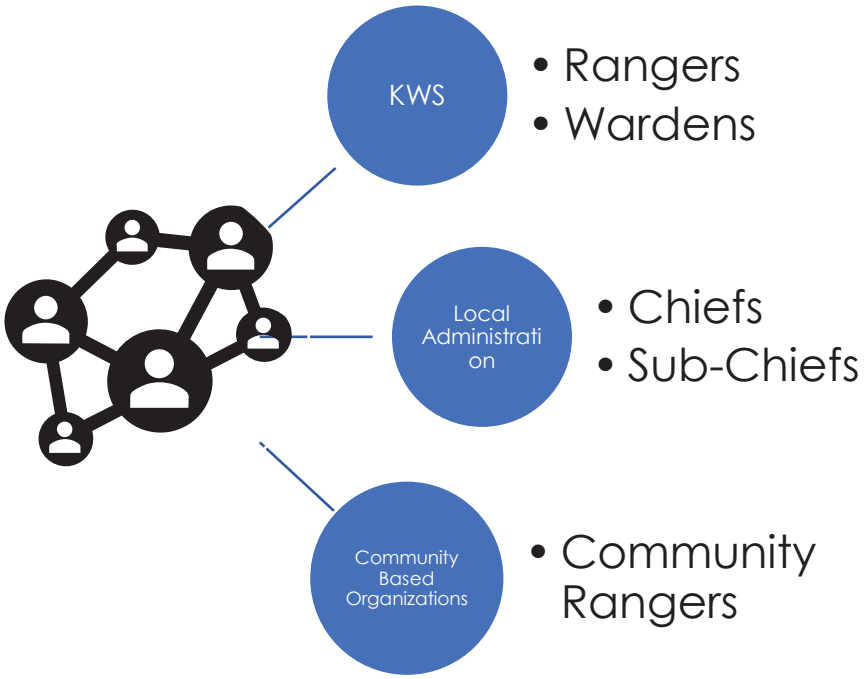

Figure 5 Structure of the Proposed Integrated HWC Management Blockchain

Not only will such a structure decentralize Human Wildlife Incidence reporting from being a purely KWS function, but it will rid the current data of the potential risk of being the single source of failure (SPOF), whereby, under a blockchain database, the database will continue to be operational no matter any eventuality on the KWS data servers. The Blockchain technology we propose will also be permissioned; meaning KWS has the rights to define different permissions on different users on the network. There can be different permissions for reading data, creating transactions, validating blocks, creating new ones and others.

A new incidence notification from a permissioned user will therefore alert all potential users of the blockchain as shown in figure below:

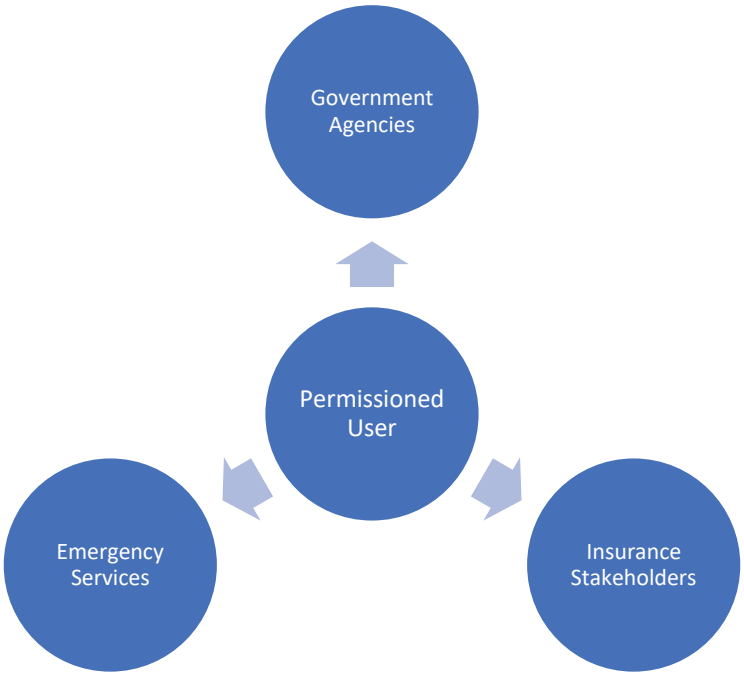

Figure 6 Proposed Incident Notification alert on a blockchain database

A blockchain enabled database will therefore enable various non-KWS actors such as emergency services and insurance companies to be alerted upon the announcement of a new incident on the blockchain.

6.1.5 Recommendation

As highlighted by the The Distributed Ledgers Technology and Artificial Intelligence Taskforce, Blockchain solutions have the potential to transform government operations and make them more efficient for better public service delivery. This in essence will lead to increased trust in the public sector[24].

Additionally, it is our belief that a blockchain enabled database will free KWS from the shackles of being the sole custodian and rapporteur of KWS incidence data. Blockchain will enable KWS to empower the local and even county administration to take responsibility of their communities' welfare with regards to HWC incidence reporting and notification. Additionally, a blockchain enabled solution will allow for multi-sectoral coordination as more stakeholders such as Health

[24] Emerging Digital Technologies for Kenya: Exploration and Analysis, (2019) The Distributed Ledgers Technology and Artificial Intelligence Taskforce, p. 18

Insurers, Emergency services and local administration can all be simultaneously be involved the very second any incidence is reported.

6.2 USSD

6.2.1 Introduction

Unstructured Supplementary Service Data (USSD) technology is a real time session-based messaging service between the cell phones and an application server in the network. The service is a cross-platform hand-set support facility (basic feature phones and smartphones)[25]. The service that allows high-speed interaction between mobile clients and services, which typically take the form of applications. The USSD gateway is part of the infrastructure that makes this interaction possible by acting as an interface between the services and the GSM network, allowing the user interaction. Messaging through the GSM network consists of USSD and SMS, and both are complementary, although they use different gateways[26], unlike SMS, USSD transactions occur during the session only. With SMS, message scan be sent to a mobile phone and stored for several days if the phone is not activated or within range[27].

USSD's simplicity is what makes it so powerful, as all phones can easily support it without the processing hardware demanded by smartphone platforms such as Android and iOS[28]. The high Internet penetration in some parts of the world has made it such that USSD could never be useful, and thus very little innovation has taken place on top of it. But Africa is special; The continent has about 18% Internet penetration but over 80% mobile penetration. This 80% that are connected on mobile represent over 960 million people who have phones.

According to the Communication Authority[29], As at 30th September 2018, the number of active mobile subscriptions in the country stood at 46.6 million. This marked a growth of 2.4 per cent when compared to 45.5 million subscriptions recorded as at 30th June 2018. Subsequently, mobile penetration2 rose by 2.3 percentage points to stand at 100.1 per cent from 97.8 per cent reported last quarter. During the period under review, mobile penetration surpassed the 100 percent mark mainly attributed to the fact that most users own more than one SIM card either from the same or different service providers. This fact is also supported by the Kenya Integrated Household Budget Survey (KIHBS) report released by Kenya National Bureau of Statistics (KNBS) in April 2018 which

[25] Zhou, Munyaradzi & Herselman, Marlien & Coleman, Alfred. (2015). USSD Technology a Low-Cost Asset in Complementing Public Health Workers' Work Processes. 10.1007/978-3-319-16480-9_6.
[26] Juan L., V. et al (2017) Technological Crusade Between TIC and The Agricultural Sector for The Future of Colombia Using The SMS And USSD
[27] https://searchnetworking.techtarget.com/definition/USSD
[28] Jalakasi W. (2018) How a 20-year old mobile technology protocol is revolutionizing Africa https://qz.com/africa/1296120/how-a-20-year-old-mobile-technology-protocol-is-revolutionizing-africa/
[29] First Quarter Sector Statistics Report for The Financial Year 2018/2019 (JULY-SEPTEMBER 2018)

indicated that at least 30% of mobile users in Kenya own more than one SIM card, which translates to an average of 1.3 SIM cards per subscriber. Additionally, During the period under review the number of mobile data/Internet subscriptions grew by 2.7 per cent to post 41.8 million from 40.7 million subscriptions registered during the previous quarter. However, as illustrated in figure below, 2G, 3G and 4G coverage in Kenya is still limited to the main cities and towns.

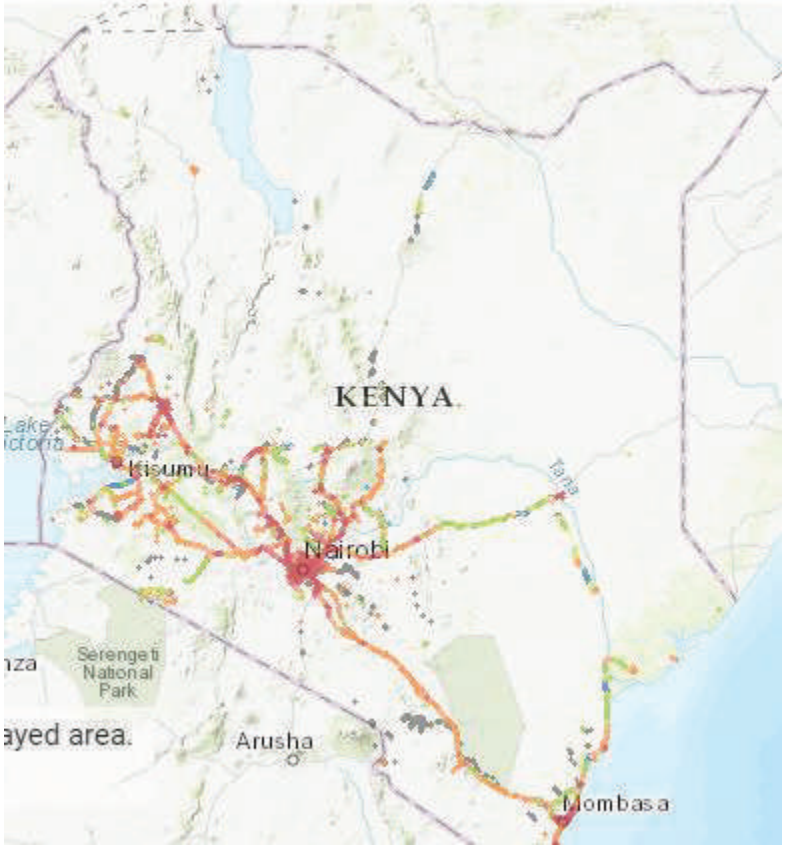

Figure 7 2G, 3G and 4G Coverage in Kenya

As opposed to apps, USSD-run applications are easily accessible by people with both smartphones and non-smartphones and are therefore able reach a wider audience. Several African innovators have realized the economic potential of USSD[30] and used the platform to develop services:

- Safaricom's Little Cab targeted non-smartphone users by introducing a USSD option where users can book a taxi without using data.

[30] Kariuki, H., (2018) Forget Apps, USSD Applications are Key to Unlocking the Underserved African Market

- M-farm is a USSD application that allows farmers to send text messages requesting information about crop prices. It also connects with buyers and farmers around you to sell your produce.
- Eneza Education is an m-education application that uses USSD to deliver content to its students across African countries.
- SGR-Kenya also leverages USSD for consumers to book and purchase their train tickets through its integrated mobile money transfer system (M-pesa).
- M-Louma, founded by Aboubacar Sindy Sonko in 2012, is a marketplace for farming products using Orange's USSD Store in Senegal.
- Refunite, is using USSD to connect refugees back to their families in war torn areas.

6.2.2 USSD in alert notification

To summarize the above, all USSD services are accessed by dialling numbers between * and #. The handset recognizes those numbers and forwards the request to the USSD server instead of initializing a normal call or a data call[31]. A USSD message can be up to 182 alphanumeric characters in length. USSD would be used in an emergency to gather more information about people in need.

Benefits of USSD

- Works on every handset
- Real time link, no delayed messaging
- Easiest method of obtaining structured requests for help
- Requests can easily be converted to reports
- Can be easily embedded with location data of the sender[32]

6.2.3 Recommendation

As highlighted in our claims notification and verification section, we propose an incidence notification platform supported on USSD. Even though statistics indicate that Internet connectivity on mobile-phones in Kenya is Kes 42 Million, stable internet network coverage is limited to the major towns and cities in Kenya. Use of USSD will not only be indifferent with regards to the type of phone being used, but the extent of 4G and 3G coverage will not be essential for communication.

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[31] HEAL, Apia, Samoa (2012) Collaborative Tools for Emergency Response in a National Disaster

[32] With regards to LEMP (Low End Mobile Phones) as they have no internet capability the communication on location can be built via the USSD text channel. Based on this text channel two location determination methods are designed. The first method allows the user to input their location using local names. And the second method is using the carrier billing records. The billing records are used in order to identify the geolocation of base station transceiver (BTS) with which the mobile phone is communicating. Additionally, as it may not be graphically possible to display spatial information, public landmarks related to the areas can be displayed in drop-down form.

Additionally, USSD can be embedded with location information from the sender; such information can be relayed promptly on a block-chain enabled database as highlighted in the section above to various relevant stakeholders. As USSD is not an 'app' per definition, costs of development and roll-out will also be relatively less compared to development of a conventional application.

6.3 Use of Drones

6.3.1 Introduction

Drones are widely considered to be one of the most exciting multipurpose innovations of the century. Drones are remote controlled aircraft with no human pilot on-board. There are many uses for drones in tons of different industries, but drones can especially aid the efficiency of work in the agriculture industry[33]. In recent years, savvy farmers have begun to use drones to better manage their crops and livestock. With their bird's eye view and advanced sensors, a drone can gather data on 500 to 1,000 acres in less than a day, making it so farmers can measure plant health, forecast yield, and gather other data critical the management of their farm[34].

6.3.2 Drones in Insurance

Perhaps one of the most exciting things about using drones in the insurance industry is that they can impact every aspect of the insurance value chain. For instance:

Pre-claim

- Pricing accuracy and risk reduction – Assessing a site from the sky allow for a more accurate risk profile, which in-turn impacts the costs involved.
- Monitoring natural disasters – Drones can also be deployed to safely and quickly monitor areas under threat from natural disasters, such as fire, drought, flood, and earthquakes.

Post-claim

- Site inspection – Using drones offers a faster, safer, and more cost-effective way to undertake site inspections and measure damaged areas – especially if doing so from the ground compromises the safety of the inspection team.
- Claims decisions – The decision-making process is made a great deal easier thanks to precise and high-quality imagery.
- Fraud prevention – drones can help counter these claims by capturing accurate information in a timely manner[35].

[33] http://cropinsurancesolutions.com/drones-bringing-tech-field/
[34] How crop insurers are using drones to improve the claims cycle (2019) https://www.precisionhawk.com/blog/how-crop-insurers-are-using-drones-to-improve-the-claims-cycle
[35] https://technorely.com/blog/drones-in-agri-insurance-industry/

6.3.3 The Knock-On Effects

The introduction of drones into the insurance industry will also impact three important areas: risk management; claims management; and direct and indirect employment.

Risk management

Drones will help risk management become more proactive and predictive. They can help identify and quantify risks and can do so faster and more safely. This approach will also keep field workers from exposure to radiation or toxic gases, and will spare them from working at height, or in challenging conditions. Ultimately, using drones for aerial surveying could help lower work-related injuries and fatalities.

Claims management

Likewise, the claims management process will be greatly improved for every stakeholder. The claims adjuster will be able to process more claims thanks to express access to more accurate information, while the customer will have confidence that their claim will be addressed quickly. And the insurer will see significant savings thanks to an altogether more efficient workflow.

Direct and indirect employment

While the improved and efficient workflow mentioned above might result in fewer jobs within the insurance industry, the fact is more specialist roles will be created. Drones will need to be manufactured, maintained, and piloted. And the data the drones collect needs to be processed, stored, and analysed. By implementing drone technology, the insurance industry could, directly and indirectly, create new jobs[36].

6.3.4 Use in Kenya

Over 1,500 farmers across Meru will be aided to identify plant diseases and other conditions afflicting their farms using the flying sensors, which are a combination of a drone and a camera. The project is being implemented by the Water, Research and Resource Centre (Warrec) of Jomo Kenyatta University of Agriculture and Technology and Third Eye, in a project funded by SNV-Kenya, a Dutch development organisation. Warrec Director Bancy Mati said the project uses flying sensors to detect crop diseases and other stresses in farms, thus allowing agricultural officers and farmers to make timely interventions. The infrared-enabled camera takes and produces images of different colours that indicate various types of crop diseases or plant stress. "It serves as an early warning system. The flying sensor can identify what is ailing crops and the results are interpreted

[36] https://technorely.com/blog/drones-in-agri-insurance-industry/

for farmers. Farmers are only paying Sh150 for the service and as a university that works to support agriculture, we are happy with the results.[37]

6.3.5 Recommendation

Use of drones in HWC incidences will provide an innovative win-win solution for all stakeholders involved, namely:

i. **Accurate claim assessment:** Insurers will be able to objectively assess damages to crops over a large area more efficiently. Not only will this make the claims assessment process timely, but efficiency will invariably lead to cost savings and in time, crop damage premiums could potentially become cheaper.

ii. **Security:** For instances where areas may be still dangerous after an incidence, use of drones can safeguard the security of the assessors during the entirety of the assessment. What this also means is, with infrared enabled drone cameras, assessment can also be done at night or during the evening.

iii. **Accessibility:** As this scheme seeks national coverage, Insurers are cognizant that some areas may not be easily accessible either due to the terrain or elevation. Use of drones will enable assessment to take place regardless of the area's infrastructure and logistical challenges.

[37] https://agroinsurance.com/en/kenya-farmers-turn-to-drone-to-fight-crop-diseases/

7 Proposed amendments to the WCMA Act 2013

i. Provide an accelerated benefit for death to cover funeral expenses at a level of KES 50,000
ii. Adopt the continental scale for permanent total disability injuries that provides varied benefits based on the level of injury. The continental scale is a globally accepted scale for injuries
iii. Introduce medical expenses for injuries up to a limit of KES 150,000
iv. Crop damage will be paid for any crop up to a maximum limit of KES 100,000 per event or the real loss depending on which one is less
v. The following livestock will be covered: cattle, goats, sheep, camels and donkeys using the tropical livestock unit (TLU). The proposed TLU will be KES 30,000 which is equivalent to the value of a cattle as shown below:

Livestock	TLU	Value (KES)
Cattle	1	30,000
Sheep/Goat	0.15	4,500
Donkey	0.5	15,000
Camel	1.4	42,000

Table 7 Tropical Livestock Unit (TLU) valuation

vi. The current act provides for two separate schedules for wildlife that cause human wildlife conflict. The two lists are divided for death/injury and crop/livestock/property damage. The Proposal is to have one list with all wildlife covered against all risks.
vii. Provide for an appeal process
viii. Include a general commercial liability cover that will provide extra protection to the government in case victims launch court cases against the government if they are not satisfied with the limits provided in the proposed scheme
ix. The claims and compensation functions of CWCC to be amended--- amend or review section 19(i)(a)
x. Give effect to WCMA, 2013 Section 24(b) on the consortium through PPP with insurance industry
xi. Review/ amend Section (25) to be consistent with the proposed policy
xii. The functions of local administrators especially chiefs and sub-chiefs in insurance claim process for HWC.
xiii. Notification and verification process for insurance claims currently done by KWS will need to be changed to relieve them and task the functions on insurance consortium.
xiv. Inclusion of other species in the schedule.

xv. There is need to amend the benefits awarded for crop damage, livestock predation and depredation to defined benefits.

8 Conclusions and Recommendations

i. There is need for the adoption of technology on the claims process. The scheme should consider leveraging on existing technologies to improve on efficiency of the entire process e.g. USSD for reporting, blockchain to coordinate the various entities, drones for verification etc.

ii. The scheme should consider the adoption of mobile money payment systems for claim payouts.

iii. There is need for public education and awareness on the scheme and mitigation measures

   a. Following our proposal on using chiefs and sub chiefs in the local administration level, there is a need for training of the said administration unit on claims notification.

iv. Considering the proposed product and claims process, there may be need for amendment to the Act.

v. Mitigation strategies should be encouraged. For livestock, herders should be encouraged to install predator proof bomas and child herding should be discouraged.

vi. For the scheme to be successful, there will be a multisectoral approach with partnerships of both state and non-state actors.

vii. Provide emergency medical response services including air and road ambulance evacuation and medical rescues. This will also include inclusion of anti-venom medication in snake hotspots.

viii. Public education will need to be conducted for the product consumers to understand it. A good awareness campaign will go a long way in improving the reception and ownership of the scheme.

ix. A pilot should be conducted in a few hotspots to test the efficiency of the product before the official national roll out of the scheme. This will give room for identification of loopholes and making of necessary adjustments.

could with benefits as shown below: **SECTION V – COMMERCIAL GENERAL LIABILITY**	
COVER:	Indemnity of legal liability to the relevant agencies arising out of Wildlife activities. cover the costs of liability claims made against relevant agencies form third party personal injury or death, third party property damage including legal costs...

SUBJECT MATTER COVERED:	Legal liability as a result of activities of the relevant agencies in connection with Wildlife activities in the Republic of Kenya.	
LIMITS OF LIABILITY:	**Per any one claim/claimant**	**KSHS. 100,000,000**
	Incidents per year	**20**
	Annual Aggregate Limit (AAL)	**KSHS. 2,000,000,000**
BASIS OF VALUATION:	Legal awards including costs	

Table 8 Proposed benefits for commercial general liability

References

Mukeka, J. M., Ogutu, J. O., Kanga, E. & Røskaft, E., 2019. Trends in compensation for human-wildlife conflict losses in Kenya. *International Journal of Biodiversity and Conservation,* pp. 90-113.

Wilson-Holt, O. & Steele, P., 2019. Human Wildlife Conflict and Insurance: Can insurance reduce the costs of living with wildlife?. *IIED discussion paper,* pp. 3-24.

Madhusudan MD (2003). Living amidst large wildlife: livestock and crop depredation by large mammals in the interior villages of Bhadra Tiger Reserve, South India. Environmental Management 31(4):0466-0475

ANNEXES

ANNEX 1: Compensation claim form for death and Injury

CONSOLATION CLAIM FORM FOR PERSONS INJURED/KILLED BY WILDLIFE

(TO BE FILLED IN TRIPLICATE)

CLAIMANT DETAILS

COUNTY:	LOCATION:	DATE ISSUED:

PART I DEATH

1. _____ _____ _____
   (FIRST) *(MIDDLE)* *(LAST)*
2. ID No. _____
3. ADDRESS_____POST CODE_____
4. TEL NO._____
5. SEX
   ☐ Male ☐ FEMALE
6. AGE_____
7. **A)** NAME OF NEXT OF KIN:

NAME_____

ID NO: _____ SIGNATURE.....

8. ADDRESS_____POST CODE_____
9. TEL NO./_____EMAIL_____

10. RELATIONSHIP TO DECEASED _____

(*Attach copy of identification card and for Minors attach birth notification or birth certificate*)

PART II INJURY

1. NAME OF INJURED:

_____ _____ _____
(FIRST) *(MIDDLE)* *(LAST)*

2. ID NO _____

3. ADDRESS_____POST CODE_____

4. EMAIL ADDRESS (OPTIONAL)----------

5. TELEPHONE NO (COMPULSORY)----------

6. SEX

☑ Male ☐ FEMALE

7. AGE_____

8. OCCUPATION:

9. NAME OF NEXT OF KIN:

_____ _____ _____

10. ID No. _____TELEPHONE NO._____

11. RELATIONSHIP TO INJURED_____

12. SIGNATURE: _____

(*Attach copy of identification card and for Minors attach birth notification or birth certificate*)

PART III PLACE OF RESIDENCE (TO BE FILLED BY THE AREA CHIEF/ASSISTANT CHIEF)

1. ADDRESS_____ POST CODE_____
2. CHIEF/ASSISTANT CHIEF:

   NAME:_____TEL (Compulsory):

   DATE: SIGNATURE:

   STAMP:
3. SUB-LOCATION: _____
4. LOCATION: _____
5. DIVISION/SUB-COUNTY……

PART IV PARTICULARS OF DEATH / INJURY (To be filled by Chief/Assistant Chief/CVO)

1. PLACE OF DEATH/ INJURY **(Indicate if inside or outside PA)**_____ _____
   (Location) *(GPS coordinates*
2. DATE OF INCIDENT_____ TIME OF INCIDENT _____

SHORT DESCRIPTION OF WHAT HAPPENED

_____

_____

_____

_____

3. ANIMAL RESPONSIBLE_____

PART V: COMMENTS BY POLICE, KWS WARDEN AND MEDICAL DOCTOR

1. **POLICE STATION/ POST_____**

   COMMENT FROM O.C.S/ SUB-COUNTY POLICE COMMANDER

   REFERENCE/OB NO……

_____

_____

_____

NAME_____

DESIGNATION_____

P.NO. (Compulsory):

TEL. NO. (Compulsory):

SIGNATURE& STAMP_____DATE_____

1. **MEDICAL OFFICER OF HEALTH**

Patient Name	
Describe fully the cause and circumstances of the injury as stated to you	
Are the appearances of the injuries consistent therewith and do you believe they were caused as stated	
Nature of injuries please give details particulars	
On what date did the patient consult you in relation to this accident	
Is the patient on your advice? a) Confined to bed b) Confined to house c) Able to go out doors	a) ……From ……..To……. b) ……From ……..To……. c) ……From ……..To ……..
Is the patient in your opinion unable to give any attention to his occupation a)Date of Commencement of Total Disability b) Probable duration from the date c) Permanent Disability Percentage	a) Percentage of disability b) c) Percentage of disability

NAME_____

DESIGNATION_____

P.NO. (Compulsory):

TEL. NO. (Compulsory):

SIGNATURE & STAMP_____DATE_____

2. **COMMENTS BY KWS WARDEN**

COMMENT FROM WARDEN

KWS OB NO……

_____

_____

_____

_____

NAME_____

DESIGNATION_____

EST. NO. (Compulsory)

TEL. NO. (Compulsory)

SIGNATURE & STAMP_____**DATE**_____

3. COMMENTS BY COUNTY INSURANCE REPRESENTATIVE

_____

_____

_____

NAME_____

DESIGNATION_____

TEL. NO. (Compulsory)

SIGNATURE & STAMP_____**DATE**_____

PART VII CLAIM AWARD

1. APPROVED FOR CONSOLATION

_____

2. Amount in figures_____

Amount in words_____

3. a) DEFERED

Reasons_____

_____

b) REJECTED

Reasons_____

_____

4. COUNTY WARDEN: _____ NAME…… SIGNATURE……

5. COUNCE INSURANCE REPRESENTATIVE _____ NAME……

SIGNATURE……

ANNEX 2: Compensation claim form for crop damage

COMPENSATION CLAIM FORM
CROP DESTROYED BY WILDLIFE
(TO BE FILLED IN TRIP)

STATION: S.NO. DATE ISSUED:

CLAIMANT DETAILS

11. NAME OF CLAIMANT: _____ _____ _____
    (FIRST) *(MIDDLE)* *(LAST)*
12. ID/N0 _____
13. ADDRESS_____POST CODE_____
14. TEL NO._____
15. SEX
    ☐ Male ☐ FEMALE
16. AGE_____
17. NAME OF LOCATION:
18. NAME SUB-LOCATION:
19. AREA/VILLAGE WHERE INCIDENT HAPPENED:
20. GPS LOCATION:
21. WHAT MEASURES DID YOU TAKE TO MITIGATE THE LOSS

PART II CROP DESTRUCTION

1. TYPE OF CROP: _____
2. ANIMAL RESPONSIBLE_____
3. APPROXIMATE ACREAGE DESTROYED_____
4. STAGE OF GROWTH_____

Time of crop property destruction: _____

Morning	Afternoon	Evening	Night
(06:00 - 11:59)	(12:00 - 16:59)	(17:00 - 19:59)	(20:00 - 05:59)

Time of verification:	Name of Claimant: Signature of Claimant: Name of Community Verification Officer: _____ Signature of Verification Officer: _____ Witness Name:…….. Witness Signature:…… Representative of DCWS: Signature:
Photo ID number:	

ANNEX 3: Compensation claim form for Livestock predation and depredation

CONSOLATION CLAIM FORM
FOR LIVESTOCK KILLED BY WILDLIFE
(TO BE FILLED IN TRIP)

STATION: S.NO. DATE ISSUED:

CLAIMANT DETAILS

22. NAME OF CLAIMANT: _____ _____ _____
(FIRST) (MIDDLE) (LAST)
23. ID/N0 _____
24. ADDRESS_____POST CODE_____
25. TEL NO._____
26. SEX
☐ Male ☐ FEMALE
27. AGE_____
28. NAME OF LOCATION:
29. NAME SUB-LOCATION:
30. AREA/VILLAGE WHERE INCIDENT HAPPENED:
31. GPS LOCATION:
32. WHAT MEASURES DID YOU TAKE TO MITIGATE THE LOSS

PART II LIVESTOCK PREDATION

1. LIVESTOCK TYPE & NUMBER :

	Livestock Type				
	Cattle	**Sheep**	**Goat**	**Donkey**	**Camel**
Total No. affected					
No. Killed					
No. Injured					
Sex					
Age					

WILDLIFE RESPONSIBLE:_____

2. DESCRIPTION OF THE INCIDENCE

Where did the attacked happen:		
Inside boma	Within 200 meters from boma	More than 200 meters from boma

Did the predator scare the livestock from INSIDE the boma: YES NO
Did the predator enter the boma: YES NO

Is the boma:	
Permanent boma	
Temporary boma	

Does the boma have:	Tick
LED Simba Lights	
Chain-link predator proof fencing	

Did anyone see the predators:		Tracks present:
Number of carcasses:	Number of legs:	Number of heads:
Number of herders:	Age of herders:	Sex of herders:

Time of kill: _____	
Morning (06:00 - 11:59) Afternoon (12:00 - 16:59) Evening (17:00 - 19:59) Night (20:00 - 05:59)	
Time of verification:	Name of Claimant:
Photo ID number:	Signature of Claimant: Name of Community Verification Officer: _____ Signature of Verification Officer: _____ Witness Name:…….. Witness Signature:…… Representative of DCWS: Signature:

ANNEX 4: Compensation claim form for property damage

COMPENSATION CLAIM FORM
PROPERTY DESTROYED BY WILDLIFE
(TO BE FILLED IN TRIP)

STATION: S.NO. DATE ISSUED:

CLAIMANT DETAILS

33. NAME OF CLAIMANT: _____ _____ _____
(FIRST) *(MIDDLE)* *(LAST)*
34. ID/N0 _____
35. ADDRESS_____POST CODE_____
36. TEL NO._____
37. SEX
☐ Male ☐ FEMALE
38. AGE_____
39. NAME OF LOCATION:
40. NAME SUB-LOCATION:
41. AREA/VILLAGE WHERE INCIDENT HAPPENED:
42. GPS LOCATION:
43. WHAT MEASURES DID YOU TAKE TO MITIGATE THE LOSS

PART II PROPERTY DESTRUCTION

5. TYPE OF PROPERTY: _____
6. ANIMAL RESPONSIBLE_____
7. ESTIMATE REPLACEMENT VALUE OF PROPERTY DESTROYED_____

Time of property destruction: _____			
Morning (06:00 - 11:59)	Afternoon (12:00 - 16:59)	Evening (17:00 - 19:59)	Night (20:00 - 05:59)
Time of verification:	Name of Claimant:		

Photo ID number:	Signature of Claimant: Name of Community Verification Officer: _____ Signature of Verification Officer: _____ Witness Name:…….. Witness Signature:…… Representative of DCWS: Signature:

ANNEX 5: Policy Wordings

HWCCS INSURANCE POLICY WORDING-

Policy Number: _____

Period of Insurance: From: _____ to _____

(Both dates inclusive) and any subsequent period for which the Insured shall pay, and the Company shall accept a renewal premium.

IMPORTANT NOTES

1. Please read this Policy document carefully. If you find that the Policy does not meet your requirements, please contact us or write to us and return the document to the Company within 30 days with your suggestions for necessary consideration.
2. Any material change affecting the risk insured by this Policy must be advised to the Company immediately.
3. In the event of any Injury/death to a person, loss or damage to property or crop and Livestock predation or depredation, immediate notice should be given to the Company within 72 hour and **14 days for documentation**. Prompt reporting of a loss or incident is important for preserving evidence that may be critical in determining admissibility of the claim and amount payable. You shall comply with all the conditions of the Policy. In the event of a claim, you shall provide all facts, information and supporting documentary evidence to enable the Company to process your claim.
4. Should you be dissatisfied with the settlement of a claim, you may refer the matter to the Insurance Regulatory Authority who will assist in resolving your complaint with the Company.
5. This Policy is not transferable.

THE INSURANCE AGREEMENT

Whereas the Insured described in the Schedule has by a proposal and declaration written application or statement which shall be the basis of this contract has applied to _____Insurance Company (herein after called the ***Company***) and in consideration of payment of premium for the insurance herein contained;

NOW THIS POLICY WITNESSES that the Company has, subject to the terms, exceptions and conditions of this policy agreed to indemnify the Insured or third party for loss or damage by wildlife outside the protected Wildlife area against:

a) **Personal Bodily Injury or Death**
b) **Property damage;**
c) **Crop damage; and**
d) **Livestock predation and depredation (Death);**

all during the Period of Insurance and any other further period that the Company may accept to renew this Policy.

The liability of the Company shall in no case exceed the limits expressed in the Schedule or such amount as may be agreed between the Company and the insured by endorsement.

DEFINITIONS

MATERIAL FACTS

Every information which can influence the Company's decision in accepting the risk and determining the terms.

INSURED PERIOD

means with respect to the Policy, the period commencing with the Effective Date of the Policy and terminating with the Expiration Date of the Policy as stated in the Policy Schedule.

POLICY SCHEDULE

means the Policy Schedule attached to and forming part of the Policy.

ACCIDENT

A sudden, violent and unexpected visible external event occurring during the period the policy is in force, caused by Human Wildlife Conflict, and resulting in death of or bodily injury to Person, Livestock predation and/or depredation, Property and/or Crop damage outside Protected Wildlife Area.

WILDLIFE

Wildlife as defined in the Wildlife Conservation and Management Act 2013, Third Schedule.

LIVESTOCK

Farm animals regarded as an asset, and for the purpose of this insurance policy include Cattle, Camel, Goat, Sheep and Donkey.

LIVESTOCK PREDATION

The killing of Livestock by Wildlife for the purpose of eating.

LIVESTOCK DEPREDATION

An act of killing Livestock by Wildlife other than for the purpose of eating.

PROTECTED AREA

Areas as defined in the Wildlife Conservation and Management Act 2013.

INJURY

Bodily injury directly caused by accidental, violent and external means as a result of an interaction with Wildlife, and which shall result in death, disablement or the incurring of medical expenses to person;

DEATH

The death of the Person occurring within 12 calendar months resulting directly from wildlife as defined in the Third Schedule of the WCMA- 2013.

PERMANENT TOTAL DISABLEMENT (PTD)

Total disability that manifests within 12 calendar months of the date of the HWC incident, that renders the person incapable of attending to their usual business or occupation or engaging in any occupation or employment for compensation or profit for which he/she is reasonably qualified by reason of his education, training or experience, or if he has no business or occupation from attending to any duties which he/she would normally carry out in his/her daily life, provided such disability is total, continuous and permanent.

PAIN AND SUFFERING (P & S)

This is disability that renders the person entirely incapable of attending to his/her daily business or his/her usual occupation or if he/she has no business or occupation, from attending to any duties which he would normally be carried out by him in his daily life for a period of time up to a maximum of 12 months.

MEDICAL EXPENSES

The actual cost of medical, surgical, hospital and related expenses necessarily and reasonably incurred by a person for treatment of his/her injuries resulting from an

injury occasioned by Wildlife attack as defined in this policy, subject to the limits as specified in the schedule.

FUNERAL EXPENSES

from an injury occasioned by Wildlife attack as defined in this policy, subject to the limits as specified in the schedule.

PROPERTIES, BUILDINGS AND OUT STRUCTURES

The residential premises including but not limited to fixtures and fittings and the following, in so far as they form part of the property; walls, roofs, doors & gates, fences, water tanks, water pipes, water pumps, fish ponds, granaries/grain stores, Shallow wells, Solar Panels, drip irrigation pipes, cattle bomas.

STOCK

Harvested crops kept in grain stores

CROP

Growing crop of all nature.

GENERAL EXCLUSION

1. In no case whatever shall the Company be liable for any loss or damage after the expiration of twelve months from the happening of the loss or damage unless the claim is the subject of pending action or arbitration.
4. Unless otherwise expressly stated in this Policy this Insurance does not cover:
    i. Water damage occasioned by or through the leaking of any roof(s) unless such roof(s) is damaged by the Accident;
    ii. Consequential loss of any kind whatsoever;

iii. Loss or damage to any building, or the contents thereof, if on the happening of any such loss or damage the building was already in a damaged, defective, fallen or displaced conditions as regards foundations, walls, ceilings, guttering's, roofs, doors, windows or roof of lights;

iv. Loss or damage due to ordinary wear and tear, gradual deterioration or normal exposure to the weather;

v. Loss or damage caused by subsidence or landslip;

vi. Loss or damage occasioned by or through or in consequence of the action or order of any Government or Public Authority;

5. This insurance does not cover any loss or damage occasioned by or through or in consequence, directly or indirectly, of any of the following occurrences, namely:

   a) Earthquake, volcanic eruption or other convulsion of nature.

   b) Typhoon, hurricane tornado, cyclone or other atmospheric disturbance.

   c) War, Civil War and Political Risks

      i. War, invasion, act of foreign enemy, hostilities or warlike operations (whether war be declared or not), civil war, labor disturbance, lock-out, riot or strike.

      ii. Abandonment and/or permanent or temporary dispossession resulting from detention, confiscation, seizure, restraint, commandeering, nationalization, appropriation, destruction or requisition by order of any government de jure or de facto or by any public authority.

      iii. Mutiny, civil commotion, military rising, insurrection, rebellion, revolution, military or usurped power, martial law or state of siege or any of the events or causes which determine the proclamation or maintenance of martial law or state of siege.

iv. The act of any lawfully established authority in controlling, preventing, suppressing or in any other way dealing with any occurrence referred to in clauses (i), (ii), and (iii).

v. Plundering, looting, war pillage in connection with civil commotion.

vi. Any act of terrorism, regardless of any other cause contributing concurrently or in any other sequence to the loss, damage or expense.

For the purpose of this exclusion, terrorism means an act of violence or force or the threat thereof whether as an act harmful to human life or not, by any person or group of persons, whether acting alone or on behalf or in connection with any organization or government or any other person or body of persons, committed for political, religious, personal, ethnic or ideological reasons or purposes including any act committed with the intention to influence any government and/or for the purpose of inspiring fear in the public or any section thereof.

In any action suit or other proceedings where the Company alleges that by reason of this definition a loss, damage or expense is not covered by the Policy, the burden of proving that such loss, damage or expense is covered shall be upon the Insured/claimant.

2. This insurance does not cover loss or damage directly or indirectly caused by or arising from or in consequence of or contributed to by ionizing radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel.
3. Acts of terrorism committed by a person or persons acting on behalf of or in connection with any organization. Terrorism shall be deemed to mean the use of violence for political ends and for the purposes of putting the public in fear;
4. Loss of earnings, loss by delay, loss of market or other consequential or indirect damage of any kind or description whatsoever.
5. Loss or damage resulting from total or partial cessation of work or the retarding or interruption or cessation of any process or operation.

6. Loss or damage occasioned by permanent or temporary dispossession of any property resulting from the unlawful occupation by any person of such property.
7. Losses due to Looting, Plundering and Pillage of the property covered.

The Insurers shall further not be liable for loss or damage:

a) If the Insured and/or claimant fails or refuses to give all possible assistance in the investigation of any claim or fails to disclose any relevant information or otherwise makes a false or incorrect statement or declaration concerned herewith

LIMIT OF LIABILITY

The Company maximum limit of liability in any case shall not be more that the limit of liability as specified in the policy schedule per each Sections.

SECTION – I

PERSONAL BODILY INJURY OR DEATH

EVENTS COVERED Under this Section

A. Death: death as a result of wildlife incident.

B. Permanent Disablement:

(i) Injury specified in the Continental Scale of Benefit; or

(ii) Injury not specified in the Continental Scale of Benefit where the injury is not specified, the Company will adopt a percentage of disablement which is consistent with the provisions of the continental scale of benefit;

C. Pain and Suffering

D. Medical, Pharmaceutical and Hospital Expenses;

E. Funeral Expenses.

The claimant shall submit to medical examination at the expense of the Company as may be required in connection with any claim.

Provided always that:

1) Benefits arising from events "**A**", "**B**", "**C**" or "**D**" above are only payable where the death or the disablement occurs within a period of 12 calendar months of the accident;
2) If more than one of the disabilities as defined under event "**B**" arises in any one accident the appropriate percentages will be added together but the amount payable under this Policy shall not exceed in total **100%** of the maximum benefits stated in the Schedule;
3) Any sum payable under event "**A**" shall be reduced by the total of any payments that may have been made under benefit "**B**";
4) Payments under event "**D**" may be withheld until the total amounts payable to the insured/claimant has been proved and determined to the Company's satisfaction;
5) Payment shall not be made under event "**C**" for more than 52 weeks from the date of the accident.,

Basis Of Settlement

Subject to the limit of liability as specified in the policy schedule:

- **Death**: based on Kes. 3,000,000 as a capital benefit for the person killed by Wildlife as a result of an Incident/Accident.
- **Injury/Medical Expense**: the actual medical, pharmaceutical and hospital expenses incurred by the person as a result of an Accident;
- **Permanent Total Disablement**: subject to the continental scale as attached in **Appendix -1**

- **Pain and Suffering**: of **Kes.13,500pm.-** but minimum one month and full payment for subsequent month should the disability spill even on day The maximum payment is limited to 12 Months.
- Funeral Expenses: of Kshs. 50,000 - payable following death for the body disposal expenses.

CLAIMS DOCUMENTE REQUIRE:

- Police Abstract
- Claim form
- Post-mortem report
- Medical bills
- Medical Certificate
- Witness statement(s)
- Claimant statement

EXCEPTIONS TO SECTION – I (Personal injury/death)

This Policy does not cover injury, death or disablement caused by, contributed to by or arising from:

1. Accident happening in Protected Wildlife Area;
2. Injury or death as a result of an incident other than Human Wildlife Conflict;
3. Intentional self-inflicted injury;
4. Suicide or any attempt threat;
5. Own criminal act, dueling, or fighting;
6. Bacterial, viral, fungal infection or any other infection as a result of contact or incident with wildlife.
7. Any pre-existing and/or recurring illness, condition, physical defect or mental infirmity;
8. Claims and/or medical costs relating to the Person willful exposed to the Wildlife peril;

9. Suffering from any sickness, disease or infirmity not resulting from accidental bodily injury;

In the event of any claim hereunder the insured/claimant shall when so require by the Company prove that the claim arose independently of and was in no way connected with or occasioned by or contributed to by or traceable to any of the said occurrence or any consequence thereof and in default of such proof the Company shall not be liable to make any payment in respect of such a claim.

SECTION – II

PROPERTY DAMAGE

Events Covered Under This Section

Under this section loss or damage to building, water tanks, water pumps, pipes, granary and/or stock are covered as a result of wildlife attack

Basis Of Settlement

- Buildings and Out Structures: The replacement value of the property lost or damaged as a result of an Accident;
- Stock: The market value of the stock damage or destroyed.

The Company may at its option make payment, replace, reinstate or repair the property damaged or destroyed.

CLAIMS DOCUMENTE REQUIRE:

- Police Abstract
- Claim form
- Estimate of damage
- Photos of damage
- Witness statement(s)
- Claimant statement

EXCEPTIONS TO SECTION – II (Property Damage)

1. This insurance does not cover:

   d) Loss by theft during or after the occurrence as a result of incidence arising out of Wildlife attack.
   e) Loss or damage to property occasioned by its own fermentation, natural heating or spontaneous combustion
   f) Loss or damage occasioned by or through or in consequence of the burning of property by order of any public authority.

6. Unless otherwise expressly stated in the Policy this insurance does not cover:

   a. Bullion or unset precious stones;
   b. Any curios or work of art;
   c. Manuscripts, plans, drawings or designs, patterns, models or moulds.
   d. Securities, obligations or documents of any kind, stamps, coined or paper money, cheques, books of account or other business books, computer system's records.
   e. Coal, against loss or damage occasioned by its own spontaneous combustion.
   f. Explosives.

7. This insurance does not cover any loss or damage to property which, at the time of the happening of such loss or damage, is insured by or would, but for the existence of this Policy, be insured by any Marine Policy or Policies, except in respect of any excess beyond the amount which would have been payable under the Marine Policy or Policies had this insurance not been effected.

EXTENSIVE CLAUSES

1. Cost of Re-Erection

The insurance by this Policy extends to include the cost of re-erecting, fitting and fixing machinery and plant in consequence of destruction or damage by any of the perils hereby insured against, provided that the total amount recoverable under any item of the Policy shall not exceed the sum insured or limits thereby.

2. **Alterations and Repairs**

   Workmen are allowed in or about any premises herein referred to carrying out alterations and repairs without prejudice to the terms of this insurance.

3. **Cost of Demolition (Applicable to buildings only)**

   The insurance on a Building under any item of this Policy is declared to include costs, necessarily incurred by the claimant, in respect of the demolition of Buildings and/or the removal of debris from the site following destruction of or damage to the property insured by wildlife attack, provided that the total amount recoverable under any item of the Policy shall not exceed the replacement cost.

4. **Removal of Stock Debris**

   It is understood that the insurance by this Policy extends to include costs and expenses necessarily incurred by the Insured/claimant with the consent of the Company in:

   a) removing debris
   b) dismantling and/or demolishing
   c) shoring up or propping

   of the portion or portions of the property insured by the said items destroyed or damaged by wildlife or by any other peril hereby insured against.

   The liability of the Company under this clause and the Policy shall in no case exceed the limit of liability.

SECTION - III

CROP DAMAGE

Events Covered Under This Section

Under this section loss or damage to unharvested growing crop as a result of an loss or damage / incident Accident caused by wild animals/ life.

Basis Of Settlement

- Input cost with **Kes15,000 per acre**
- Maximum payment Kes. 150,000

CLAIMS DOCUMENTE REQUIRE:

- Police Abstract
- Claim form
- Photos of damaged crop
- Witness statement(s)
- Claimant statement

EXCEPTIONS TO SECTION – III (Crop Damage)

This insurance does not cover:

n) Storm, tempest

o) Rain, Hail or Snow provided the building in respect of which the claim is made or containing the property in respect of which a claim is made is so damaged by any of the perils specified in (A) above as to admit water to the interior of the said building.

p) Flood

q) Aircraft and other aerial devices or articles dropped therefrom

r) Impact with any building containing the crop by any road vehicle, horse or cattle

s) Subterranean fire

t) Accident due to Wildlife other than those indicated in the list of Wildlife as per Third schedule of WCMA – 2013.
u) Uncontrollable Pests and Diseases, including uncontrollable birds.
v) Any Crop which has been harvested prior to inspection by the Assessor/ Community Verification.
w) Infestation, vermin, pests, animals, birds, insects and other natural enemies or disease of every description whether evident in the crop before or after an insured event.
x) Loss or damage to crop occasioned by its own fermentation, natural heating or spontaneous combustion.
y) The burning of the crop by order of any public authority, or by subterranean fire.

SECTION – IV

LIVESTOCK PREDATION AND DEPREDATION

Events Covered Under This Section

This section covers Livestock, namely Cattle, Camel, Goat, Sheep and Donkey:

- Predation;
- Depredation;
- Injury as a result of wild animal as per third schedule of WCMA 2013 leading to death on grounds of necessity..

Basis Of Settlement

The bases of settlement shall be **Tropical Livestock Unit (TLU).** For the purpose of computing the claimable amount, the Livestock types shall be transformed into a standard Tropical Livestock Unit (TLU) as follow:

- **1TLU = Kes30,000. -**
    - 1 Cattle = 1 TLU
    - 1 Camel = 1.4 TLU
    - 1 Donkey = 0.5 TLU
    - 1 goat/sheep = 0.15 TLU

CLAIMS DOCUMENTE REQUIRE:

- Claim form
- Photos of damaged crop
- Witness statement(s)
- Claimant statement

EXCEPTIONS TO SECTION – IV (Livestock predation and depredation)

This insurance does not cover loss directly or indirectly caused by or arising from or in consequence of attributed to be:

1. Slaughter of animal (s) without the consent of the Community Verification officer or witness.
2. Destruction in compliance with any legal requirement of Government or local or public authority.
3. A Livestock becoming unfit or incapable of fulfilling the duties for which it is kept or employed.
4. Any disease arising out of external parasites unless adequate dipping and /or spraying are carried out regularly as recommended by appropriate Government authorities.
5. Theft.
6. All Illness, disease or epidemics contracted.
7. Veterinary expenses.

POLICY SCHEDULE

SECTION I - HUMAN PERSONAL - INJURY OR DEATH		
COVER:	Personal Injury/Death and Medical Expense as a result of an Accident as defined in the Policy document	
SUBJECT MATTER COVERED:	Kenya Citizen and Residence in Kenya outside protected Wildlife areas	
		Maximum Limit
LIMITS OF LIABILITY:	**Death per Person**	**KES 3,000,000**
	PTD	**Per Continental Scale**
	Pain and Suffering	**52 weeks**
	Medical Expenses	**KES 150,000**
	Last Expenses	**KES 50,000**
	Note: TTD is subject to a minimum wage of Kes13,500.- per month	

SECTION II - PROPERTY DAMAGE		
COVER:	Loss or damage to property due to an Accident/ incident as defined in the Policy Document	
SUBJECT MATTER COVERED:	Buildings/Out Structures, water pipes and Harvested Crops (Stock) outside the protected Wildlife areas	
LIMITS OF LIABILITY:	**Per any one claim/claimant**	**KES 150,000**
BASIS OF VALUATION:	Replacement cost	

SECTION III - CROP DAMAGE		
COVER:	Loss or damage to unharvested growing crop following an Accident/ incident as defined in the Policy Document	
SUBJECT MATTER COVERED:	Unharvested growing crops outside the protected Wildlife areas	
LIMITS OF LIABILITY:	**Per any one claim/claimant**	**KES 150,000**
BASIS OF VALUATION:	**Input cost per Acre**	**KES 15,000**

SECTION II - LIVESTOCK MORTALITY		
COVER:	Livestock Predation and Depredation as a result of an wildlife animal attack as defined in the Policy Document	
SUBJECT MATTER COVERED:	Livestock outside the protected Wildlife areas, namely: Cattle, Camel, Goats, Sheep, and Donkey	
BASIS OF VALUATION :	Based on Tropical Livestock Units (TLU)	
	1 TLU is Equivalent to	**KES 30,000**
	Cattle = 1TLU	**KES 30,000**
	Camel = 1.4TLU	**KES 42,000**

	Goat/Sheep = 0.15TLU	**KES 4,500**
	Donkey = 0.5TLU	**KES 15,000**
	Note: 1TLU = KES30,000.	

CONDITIONS

1) *Interpretation*

   This policy and the schedule shall be read together as one contract and any word or expression to which a specific meaning has been attached in any part of this policy or of the Schedule shall bear such specific meaning wherever it may appear.

2) *Material Disclosure*

   If there shall be any mis-description, misrepresentation or non-disclosure of a material fact from the information supplied by the Insured, this policy shall be rendered null and void.

3) *Communication*

   Every written communication shall be sent to the Insured's or claimant last known address or delivered personally. Notices and information to the Company must be in writing and sent to the registered office of the Company or its branch office.

4) *Alteration*

   The Insured shall within a reasonable time notify the Company in writing of any change in the material fact of the risk that may alter the circumstances that existed at the commencement of the policy and are likely to increase the risk of injury. Until the Company be advised of such alteration and expressly agrees in writing to accept liability for such altered risk, the Company shall not be liable in respect of any injury/death, loss or damage due to any such alteration or change in circumstances.

5) Breach of Warranties

The warranties and special memoranda attached to this Policy shall apply to the items concerned individually as if each were insured by a separate Policy. The breach of any warranty or special memorandum shall void the Policy only in respect of the item or items to which the breach applies and not in respect of the remaining items.

6) *Claims procedures*

a) The insured/claimant shall give notice in writing with full particulars of the injuries/damage/loss suffered as soon as reasonably possible upon the happening of an incident.
b) All supporting documents and information required by the Company shall be furnished by the Insured/claimant or a personal representative in the form and manner required by the Company.
c) The Company may carry out any necessary investigation and the Insured/claimant or his personal representative shall co-operate fully with such investigation.
d) In case of death of a person, a qualified medical practitioner may be appointed by the Company and shall be allowed to carry out a post-mortem examination.

7) *Named Beneficiary*

Payment of any amount payable under this policy by the Company in accordance with this clause shall effectively discharge the Company from any other liability on the claim.

8) *Fraudulent Claims*

If the Insured or his representative or claimant shall make a claim knowing the same to be fraudulent the claim shall not be payable. The Company may in addition refer the matter to the relevant law enforcement authority.

9) Contribution

If at the time of any loss or damage happening to any property hereby insured, there be any other subsisting insurance or insurances, whether effected by the Insured or by any other person or persons, covering the same property, this Company shall not be liable to pay or contribute more than its ratable proportion of such loss or damage.

10) Subrogation:

In the event of payment under this Policy, the Company shall be subrogated to all the Insured's rights or recovery thereof against any person or organization, and the Insured shall execute and deliver instruments and papers necessary to secure such rights. The Insured and any claimant under this Policy shall at the expense of the Company do and concur in doing and permit to be done, all such acts and things as may be necessary or required by the Company, before or after Insured's indemnification, in enforcing or endorsing any rights or remedies, or of obtaining relief or indemnity, to which the Company shall be or would become entitled or subrogated.

11) Cancellation

The Policy may be cancelled at any time at the request of the Insured in which case the Company will retain a premium calculated on pro rata basis for the time this Policy has been in force and provided no claim has arisen during the current Period of Insurance.

The Policy may also be cancelled at the option of the Company on 30 days' notice being given to the Insured in writing in which case the Company shall be liable to return a proportionate part of the premium for the unexpired period of the Policy from such date of cancellation.

12) Dispute Resolution

a) For any disputes arising out of this Policy the Insured shall endeavor to resolve the matter by negotiation with the Company.
b) Any disputes or issues not resolved by negotiation 30 days after the dispute arising may be resolved through a sole mediator jointly appointed by the parties in writing.
c) Disputes that remain unresolved 60 days after the dispute arose (unless the parties extend that period in writing) shall be resolved by a sole arbitrator appointed either by the parties in writing or, in the absence of an agreement on the choice of arbitrator, by the Chairperson of the Chartered Institute of Arbitrators (Kenya Branch) upon the request of any of the parties.

13) *Due Observance*

Every notice and other communication to the Company required by these Conditions must be written or printed.

Compliance, observance and fulfilment of the terms of this Policy by the Insured shall be a condition precedent to any liability attaching under this Policy.

14) *Jurisdiction Clause*

The indemnity provided by this Policy shall apply only in respect of judgments which are in the first instance delivered by or obtained from a court of competent jurisdiction within the Republic of Kenya.

Appendix – 1: SCALE OF BENEFITS PAYABLE PERMANENT DISABILITY SCALE AS A PERCENTAGE (%) OF CAPITAL SUM INSURED

SCALE OF BENEFITS FOR PERMANENT DISABLEMENT

The Compensation payable in the event of Permanent Disablement shall be the

following percentages of the limit as specified in the Policy Schedule or in the case of Permanent Disablement not specified in this table a proportion of the same sum assessed in accordance with the degree of disablement by referring to the percentages indicated below without taking into account the occupation of the Insured.

Description of Permanent Disablement Percentage of

Maximum Benefit Payable

1. Permanent Total Disability _____ 100%

2. Permanent and incurable paralysis of all limbs___ 100%

3. Permanent Total Loss of sight both eyes_____ 100 %

4. Permanent Total loss of a remaining eye _____ 100%

5. Permanent Total loss of sight one eye _____ 50%

6. Permanent Total Loss of use of two limbs _____ 100%

7. Loss of or the Permanent Total loss of use of one limb:

a) Right Hand _____ 100%

b) Left Hand _____ 60%

c) One foot _____ 100%

8. Loss of speech and hearing _____ 100%

9. Permanent and incurable insanity _____ 100%

10. Permanent Total loss of hearing:

a) Both ears _____ 75%

b) One ear _____ 25%

11. Loss of speech _____ 50%

12. Loss of or the permanent Total Loss of four fingers and thumb:

a) Right Hand _____ 70%10

b) Left Hand _____ 50%

13. Loss of or the Permanent Total loss of use of four fingers of:

a) Right Hand _____ 40%

b) Left Hand_____ 30%

14. Permanent loss of thumb – both phalanges:

a) Right Hand_____ 30%

b) Left Hand_____ 15%

15. Permanent loss of thumb – one phalange:

a) Right Hand_____ 15%

b) Left Hand _____ 7.5%

16. Permanent Loss of Index finger:

a) Right Hand - 3 phalanges _____ 15%

b) Right Hand – 2 phalanges _____ 10%

c) Right Hand – 1 phalanx_____ 7.5%

d) Left Hand - 3 phalanges_____ 10%

e) Left Hand - 2 phalanges_____ 7.5%

f) Left Hand - 1 phalanx_____ 5%

17. Permanent Loss of middle finger:

a) Right hand – 3 phalanges _____ 10%

b) Right Hand – 2 phalanges _____ 7.5%

c) Right Hand – 1 phalanx_____ 5%

d) Left Hand - 3 phalanges_____ 7.5%

e) Left Hand – 2 phalanges _____ 5%

f) Left Hand – 1 Phalanx _____ 3%

18. Permanent Loss of ring finger:

a) Right Hand - 3 Phalanges_____ 7.5%

b) Right Hand – 2 Phalanges_____ 5%

c) Right hand – 1 phalanx _____ 3%

d) Left Hand – 3 phalanges_____ 6%

e) Left Hand - 2 phalanges_____ 4%11

f) Left Hand - 1 phalanx _____ 2%

19. Permanent Loss of little finger:

a) Right/Left Hand – 3 phalanges _____ 5%

b) Right/Left Hand - 2 phalanges_____ 3%

c) Right/Left Hand – 1 Phalanx _____ 2%

20. Permanent loss of metacarpals:

1st or 2nd (additional) _____ 3%

3rd or 5th (additional) _____ 2%

21. Permanent loss of:

a) The great toe _____ 5%

b) Any other toe _____ 3%

22. Permanent loss of foot:

a) At ankle_____ 35%

b) Toes of both feet _____ 25%

23. Shortening of leg by at least 5cm _____ 10%

Where the injury is not specified, the Company will adopt a percentage of disablement which is consistent with the provisions of the permanent disability scale. Where the Insured is left-handed the percentages set out above for the various disabilities of right hand and left hand will be transposed. In the event of compensation becoming payable under more than one heading in respect of the Insured the total sum payable shall not exceed 100% of the Compensation specified in this Schedule. Loss is understood to mean either physical severance or complete and irreversible loss of use.

Schedule 1: List of Species for which Compensation will be Applicable

Human Death and Injury

1. Elephant
2. Lion
3. Leopard
4. Rhino
5. Hyena
6. Crocodile
7. Cheetah
8. Buffalo
9. Hippo
10. Wild Dog

Livestock Predation

1. Hyena
2. Leopard
3. Lion
4. Wild Dog
5. Leopard
6. Crocodile
7. Cheetah
8. Snake
9. Jackal

Crop Destruction

1. Elephant
2. Buffalo
3. Hippo
4. Zebra
5. Eland
6. Rhino
7. Wildebeest

Property Damage

1. Elephant

2. Buffalo
3. Hippo
4. Hyena
5. Zebra

REPUBLIC OF KENYA

MINISTRY OF TOURISM AND WILDLIFE

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