PEST MANAGENT PLAN

LIVESTOCK VACCINATION CAMPAIGN FOR MANAGEMENT OF EAST COAST FEVER (ECF)

UASIN GISHU COUNTY

Coordinates: Longitude: 0°31'31.8" Latitude: 35°16'35.868"

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This report on Pest Management Plan (PMP) for the proposed East Coast Fever vaccination of high value dairy cows in UasinGishu County was prepared as per the requirements of the World Bank Group Environment and Social Safeguard Policies (ESSP)

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All the stakeholders who gave their comments cannot be forgotten; without which it would not have been possible to compile this report.

ACRONYMS

CDSO	Chief Drug Strategy Officer
CDVS	County Director of Veterinary Services
CECM	County Executive Committee Member
CESSCO	County Environment and Social Safeguards Compliance Officer
UGC	Uasin Gishu County
CIDP	County Integrated Development Plan
CIG	Common Interest Group
CO	Chief Officer
COVID-19	Corona Virus Disease
CPC	County Project Coordinator
CPCU	County Project Coordinating Unit
CTAC	County Technical Advisory Committee
CTD	County Technical Department
ECF	East Coast Fever
EMCA	Environment Management and Co-ordination Act
GHG	Green House Gases
GRM	Grievance Redress Mechanism
IVM	Integrated Vector Management
KCSAP	Kenya Climate Smart Agriculture Project
KSHS	Kenya Shillings
KEVEVAPI	Kenya Veterinary Vaccines Production Institute
M&E	Monitoring & Evaluation
MOH	Ministry of Health
NEMA	National Environment Management Authority
NPCU	National Project Coordinating Unit
OHSOP	Occupational Health and Safety Operational Policy
PDO	Project Development Objective
PHO	Public Health Officer
PO	Producer Organization
PMP	Pest Management Plan
PPE	Personal Protective Equipment
SMS	Short Message Service
VMG	Vulnerable and Marginalized Group

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EXECUTIVE SUMMARY

Milk production is one of the main sources of economic livelihood to farmers in Uasin Gishu County and as such cattle are reared by most farmers in the County. The enterprise encounters several challenges with the main challenge being diseases such as East Coast Fever (ECF).

In its Integrated Development Plan (CIDP), the County Government of Uasin Gishu (CGUG) has envisioned vaccinating all cattle against ECF in an effort to cushion farmers against economic and nutritional losses that may arise from this disease. The Directorate of Veterinary Services in the County has included Vaccination campaign against this disease in their annual work plan and dairy farmers have asked for support in this area. Uasin Gishu County, through the Department of Agriculture, Livestock and Fisheries, has identified this vaccination campaign as one of the projects that the county Government would like to be supported by the Kenya Climate Smart Agriculture Project (KCSAP).

The KCSAP vaccination sub-project focuses on increasing agricultural productivity, enhancing resilience to impacts of climate change and contributing to reduction in GHG emissions. Successful implementation of the proposed livestock diseases vaccination and treatment is envisaged to increase livestock productivity while building resilience of both the livestock and livestock keepers through improved body immunity and sustained incomes respectively.

This Pest Management Plan (PMP) has been prepared to provide guidance for the management of East Cost Fever (ECF) vaccination in Uasin Gishu County. The Plan will contribute to improved ECF management, personal safety and environmental sustainability. The PMP has been prepared to meet the demands of the World Bank Operational Policy 4.09 which supports an integrated approach to pest management. The preparation of this PMP has been guided by Terms of Reference (TOR) for the PMP assignment in Uasin Gishu County (See Annex 3).

Preparation of the Pest Management Plan has involved review of all relevant literature and interaction with key stakeholders using structured and open-ended interviews. The process also involved field visits to the vaccination points (sampled selected dips and crashes in the county).

Farmers in sampled crashes and dips were consulted and asked to give their views on the exercise, which are included in this PMP report. Questionnaires were used to gather data from the farmers' experiences on the use of synthetic pesticides and nonchemical control methods used to protect their livestock from ECF attacks.

Environmental and Social Safeguard screening has been done on the proposed project which identified several positive impacts and negative impacts whose mitigation measures have been highlighted in this Pest Management Plan (PMP). The anticipated positive impacts are reduced mortality in cattle, improved quantity and quality of milk and meat, hence reducing chances of loss of livelihoods for farmers.

The negative social impacts may include accidents and injuries, exposure to COVID-19 in the community due to gathering at the vaccination points, conflicts/ disagreements among livestock

owners may also arise from list of beneficiaries as well as exclusion of some beneficiaries due to some cultural beliefs, wastes from empty vaccine vials, antibiotics containers, dewormers and mishandling of needles and shrapnel may cause accidents and injuries to the participants at the site. Mitigation will include strict adherence and observance of Ministry of Health protocol in containment of COVID-19 to minimize risk of exposure and spread of COVID-19, proper sensitization and mobilization will also be done to mitigate the risk of exclusion of beneficiaries' and strict observance of sample participant lists and proper disposal of sharp objects.

The negative environmental impacts may include contamination of water sources from poor disposal of empty/used vaccine containers and other drugs (antibiotics, dewormers) containers, vaccination site floral disturbance owing same time arrival of animals at the site causing congestion. These wastes impacts will be mitigated by ensuring that they are all collected and disposed-off safely using the NEMA protocol of disposing such wastes at designated licensed incinerators. Wastes will be separated into different categories and this will require provision of different portable waste provided bins to contain the different classes of wastes.

The document defines actions to protect veterinary vaccines, drugs and pesticides against extreme environmental conditions (cold-chain management) that would otherwise limit their effectiveness in controlling livestock diseases; a dynamic community communication strategy and consultative process that promotes inclusivity and community decision making in-order to increase awareness and participation; solid, chemical and biological wastes management; and lastly, delivery of vaccination while ensuring safety of livestock and humans involved against physical, chemical and biological hazards more so at such time of COVID-19 pandemic.

This PMP is an elaborate plan for implementation of measures that ensure social and environmental protection before, during and after application of veterinary vaccines, drugs and pesticides in livestock disease control activities (vaccination campaign). It identifies veterinary vaccines and drugs handling, storage, transportation, delivery (to the animal) and disposal risks that may be encountered and their potential effects on human, livestock and environmental health. For each risk identified, mitigation measures have been delineated for implementation.

The project is estimated to cost **Kshs, 50,912,200** out of which **Kshs 31,275,000** is requested from **KCSAP** while the rest**, Kshs 19,637,200** will be contributed by the **County Government of Uasin Gishu.** The sub project funds will be managed under CPCU project account including PMP activities. Vaccination will be carried out countywide with10,000 households expected to benefit and a total of 24,000 heads of cattle being targeted for vaccination.

The proposed vaccination project, once carried out, will have huge positive economic benefits to the County in general and to individual dairy farmers by reducing mortality rate in cattle and loss in quality and quantity of milk.

CHAPTER ONE

BACKGROUND INFORMATION

INTRODUCTION

Uasin Gishu County is one of the counties created with the promulgation of the Constitution of Kenya in 2010.

This ECF vaccination campaign has been necessitated from the recent statistics of livestock disease prevalence in the county which shows that ECF has a prevalence of 50-63%, anaplasmosis 50-60%, mastitis 15-17% among many other diseases reported by the Ministry of Agriculture, Department of livestock in the county reports, (See Table 4 for prevalence of other diseases)

The County extends between longitudes 340 50' east and 350 37' east and latitudes 00 03' South and 00 55' North. The County shares common borders with Trans Nzoia County to the North, Elgeyo Marakwet County to the East, Baringo County to the South East, Kericho County to the South, Nandi County to the South West and Kakamega County to the North West. It covers a total area of 3,345.2 km^2. *Figure 1* shows the location of the County in Kenya.

The main economic activity in the County is agriculture of both crop and livestock farming. This is attributed to the County's rich fertile soils and favorable climatic conditions. Other economic activities include wholesale and retail trading and manufacturing. The County is also a commercial hub in the region providing transport, financial and educational services at Eldoret town which is its headquarters.

The County is within the Lake Victoria catchment zone and therefore all the rivers from the County drain into Lake Victoria. Major rivers in the County include: Moiben, Sergoit, Kipkaren, Chepkoilel and Sosiani. The rivers provide water for livestock, domestic and industrial use.

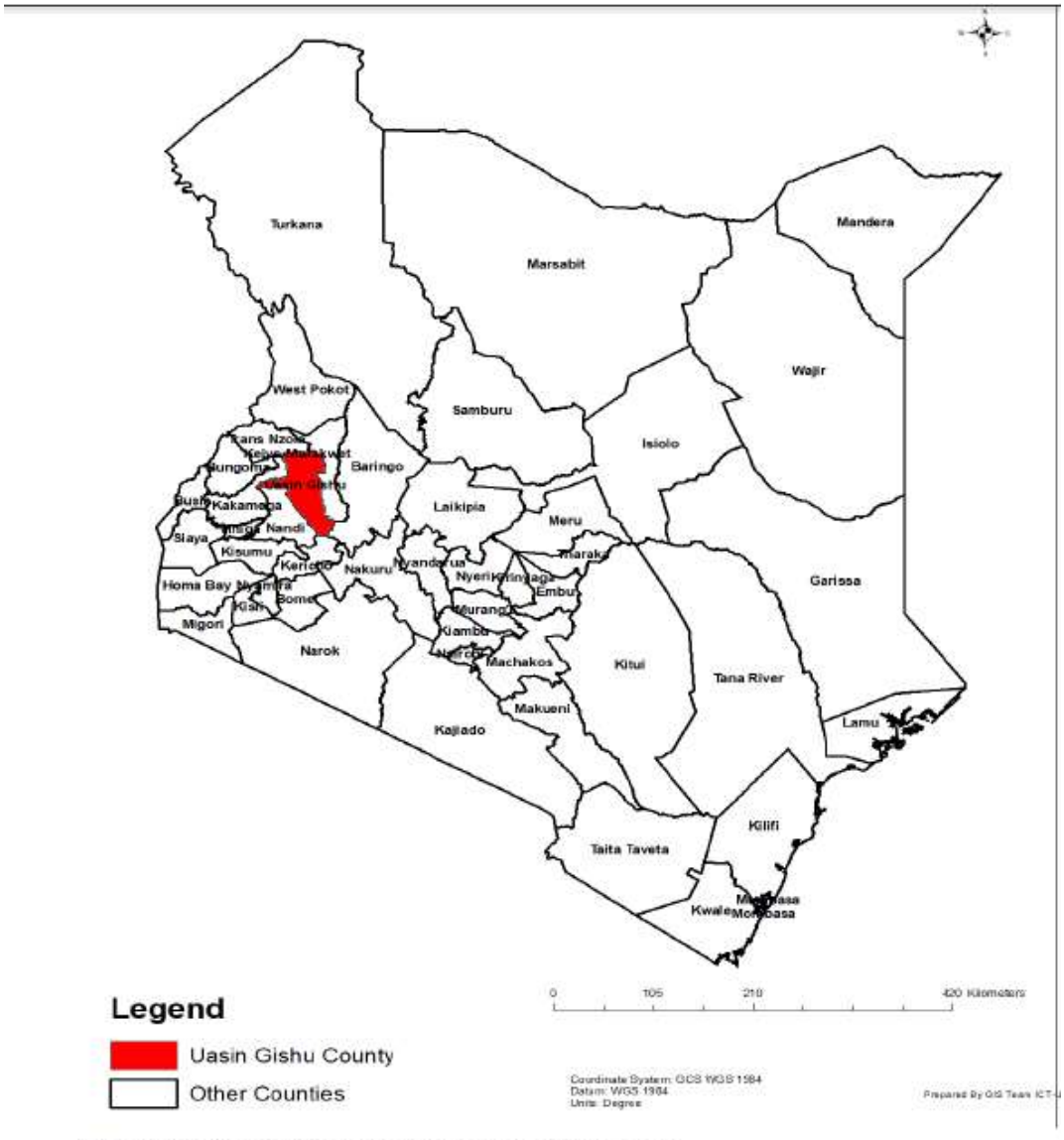
The County is divided into three zones namely: the upper highlands, upper midlands and Lower highlands. These zones have greatly influenced the land use patterns in the County as they determine the climatic conditions of an area. The geology of the County is dominated by tertiary volcanic rock, with no known commercially exploitable minerals.

There are four main soil types in the County; red loam, red clay, brown loam and brown clay soils. The red loam soils are found mainly in the northern part of the County in Turbo, Moi's Bridge and lower Moiben and this type of soils mainly supports maize, sunflower, and cattle farming. The red clay soils occur around Soy, upper Moiben, and Nandi border areas and they support wheat and maize growing, and the natural vegetation is similar to that of the areas with red loam soil. The brown clay soils occur mainly on the plateau and cover most of the upper Lessos plateau areas and are good for rearing livestock. Deep brown loam soils occur in high altitude areas of the County around Ainabkoi and Kaptagat that are good for forestry, dairy farming and wheat, pyrethrum, potato, oat and barley farming.

The County experiences a high and reliable rainfall with an average annual rainfall ranging between 624.9mm-1560.4mm. It occurs between the months of March and September with two distinct peaks

in May and August. The areas with relatively higher rainfall are found in Ainabkoi, Kapseret and Kesses whereas Turbo, Moiben and Soy receive relatively lower amounts of rainfall. The dry spells start in the month of November and end in February. Average temperatures range between 17^0C and 29^0C. The rainfall and temperatures in the County are conducive for both agriculture and livestock farming.

Fig 1: Map of Kenya showing Location of Uasin Gishu County



Source: GIS Team, ICT & e-Government Department, UGC, 2018

Source Uasin Gishu County; CIDP 2018-2022

Administratively, the County is divided into six sub-counties namely Soy, Turbo, Moiben, Ainabkoi, Kapseret and Kesses which also serve as divisions. These are further sub-divided into fifty-seven locations and 105 sub-locations as indicated in Table 1. The delineation of villages is yet to be undertaken.

Table 1: Uasin Gishu County administrative units

Sub-County	Area in kms	No. of divisions	No of wards	No. of locations	No. of sub locations	Names of wards
Soy	768.0	1	7	13	21	Kuinet/Kapsuswa, Kapkures, Ziwa, Segero/Barsombe, Kipsomba, Soy & Moi's Bridge
Turbo	322.7	1	6	10	16	Ngenyilel, Tapsagoi, Kiplombe, Kapsaos, Huruma & Kamagut
Moiben	777.1	1	3	10	23	Tembelio, Moiben, Karuna/Meibeki, Kimumu& Sergoit
Ainabkoi	479.9	1	3	10	22	Kapsoya, Ainabkoi/Olare & Kaptagat
Kapseret	300.8	1	5	4	6	Simat/Kapseret, Langas, Ngeria, Megun & Kipkenyo
Kesses	696.7	1	4	10	17	Tarakwa, Cheptiret/ Kipchamo, Tulwet/Chuiyat & Racecourse

Source: Uasin Gishu CIDP 2018-2022

The main livestock reared in the County are dairy and beef cattle mostly of Ayrshire, Friesian and Sahiwal breeds; sheep, goats, pigs, chicken both exotic and indigenous. All livestock are reared in any part of the County but dairy cattle do well in Ainabkoi, Kapseret and Turbo areas. The dairy cattle population comprises of approximately 20 per cent pure breeds, 70 per cent crossbreeds and 10 per cent indigenous cattle as shown in Table 2 below

Table 2: Population of Livestock by type

Livestock type	2013	2017
Dairy cattle	324,586	336,122
Beef Cattle	39,773	40,270
Sheep	128,091	129,692
Meat goat	82,821	83,856
Dairy goat	451	470
Pig	12,695	12,854
Exotic chicken	143,884	145,684
Indigenous chicken	707,903	716,752
Bee keeping (hives)	23,166	23,289

Source: Uasin Gishu County CIDP 2018-2022

The produce from these livestock include: milk, beef, mutton, pork, eggs, honey, skins and hides. The County produces 200 million kgs of milk and 2.5 million kgs of meat annually. 50 per cent of the milk produced is marketed through the small traders operating licensed mini-dairies, milk bars and hawking while the remaining are sold to New KCC (15 per cent) and private processors (35 per cent).

While the dairy sub-sector, is associated with negative environmental impacts, it represents about 6-8% of Kenya's GDPS (KDB, 2012) with over 4.3 million heads of dairy cattle. It also contributes over 80% of the total milk production through small holder farming units and provide subsistence for more than one million low-income household (Odero-Waitituh & J. A., 2017).

In Uasin Gishu County of Kenya the rapidly declining household land sizes has let to increased intensification in smallholder dairy production. Currently almost 90% of urban and peri-urban dairy farmers practise intensive and semi intensive dairy production system of farming. In this regard optimum utilization of resources to maximize on production is a pre-requisite measure.

Animal disease is a critical setback in dairy performance in the livestock sector, of highest importance is East Coast Fever disease; a tick born disease with an estimated prevalence 63% and mortality of between 50-60% in sub-Sahara Africa.

Dairy farmers in Uasin Gishu, lose close to 1.5 billion shillings annually in management of tick-borne diseases. While the county government has spent over 145 million shillings in the last 5 years in tick control strategy through subsidy on dipping expenses the farmers spend over 300 million annually to dip their animals besides further losses associated with animal mortalities, slow growth rates, treatment expenditure and milk production losses. (See Table 3)

The ECF immunization concept arose from observations of naturally acquired immunity and involves an elaborate infection-and-treatment strategy (ITM). The immunity lasts up to three years in the absence of further tick infestations but is life-long if infected ticks continue to challenge the immunized animal regularly.

Reduced dipping expenses attributed to reduced dipping/spraying frequency on the vaccinated animals-dipping cost will be cut from the current average of **Kshs 24.9 million** per year to **Kshs 12.5 million** annually. Milk losses/ production loss, reduced calf growth rate, and mortality losses account for the largest share of losses. A cow infected will hardly peak in production. Uasin Gishu farmers lose close to **Kshs. 0.5 billion** in production loss from dairy due to E.C.F disease.

Prevalence of the disease is at 63% for animals below 18 months, with case fatality rate of 100% if no treatment is administered. It is estimated to cost farmers **Kshs 72 million** per year in treatment expenses at the current market rate of **Kshs. 5,000** per cow.

Besides increased productivity of the immunized animals there is reduced usage of pesticides in form of acaricides by the farmers this will reduces the environmental impact associated with the pesticides usage.

The economic analyses demonstrate the value of integrated control in which ECF immunization is practiced is always a necessary component with a payback period of less than 1 year. (See Table 3 & 4 bellow)

Table 3: East Coast Fever Incidences Reported & Treated in the County

Year	Disease	No. of cases per sub-county						Total
		Ainabkoi	Kesses	Kapseret	Soy	Moiben	Turbo	
2017/18	East Coast Fever (ECF)	960	881	762	1,231	1,247	1,123	6,204
2018/19	East Coast Fever (ECF)	1,267	987	782	1,345	1,217	1,100	6,698
2019/20	East Coast Fever (ECF)	982	965	814	1,256	1,209	907	6,133
TOTAL	**-**	**3,209**	**2,833**	**2,358**	**3,832**	**3,673**	**3,130**	**19,035**

Source: MOALF, 2020.

Table 4: Other disease and their prevalence and control strategies in the county

Disease	Prevalence	Control Strategy
Foot and Mouth Disease	Endemic-varies with seasons	Routine vaccinations every six months
Lumpy Skin Disease	Sporadic outbreaks	Routine vaccination done annually
Anthrax	Sporadic Outbreaks	Regular vaccination
Rabies	2-5%	Routine vaccination
Rift valley fever	Varies with seasons and high incidences during rainy seasons/floods	Vaccinations done
Black Quarter	5-8%	Routine vaccinations
East coast fever	50-63%	Vector control, immunization and treatment
Anaplasmosis	50-60%	Vector control, and treatment of infected animals
Red Water/Babesiosis	6-8%	Vector control
Heart Water	2-3%	Vector control
Trypanosomiasis	2-5%	Vector control
Mastitis	15-17%	Farmer education, hygienic milking procedures
Pneumonia	High prevalence in calves	Good calf rearing and management practices
Milk Fever	1-3%	Nutritional management

Source: MOALF, 2019

Management of the disease is done by treatment and vaccination of cattle using approved vaccines. The Kenya Veterinary Vaccines Production Institute is the authorized government institution charged with production of ECF vaccines.

World Bank policies on Environment and Social Safeguards especially OP4.09 on Pest Management and OP4.01 on Environmental Assessment has been triggered by this project since the project involves procuring vaccines, which are categorized as pesticides, and wastes from this activity are likely to impact negatively on the environment. OP4.09 encourages reduction in reliance on synthetic chemical pesticides, advocates promotion of Integrated Vector Management (IVM), and calls for minimization of environmental and health hazards of pesticide use. OP4.01 on Environmental Assessment requires

that all WB funded projects are environmentally and socially sound and sustainable. This policy is triggered in this vaccination project since the vaccination process is likely to contaminate the environment with wastes such as empty vaccine bottles, bent or broken injection needles, used antibiotic vials, empty antihelmintic containers, used needles, disposable plastic syringes, discarded cotton wool and expired vaccines. The triggering of the two World Bank policies calls for critical analysis of administration of the vaccines and management of all wastes that will emanate from this activity, hence the need for preparation of this PMP.

This vaccination project has been agreed upon after thorough and meaningful consultations carried out among all the relevant stakeholders, who mainly comprise dairy farmers, County leadership and County Technical Departments (CTDs), especially the Veterinary Department. The project is meant to benefit approximately 15,000 dairy farmers in Uasin Gishu County and since farmers will only need to ear tag and register their animals with Kenya Stud Book as well as repair crushes it is envisioned to reach out to the most vulnerable individuals from all parts of the sub-County, with the number of beneficiary households estimated at 10,000.

Uasin Gishu County is one of the 24 Counties in the country that is benefiting from the World Bank agricultural support under the Kenya Climate Smart Agriculture Project (KCSAP). In Uasin Gishu County, KCSAP is in 3 Sub-counties namely Ainabkoi (Ainabkoi/Olare and Kapsoya wards), Kesses (Tarakwa and Tulwet/Chuiyat wards) and Soy (Kapkures and Kipsomba wards).

KCSAP is supporting farmers through micro-projects in three value chains of Dairy, Indigenous Chicken and Irish potatoes and also through sub-projects and Producer Organizations (POs). Most farmers in Uasin Gishu County are mixed farmers who grow crops and at the same time keep livestock (sheep, goats, poultry and cattle). The cattle are mainly reared for milk production. The dairy farmers are the worst hit in case of an outbreak of ECF and they have requested the County Government of Uasin Gishu to vaccinate their animals against the disease.

The Uasin Gishu County, through the Department of Agriculture, Livestock and Fisheries has requested KCSAP for funding vaccination programme of 24,000 cattle in the county against ECF as a sub-project. This will save them huge economic and livelihood losses that may occur when their animals are infected by the disease. The vaccination programme is captured in the CIDP and a key activity in the Directorate of Veterinary Services in the Department of Agriculture, Livestock and Fisheries. In this programme, Uasin Gishu County will facilitate the vaccination exercise while KCSAP will procure the required vaccines.

The county government has also put in place several mechanisms to support the National government in enforcing the safety protocols of containing the spread of COVID-19 pandemic, these include putting place a county task force and surveillance teams responsible for providing timely reports on the pandemic at the county level. The enforcement of measures of controlling the pandemic is also done

by the county officials; these measures shall be followed even during the entire exercise of ECF vaccination.

CHAPTER TWO

2.1 METHODOLOGY

The methodology used to develop this PMP was based on literature review, interviews and public/stakeholders' consultation. Literature review of existing policies and legislation of the Government of Kenya and of applicable World Bank Safeguard Policies was carried out in areas of livestock production and protection.

Desk top literature review was undertaken to identify priority concerns on livestock pests/diseases, the legislation, use of pesticides and veterinary drugs and IPM initiatives currently being undertaken or envisaged.

Various legislative and policy documents reviewed included the following:

a) Kenya Animal Health Act, Revised Edition 2012 [1983]

b) The Veterinary surgeons and veterinary Para -Professionals Act; No 29 of 2011

c) The World Bank Safeguard Policy on Pest Management, O.P. 4.09

e) Environmental Management and Coordination Act,1999

f) Meat Control Act, Chapter 356, Revised edition 2012 (1977)

g) Food, Drugs and Chemical Substances Act Chapter 254, Revised edition 2012 (1992)

Fieldwork was undertaken with visits to sampled crashes and dips where the actual vaccination programs will be carried out.

A total of 150 cattle dips were selected to participate in the vaccination program, this represents 5 dips selected in each of the 30 wards in Uasin Gishu County. Information on the vaccines to be used in the program was obtained from the Department of veterinary and other stakeholders during the one Key Informant Interviews (KII) conducted on 07th April, 2021 at Chebororwa Farmers Training Collage, where a total of ten Key informants attended, these were:

KCASP Uasin Gishu Coordinating unit	4 officials
NEMA Uasin Gishu County	1 official
Uasin Gishu County Department of Veterinary -	5 officials

A total of five public baraza which incorporated other stakeholders in the selected dips were conducted between 21st May 2021 to 27th May 2021. The representation was as follows:

Name of Cattle Dip	**Date**	**Total No. of respondents**
Chepkoilel Cattle Dip	21/5/2021	18 respondents
TekelTich cattle dip	24/5/2021	18 respondents
Kapkoriony Cattle Dip	24/5/2021	22 respondents
Chereber cattle dip	25/5/2021	25 respondents
Kapteldon cattle Dip	26/5/2021	23 respondents

Sample questionnaires used have been annexed to this report, (Annex 5) and all attendance lists annexed at Annex 4 of this report.

Further processes of developing the PMP included the following stages:

- Collation of baseline data on agriculture, livestock and pesticide use in Kenya.
- Identification of positive and negative economic and environmental and social impacts of vaccine use under KCSAP.
- Identification of environmental and social mitigation measures.

2.2 LEGAL, POLICY AND REGULATORY FRAMEWORK

Kenya like any other country has policies and laws governing the implementation of such projects in the country. Every activity or project done must be checked to comply with all the corresponding policies, laws and regulations.

The relevant national policies, laws regulations as well as World Bank Policies to consider in the Uasin Gishu County ECF vaccination project include the following;

Environmental Management and Co-ordination (Waste Management) Regulations 2006 which is described in Legal Notice No. 121 of the Kenya Gazette Supplement No. 69 of September 2006. The Regulations outline requirements for handling, storing, transporting, and treatment / disposal of all waste categories. Therefore, in the implementation of this project, all vaccines for ECF should follow the laid down procedures in transportation from one point to the other.

EMCA sections 33, 34, and 35 (Part V on Pesticides and Hazardous wastes). The sections give provisions for classification, registration, labeling, packaging, advertising, distribution, storage, transportation, handling and disposal of pesticides.

The Occupational Health and Safety Act 2007 particularly sections 83 to 86. Section 83 gives provisions for handling, transportation and disposal of chemicals and other substances; Section 84 gives provisions for material safety data sheet; Section 85 provides for proper labeling and marking of all chemical packaging; while Section 86 advocates for classification of hazardous chemicals and substances.

The Public Health Act (Cap. 242) Part IX, section 115, of the Act requires protection of human health against injurious activities, or such that may cause a nuisance. Section 116 of the Act requires Local Authorities to take all lawful, necessary and reasonably practicable measures to maintain their jurisdiction clean and prevent occurrence of nuisance or condition liable to be injurious or dangerous to human health. During the implementation of this project such activities that may contravene provisions of this act shall be avoided.

Word Bank policies on Environmental Assessment especially OP 4.09 on Pesticide Management and OP 4.01 on Environmental Assessment: These policies are aimed at ensuring that all World Bank projects reduce reliance on synthetic chemical pesticides, promotes Integrated Pest and/or Vector Management, and minimize environment and health hazards of pesticide use.

Public Health (COVID-19 Restriction of Movement of Persons and Related Measures) Rules 2020 where section 6. (1) of the rules state that every person who is in a public place during the restriction period shall;

a) maintain a physical distance of no less than one meter from the next person; and
b) Use a proper face mask that must cover the person's mouth and nose.

Sub rule (2) states that every organization, business entity, trader or vendor whether in a market or enclosed premises shall;

(a) provide at their business location or entrance to their premises, a handwashing station with soap and water or an alcohol-based sanitizer approved for use by the Kenya Bureau of Standards;
(b) put in place measures to ensure that physical distance of no less than one meter is maintained between persons accessing or within their premises or business location; and;
(c) regularly sanitize their premises or business location.

In delivering the expectations of this project, the above stated regulations in containing the spread of COVID-19 shall be a daily tradition with both individual and collective efforts encouraged.

In addition, communiqués issued by National Director of Veterinary Services (DVS) and World Organization for Animal Health (OIE) and the World Veterinary Association (WVA) entitled "COVID-19 and veterinary activities designated as essential" on delivery of veterinary services will be adhered to. Where possible, livestock producers to present animals individually at vaccination sites and observe personal hygiene and social distancing during the exercise as well as other COVID containment measures

2.3 STAKEHOLDER CONSULTATION

In the Kenya 2010 Constitution, public consultation before implementation of any project based in the community is a must. The community view on any project determines its implementation; it is the work of the implementing body to consider the public views in addition to other stakeholders.

Following the above requirement, this ECF vaccination project in Uasin Gishu County has been agreed upon after thorough and meaningful consultations and engagement carried out among all the relevant stakeholders, who mainly comprise dairy farmers, County leadership, County Technical Departments (CTDs), especially the Veterinary Department and NEMA. (See Annex 4 for the attendance list).

Their views were obtained through use of the methods already listed in the methodology chapter which included but not limited to:

- Open and closed ended questionnaire tool to the members of the public
- Key Informant Interview guide on identified Key informants of the project
- Engagement with the relevant stakeholders
- Desk top reviews to acquire secondary data about the project area and information about the vaccines to be used.

SAMPLED PHOTOS SHOWING KEY INFORMANT ENGAGEMENT

Key Informants engagement at Cheborорwa Farmers Training Collage on 07th April 2021

SAMPLED PHOTOS SHOWING PUBLIC ENGAGEMENT

Kipkoriony Cattle Dip - Ainabkoi sub-county on 24th May 2021

Chepkoilel Cattle Dip - Moiben Sub-county on 21st May 2021

Kapteldon Cattle Dip - Kapseret Sub-county on 26th May 2021

Chereber Cattle Dip - Kesses Sub-county on 25th May 2021

Tekeltich Cattle Dip - Soy Sub-county on 24th May 2021

CHAPTER THREE

3.1 JUSTIFICATION FOR CARRYING OUT VACCINATION OF CATTLE AGAINST ECF

The East Coast fever, also known as theileriosis, is a disease of cattle which occurs in Uasin Gishu County and is caused by the protozoan parasite *Theileria parva*. The primary vector which spreads *Theileria parva* between cattle is brown ear tick – *Rhipicephalus appendiculatus*.

ECF Manifest itself with the following signs; fever, enlarged lymph nodes, anorexia, difficult breathing, corneal opacity, anemia and diarrhea. If no treatment is undertaken, the animal might die within 7 days. The disease is notifiable and is highly infectious with high morbidity rates and varying mortality rates. It is referred to as a notifiable disease as it is supposed to be reported to authorities when it occurs as it can spread across the farms, county and national borders.

Other main notifiable diseases that occur are-

- Foot and mouth disease
- Lumpy Skin
- Anthrax

East Coast Fever is protozoan in nature and is curable but expensive to treat. This therefore calls for the establishment of preventive measures to ward off infections. The disease causes huge economic losses in the dairy industry through:

- Reduction and or losing production of milk as affected animal takes long to recover and resume production.
- Animal deaths from the disease
- Cost of treatment and control as supportive therapy.
- Loss in man hours spent attending to the sick animals.

Farmers, milk transporters, agro-dealers and farm workers will likely lose their economic livelihoods in case of an outbreak of the disease.

Milk processers will incur enormous economic losses in an eventuality of an outbreak due loss of quantity and quality of milk.

The management of this disease is through prevention (vaccination), control of vectors, treatment and control of livestock movement.

Throughout the year, the county is faced with numerous incidences of the East Coast Fever disease (Table 3). The disease is tick-borne and though it is treatable, the drugs used are very expensive and most of the time the animals affected die because farmers cannot afford to buy the drugs. While the infected animal is undergoing treatment, the milk is discarded and in some cases the in calf cows abort resulting in loss of lactation cycle.

To control this disease, the vectors should be controlled by use of acaricides i.e. by spraying or dipping the animals weekly. Usually farmers spray their animals irregularly due to expensive acaricides and hence poor control of the disease. Consequently, the effective way to control ECF disease is by use of

vaccination. Though the ECF vaccination is expensive, the good thing about it is that the animal is given the vaccine once in its life time and it is protected.

The County Department of Veterinary Services has hitherto managed to prevent and control this disease through giving subsidy to the dip committees to acquire the acaricides, which is not sustainable in the long run and the budgetary allocation to the department is not sufficient.

Although ECF vaccination is captured in the CIDP and the annual work plan of the technical Department of Veterinary Services, there is no budgetary allocation given despite its economic importance. Owing to the high economic disadvantages of the disease, there is need to prevent its occurrence. A total of 24,000 heads of cattle are targeted for vaccination. The proposed vaccination activities will be carried out countywide and the expected number of beneficiaries is 10,000 households. The sub-project will immensely benefit dairy farmers in the county since it will reduce outbreaks of ECF and as a result there will be increased income from sale of milk, reduced deaths of cattle, increased availability of cattle for sale by farmers and saved cost of treating animals when they get infected by the disease. In addition, livelihoods of people who are employed directly or indirectly in the dairy value chains will be maintained and improved. The environmental protection will be enhanced since the amount of pesticides (acaricides) will be reduced and used items such as vials and used syringes will be minimized.

3.2 VACCINATION PROCESS

3.2.1 TARGETING AND MOBILIZATION

This project of ECF Vaccination in Uasin Gishu County will take place in the whole county which has a total of 6 Sub-counties and 30 wards (See table 5 below).

Table 5: Targeted areas

Sub-County	No. of wards	Names of wards	Names of selected cattle dips site(s)
Soy	7	Kuinet/Kapsuswa, Soy, Segero/Barsombe, Ziwa, Kapkures, Moi's Bridge & Kipsomba	Cotzee, Kapchan, Katani, Cherori, Tegelmoi, Sigen, Kipsangui, Soy-Tuiyobei, Kesogon, Lelagin, Toror, Segero-Moiben, Chepterit 2, Lemoru Ngeny, Kilagan, Kagorwa, Legebet, Ziwa-Machine, Ainamoi, Nyalilbei, Ziwa-Sirikwa, Lamaiywet, Chebarus, Kapkures, Mogoiywet, Tuigoin, Tuiyobei, Kilimo, Katitwet, Melooh, Chemororoch, Kipsomba A, Cheplaibei.
Turbo	6	Ngenyilel, Tapsagoi, Kiplombe, Kapsaos, Kamagut & Huruma	Chepsaita, Osorongai, Murgusi, Emgoin, Ngenyilel, Besiobor, Kamulat, Mogoiywet, Tapsagoi, Karunda, Chebarus Sugoi, Ainabngetik, Kimolwet, Kamagut West, Chemalal, Lower Sosiani, Lelakin, Chebarus, Buhemba, Besiobor, Kapkeben & Kapkingongo
Moiben	3	Moiben, Karuna/Meibeki, Sergoit & Tembelio.	Itet, Kapngetuny, Kapsubere, Kabirong, Cheplaskei, Kapnasu, Kapchepokok, Sasitwa, Tuiyotich, Kapkorio, Kiriswa, Chemanues, Chepkoilel, Tuiyoluk, Kapkei, Kapsoen, Chepkosom & Kuriot
Ainabkoi	3	Ainabkoi/Olare, Kaptagat & Kapsoya	Korongoi, Chepkurmum, Chelugui, Kahungura A, Soliat, Ainabkoi, Kapkeno, Kipkabus Farmers, Kapkoriony, NgelelTarit, Tendwo, Kongasis, Chesogor, Kileges, Rot-Tuga B, Mvita, Koilel, Beliomo & Ilula
Kapseret	5	Megun, Ngeria Kipkenyo & Simat/Kapseret	Chemina, Kapcheserut, Kabongo, Kibabet, Cheptabach, Chepkongony, Kaplelach, Chepyakwai, Olesos, Kapmuzee, Kisor, Kipkenyo, Mutwot, Kaptoro, Simat Tartar, Sinendet Chepkatet, Kapteldon, Tuiyo & Kabongo
Kesses	4	Tarakwa, Tulwet/Chuiyat, Cheptiret/ Kipchamo, Racecourse	Lorian, Sengwer, Chereber, Kiptega, Chebarus, Bindura B, Masaba, Chesumet, Koisagat, Kerio, Chepsirya, Mosop, Chepkigen II, Kipchamo central, Chuchuniat & Eldoret Polytechnic

For effective roll out of the project, mobilization exercise shall be undertaken by the Department of Veterinary staff in Uasin Gishu County in collaboration with local community leaders at the project execution points. During mobilization Sub-county administrators, Ward administrators, Chiefs, Assistant chiefs, Dairy cooperatives, opinion leaders and community elders will mobilize target communities through barazas/ meetings which shall be held in strict compliance of COVID-19 regulations and through short messages (SMSs).

Publicity will be through veterinary officers, administrators in the ground and placing of posters at strategic areas to create awareness to all dairy farmers in the County. They will ensure that all vulnerable and marginalized (the aged, the widows, the HIV/AIDS infected, the youth, the women and the disabled) dairy farmers in the County get informed of the vaccination activity and participate in it. Mobilization and publicity will be through channels of communication depicted in Table 6.

Table 6: Channels of communication

Channel of communication	**Communication point**	**Responsibility**
Use of mobile phone (calls and SMS)	• Individuals/groups	Veterinary & other CDTs responsible for the project
Oral communication (word of mouth)	• Cattle Dips Sites • Livestock Watering points • Livestock markets • Chiefs' baraza • Churches • Schools	County veterinary personnel, Chiefs, Assistant chiefs and Village elders
Print media (Banners, Fliers and posters)	• Dips • Watering points • Livestock markets • Ward, chiefs and county livestock offices	KCSAP Coordinating Unit Uasin Gishu County Department of Agriculture Uasin Gishu County
Electronic media	• Use Local radio station for: - Announcements - Talk shows	KCSAP Coordinating Unit Uasin Gishu County

The Uasin Gishu County through the Directorate of Veterinary Services will ensure that there are adequate vaccination crushes in each ward. Arrangements will be made for aged farmers who may not be able to drive their cattle to the crushes to have their animals vaccinated on their farms. Political leadership will be informed on the project during mobilization. Various stakeholders have been mapped as depicted in table 7 bellow.

Table 7: Stakeholder Mapping

STAKEHOLDER	**ROLE**
Farmers/Beneficiaries	-Own the project and take their animals for vaccination -Construction and repair of crushes -Provide & prepare venue where vaccination will take place -Cooperate with the vaccination team -Participatory monitoring

	-Comply with the Ministry of Health guidelines in containing the spread of COVID-19 disease by wearing face mask, keeping the required physical distance, and washing hands as necessary during the vaccination exercise. -Contribute 10% of the total cost of the vaccination sub project
Ministry of Interior and Coordination (Chiefs)	-Publicity -Monitor the Vaccination exercise -Reporting on any incidences and grievances which may require the attention of their Ministry.
MoH-CG	-Implementation and monitoring of COVID-19 guidelines -Sensitizing communities on Covid-19 control measures
County technical department of Veterinary Services	-Provide technical teams to undertake the vaccination exercise -Provide technical expertise -Ensure the vaccine cold chain is properly maintained -Prepare the program for the vaccination exercise -Procurement of vaccines and equipment -Reporting on progress, coverage, challenges and coping mechanisms -Participate in monitoring
NEMA	-Environmental safety -Supervise collection and safe disposal of waste -Reporting
GRM Committees	-Receive and handle all complaints and conflicts that may arise during the implementation process
County Government (Chief Officer)	-Release officers to participate in the vaccination exercise -Provide means of transport to enhance mobility of officers during the exercise -Publicity (ward administrators) -Participate in monitoring
KCSAP/ CPCU	-Coordination of the subproject activities -Ensure safeguard issues are taken care of in the implementation process -Monitoring the implementation process -Reporting -Undertake an impact assessment of the subproject
Social Services	-Identification and coordination of the vulnerable groups -Registration of groups -Capacity building on group dynamics -Monitoring and evaluation

There are many risks associated with the vaccination programme and they include environmental pollution, injury to livestock and Man, hypersensitivity and vaccines reaction. These will be communicated to the community during mobilization. The social risks will include injury from shrapnel and spread of COVID-19 owing to many people gathering in the vaccination site, these will be mitigated by proper disposal of shrapnel, and strict adherence to all COVID-19 containment measures. In order to mitigate all these associated risks, this PMP will be implemented, safety of crushes improved for proper restraint and antihistamine availed.

To effectively cover and reach the target animals good publicity and mobilization of the community to agree on dates and sites of vaccination will be undertaken.

3.2.2.1 Vaccine& equipment Procurement

This will be the responsibility of the Veterinary Directorate. The CDVS will initiate the procurement process with guidance from the CPCU. 24,000 doses of East Coast Fever (ECF) will be procured, with a total of 10,000 households benefiting from the projects that will cost a total of **Kshs. 50,912,200**. The county has adequate refrigerators and cool boxes that will be used to maintain cold chain during the vaccination exercise (See table 4).

Table 8: Vaccines, drugs, equipment& consumables

Item	Quantity
East Coast Fever Vaccination Kit	24,000 doses
Anti-histamines 100mls (vials)	100
Buparvaquone	500
Phenylbatuzone	100
20% Oxytetracycline	300
Catasol	100
Refreshment for monitoring team	8,500
Stationery	8,500
Posters and brochures	1,500
Livestock registration certificate	24,000
Ear tags-branded	24,000
Reactors management	380
Water and soap for observing the COVID containment measure and hygiene of service providers	Community contribution

3.3 VACCINATION PLAN

Since this exercise generally deals with vaccines and associated chemicals, they may be harmful to human life, animal life or the environment at large if mishandled. The effect may be even more pronounced if the exercise is extended for a period of time. There is also the issue of generation of potentially hazardous waste. Therefore, some safety guidelines should be adopted from the outset and instilled through briefings to the vaccination team. These guidelines are informed through the regulations governing them.

The county plans to carry out vaccinations against East Coast Fever disease in all the 30 wards in Uasin Gishu County. Five cattle dips have been selected per Sub County to participate in the program. The exercise will be carried out by Department of agriculture teams within 90 days. Before rolling out the vaccination exercise, there will be proper briefing to staff participating in the activity prior to its commencement. The staffs involved have undergone IPM safeguards sensitization and will wear protective gear during the period of vaccination. The vaccination equipment will be provided by the project and County Director of Veterinary Services, Uasin Gishu County.

The exercise will start with publicity in the first week preceding the exercise. During this time of COVID-19 pandemic when public gatherings are highly discouraged, publicity will be done using veterinary officers, administrates and placing of posters will be used to pass the intended information

on the proposed project. Fliers, text messages, telephone calls and banners will also be used to publicize the project and mobilize the community.

Gatherings would be in small groups of people who should comply with the following guidelines:

i. The number of people should not be more than 15,
ii. The attendees should keep a distance of 2m from each other,
iii. All in attendance should wear face masks,
iv. The venue should have clean running water and soap or alcohol-based hand sanitizers,
v. Temperature monitoring at entrance

The county public health department will be incorporated to ensure temperature checks are done accordingly to all participants besides complying with other COVID-19 regulations.

Some of the identified crushes in the county are not very well constructed, during the site visits, the farmers were advised to properly repair them to a usable condition for the vaccination exercise. The entire East Coast Fever disease vaccination exercise will take at least 90 days' all-inclusive publicity and actual vaccination process).

3.4 LOGISTICS & COLD CHAIN MANAGEMENT

The vaccine proposed for use against ECF will be sourced and collected from KEVEVAPI in batches that can be handled comfortably by the available refrigeration equipment in the County. This will ensure that there is minimal wastage of vaccines due to viability loss arising from temperature related causes.

The vaccine will be kept under subzero temperature under liquid nitrogen and the diluent is kept within a temperature range of between $+2^0$C and $+8^0$C. The antibiotics and antihelmintics will be kept under room temperature.

The Directorate of veterinary services will supervise the maintenance of the cold chain throughout the vaccination period.

A team comprising of eight (11) staff, including Public Health Officer, 3 drivers, 3 Veterinary Officers and 3 designated vehicles will be in-charge of cold chain supervision and distribution of additional ice blocks. Temperature monitors will be used on cooler boxes and freezers to ensure that recommended temperatures are maintained during transportation and storage of the vaccines. The Cold Chain team will be composed of officers from various departments (see table 5)

Table 9: Cold Chain Team

S/No	Responsible officer	Department
1	CDVS /Stores manager	Veterinary
2	Procurement officer	KCSAP
3	Sub-County Veterinary officers	Veterinary
4	Drivers	

3.4.1 DISPOSAL AND WASTE MANAGEMENT

Waste that are expected from the exercise include; Syringes and needles, drugs and vaccines and their containers. NEMA will oversee waste collection and disposal at the burning chambers in the County. Waste will be segregated and put in well labeled Biohazard bags and shrapnel containers which will be provided to the field teams and a schedule for collection given to them. The waste will then be deposited and incinerated at the County designated burning chambers in the Sub-counties. Officers who will form the waste Disposal team are listed in the Table below.

Table 10: The Waste Disposal team

Responsible officer	Department	ROLE
CDSO (County Disease Surveillance)	Veterinary	Ensure segregation of various wastes and placing them in well-labeled Biohazard bags
County Director- NEMA (Supervisor)	NEMA	Provide technical support and ensure environmental considerations are adhered to during the exercise,
M&E/CESSCO	KCSAP	Environmental and social safeguards support as per the World bank guidelines
Public Health Officer	Health	Oversee overall waste collection and disposal at the licensed incinerators
2 Drivers	Logistic Support	Safe transportation of wastes to disposal sites

3.4.2 COMPLIANCE WITH COVID-19 PROTOCOLS

All the farmers and all staff who will be taking part during the vaccination campaign shall be expected to observe the following measures;

- Encourage all persons within the vaccination areas to cover their cough or sneeze with a tissue. Throw all tissues in the trash after use.
- Maintain good hand hygiene by washing with running water and soap, or using an alcohol-based hand sanitizer, especially after coughing or sneezing.
- Avoid touching eyes, nose and mouth.
- Provide the means for appropriate hand cleansing readily available within the vaccination area.
- Use ideal means for hand cleansing including running water and soap. Paper towels and waste baskets should be made available.
- Frequently wash hands with soap and water, or use a hand sanitizer if hand washing with soap and water is not possible and hand sanitizers are available.
- Follow standard infection prevention precautions. These includes training staff in the control of infectious diseases, providing access to personal protective equipment and apparatus, and encouraging proper handwashing. Items that are often in contact with respiratory droplets and hands (e.g. doorknobs, faucets, etc.) should be cleaned and disinfected regularly.
- Clean all common areas within the vaccination areas routinely and immediately, when visibly soiled, with the cleaning agents normally used in these areas.

- Educational materials and information should be provided to farmers in a way that can be understood by non-English and non-Kiswahili speakers.

CHAPTER FOUR

4.1 POTENTIAL IMPACTS OF THE VACCINATION SUB PROJECT

The sub-project is in category B and has potential to cause harm both to the environment and the social aspect of human life hence it was subjected to screening so as to identify potential adverse impacts and propose necessary mitigation measures. Several partners were consulted during the screening exercise including County Veterinary staff, NEMA, Public Health staff and a few community members representing the beneficiaries (see section 2.3). Below are the potential positive and negative environmental and social impacts of the vaccination.

4.1.1 ANTICIPATED POSITIVE IMPACTS OF VACCINATION

Vaccination builds resilience as it improves animal health hence improved milk productivity. This will lead to increased availability of milk which will enhance household nutrition and income. Vaccination will also ensure stability of milk markets. The project will lead to reduced cost of production as farmers will not spend money on disease treatment which is a threat in absence of vaccination. This will lead to increased investment in dairy farming.

4.1.2 ANTICIPATED NEGATIVE ENVIRONMENTAL AND SOCIAL IMPACTS AND THEIR MITIGATION MEASURES

In line with World Bank Environmental and Social Safeguard Policies, an agricultural development project which uses agrochemicals in a wide scale such as this triggers **World Bank's Operational Policy OP 4.09** (Pest Management Plan-PMP).

The vaccination exercise will trigger OP 4.01 on Environmental Assessment because it is likely to introduce wastes into the environment mainly from empty vaccine bottles and damaged needles. The negative impact that would be caused by these wastes is minimal since they would be collected as soon as they are generated and disposed of safely as per NEMA directives. This PMP will be sufficient in addressing issues concerning negative impacts that may arise in the course of implementing the vaccination programme.

Environmental Risks

Veterinary waste around vaccination sites:

The vaccines that will be used are packaged in plastic straws from where the vaccine can be drawn using a needle without causing spillage of the vaccine. The vaccine will be mixed with a diluent in a plastic bottle. The animals will be injected using disposal plastic syringes and needles therefore reducing the chances of vaccine spillage.

Vaccination teams may throw or leave all waste in the field thereby affecting the aesthetic value of the environment. Waste generated during the exercise will comprise of empty plastic vaccine straws, plastic syringe, needles, plastic straws, antibiotic glass vials and anthelmintic plastic containers.

The empties might be collected and reused by the surrounding households which would pose risk to their health.

The disposal team will ensure that all wastes are collected at the vaccination site, sorted out, grouped and effectively disposed according to set waste disposal regulations by the public health officer. Bins will be procured to handle the different wastes.

Mitigation measures:

The disposal team will ensure that all the wastes are collected from the crush sites/vaccination sites, sorted, segregated and put into labeled disposal bins for transportation to incineration point at Regional Veterinary Investigative Laboratories Eldoret. Bins will be procured to handle the different wastes. These waste disposal containers shall be handled by licensed waste handlers.

Soil Contamination

The vaccination waste material might spill/left on the ground by the vaccination team might contaminate the soil.

Mitigation measures

Proper care will be taken by qualified personnel in delivering the vaccines to the animals to ensure there is no spillage on the ground and all the waste collected appropriately. To ensure this does not occur, the vaccination team would ensure they have put in place all mechanism of handling the material to prevent spillages. This will be achieved by ensuring that all the containers handling the drugs are tightly closed after picking a dose and empties will be put in disposing containers awaiting final disposal. After using the vials, they will be put safely into the disposing bag which will be delivered to Regional Veterinary Investigative Laboratories Eldoret for incineration.

Air Pollution

Livestock movement on ground with limited vegetation leads to dust emission. Some of the supportive drugs that would be used have the potential of polluting the air because they might produce vapor which will be blown by the wind to non-intended target.

Mitigation measures

To reduce air pollution due to dust emission is to minimize animal movements in the vaccination areas. Animals will be grouped in small numbers for vaccination; approximately 40 animals at ago. Arrangements will be made to vaccinate herds of more than 50 to be done at the individual farmer's homestead.

The vaccination personnel will use PPE to prevent inhalation. They will also be informed not to use it when there are strong winds. They will also be advised to follow the guidelines provided in the package.

Surface and ground water contamination

Rainwater surface runoff may transport veterinary drugs and vaccines as well as other wastes from vaccination exercise to streams, rivers, and other surface-water bodies. Groundwater contamination may also occur from veterinary drugs and pesticide residue in surface water, such as drainages and streams. There are four major routes through which veterinary drugs reach the water: they may drift outside of the intended area when sprayed, may percolate or leach through soil, may be carried to the water as runoff, or may be spilled.

Mitigation measures

Proper care will be taken by qualified personnel in delivering the vaccines to the animals, thereby effectively preventing spillage on the surface and ground water. Crushes will be placed strategically to avoid marshy and those areas with stagnant water or run-offs.

Harm to Non-target Species

The environmental impact of veterinary drugs consists of the effects of pesticides on non-target species. Runoff can carry veterinary wastes into aquatic environments while wind can carry them to other fields, grazing areas, human settlements and undeveloped areas, potentially affecting other species. Other problems emerge from poor transport and storage practices. Over time, repeated application increases pest resistance, while its effects on other species can facilitate the pest's resurgence.

Mitigation measures

The project officers will ensure that vaccine and other support veterinary drugs will only be administered to target animals (cattle) hence no harm to non-target species. Proper storage and disposal of wastes will also be adhered to.

Social Risks

Non availing of Livestock

This is due to some social factors in the community. Failure by some farmers to take their cattle for vaccination due to fear of the animals being infested by ticks, worms or being mounted by bulls from other herds and because they own smaller herd compared to others, cultural factors that may hinder this vaccination, social and/or professional misconduct (unruly behavior, drunkenness) by the vaccination team that may lead to the community attacking the Officer. Members of some marginalized communities (including IP community) may fail to avail their animals for the vaccination due to cultural factors that prohibits their animals to mix with animals from other communities for fear that milk production will drop. This might affect the impact of the activity because some livestock and beneficiaries might be left out.

These marginalized groups have been identified and sensitized on the importance of the vaccination. In addition, vaccination of their livestock at their preferred points has been considered as an option. Social and/or professional misconduct like unruly behavior, drunkenness, under dosing of vaccines without the knowledge of the farmers by the vaccination team, which is NOT anticipated since a well experienced and credible service provider shall be chosen, mishandling of grievances/complaints arising out of the vaccination are some of the social risks foreseen with this sub-project.

Mitigation measures

- The staff will be encouraged to carry out the vaccination for those farmers with these cultural fears at the farmer’s individual homestead.

- Proper publicity and mobilization of the community to agree on dates and sites of vaccination will be undertaken and a team of seven members headed by CPC is already in place as county grievances redress committee to handle complaints/ grievances received from communities before, during and after vaccination campaign.
- Farmers who do not want their animals to mix with other herds will have their animals vaccinated on their farms. Vulnerable and Marginalized Groups including the aged, the widows, the disabled, youth, women and HIV/AIDS infected will also be identified and purposively targeted in the exercise by constructing crushes within their neighborhood.
- Close monitoring of the batch numbers given out and accounted for at the end of the day during vaccination period. In this, the number of animals captured in the day report to tally with the volume of vaccine utilized.
- The County GRM committee to be on close contact with the various Dip GRM committees.

Health & Safety

Some of the safety and health concerns include inhalation of dust, pricks, accidental self-jabbing or through skin exposure by direct contact with the vaccine associated with the vaccination exercise. Consumption of livestock products such as meat and milk from the vaccinated animals before the elapse of the chemical residual period may cause human health problems both within and outside the project area as the products may as well be sold by the beneficiaries. To reduce health and safety impacts,

Mitigation measures

- This will be mitigated through proper sensitization and also protective clothing. PPEs will be used by all the vaccinators, therefore minimizing cases of injury and exposure to the vaccines and antibiotics. The supervisors will ensure proper sensitization of the community on potential exposure risk and mitigation measures, as well as ensure that children are kept away from vaccination crush sites.
- The vaccination team will create awareness of the vaccination exercise and the side effect of such during the publicity barazas. They will inform the beneficiaries on when it will be safe to consume animal products after the vaccination.
- Injury of the vaccination team by the animals, this will be mitigated through proper restraining of the animals in crushes; worn out crushes will be repaired and new ones constructed in areas without. In addition, provision of first aid kits in case of injury.

Risk of increased spread of COVID-19

Spread of COVID-19 may increase during the vaccination exercise as farmers, herders, vaccinators, drivers, health officers and other staff monitoring the exercise congregate at the vaccination site.

Mitigation measures

- Starting the vaccination exercise early enough in the morning so that there is no building up of large herds of animals or crowds of people.

- Discourage big numbers of animal handlers. Manage to a practical minimum the number of animal handlers bringing animals to vaccination sites
- Strictly following the guidelines of the Ministry of Health of social distancing, wearing of face masks, washing hands with running water and soap or use of alcohol-based sanitizer and social distancing.

Potential Site-related Health Concerns

Consumption of animals under chemical pest control could cause health hazards to humans and animals within and around the project site. Certain kinds of chemical intoxication especially after drinking pesticide-contaminated water are a medium to high likelihood. This is a crucial potential impact considering that most of the locals get drinking water from surface and groundwater sources. Skin, eye, and nose irritation due to exposure to the pesticides and vaccines.

Mitigation measures

- Safe handling and disposal of all waste during the vaccination will be observed.
- Wearing of PPE during the exercise will be adhered to by the vaccination teams.
- Livestock owners to be sensitized on withdrawal periods

Impacts on community livelihood

Households engaged in vaccination activity will not sell or consume milk for seventy-two hours depriving them an income during vaccination period.

Mitigation measures

- This is a temporary impact that will be mitigated through sensitization of the affected farmers to have alternative source of income during vaccination activity.

CHAPTER FIVE

5.0 PEST MANAGEMENT PLAN

Pest Management Plan is a tool used to ensure undue or reasonably avoidable adverse impacts of the project implementation are prevented and that the positive benefits of the project are enhanced. During the implementation of the livestock vaccination project at various stages various mechanisms and activities, safeguards and controls will be put in place to ensure that the beneficiaries both the animals and humans receives the potentially maximum utility from the planned vaccination exercise (**See Table 11 below**).

TABLE 11: PEST MANAGEMENT PLAN - EAST COAST FEVER

Impact Issue/Risk	Mitigation	Inputs	Responsible Person	Monitoring / Verifiable Indicators	Estimated Cost (Kshs)
AT PROCUREMENT					
-Packaging of the wrong vaccine, insufficient diluent	-A team with S-12 will be responsible for confirming the packaging, the expiry date and amounts	-Night outs for the persons, vehicle, fuel	CDVS CDSO	-Number of properly packaged, non-expired vaccines procured. -Number of qualified personnel involved in procurement of the vaccines -Number of accidents witnessed -Number of vials damaged -Number of temperature monitors available -Number of letters sent, -Number of SMS sent, -Dispatch notes of the consignment -Number of emails sent, -Number of phone calls made. -Presence of monitoring indicators	15,000,000
-Packaging of poor-quality vaccines	-Checklist, check the expiry dates and quantities of the drugs.	-S12 and any other relevant documents			
-Unqualified personnel collecting the vaccines.	-Qualified vet personnel to collect the vaccines.				
-Accidents	-Use well trained drivers		CDVS CDSO		
-Leakages, less volumes and lack of labels.	-Verification at dispatch of vaccine. -Officer collecting the vaccines should be a technical staff	-Personnel	CDVS CDSO		
-Absence of temperature monitors during transit	-Use temperature monitor	-Temperature monitors	CDVS CDSO		
-Lack of communication and proper arrangement for vaccine collection and transport	-Timely arrangement with vaccines supplier and communication with supplier and destination	-Airtime and data bundles	CDVS CDSO		
ON TRANSIT FROM KEVEVAPI TO COLD STORE- UASIN GISHU					
-Poorly maintained and serviced vehicle	-Use of hardtop carrier and reliable well maintained and serviced vehicle, Rescue vehicle in case of breakdown.	-Fuel	CPC CDVS	-Amount of fuel used. -Number of well-maintained vehicles available	35,000

-Unnecessary police check and stoppage	-Provision of labeled stickers urgent, don't delay on the cool boxes and vehicle.	-Emergency stickers.	CPC CDVS	-Number of vehicles with Emergency stickers -Number of freezers procured -Number of vehicles specifically assigned vaccination duty only -Number of cool boxes delivered in time -Number of temperature monitors installed in the cool boxes	
-Inadequate storage facilities (freezer, plastic tubing)	-Purchase of more freezers and plastic tubing	-Funds	CPC CDVS		
-Diversion of the co-duty.	-Work ticket should be specific. -Avoid double duty	-Car tracker	CPC CDVS		
-Using of inappropriate tools to transport vaccines (boxes) cartons, instead of cool boxes	-Ensure the vehicle carries cool boxes with ice packs	-Cool boxes, icepacks and motorized cool boxes	M&E CDSO		
-Lack of gadgets to monitor vaccines temperatures	-Transport and storage -Temperature monitors to be in the cool boxes and fridges.	-Temperature monitors	M&E CDSO		
IN CDVS COLD STORE					
-Inadequate staff at the store to offload and count the vaccine	-Staff mobilization in good time both casuals and regulars.	-Personnel	M&E CDSO	-Number of both skilled and unskilled personnel deployed to the exercise -Number of firefighting equipment available -Store space available for storage of vaccines -Number of automatic standby generators available -Volume of emergency ice cubes available, -Number of fridges available,	75,000
-Lack of firefighting equipment -Inadequate store space & equipment	-Ensuring proper firefighting facilities are available, -Well ventilated space & equipment	-Firefighting equipment -Adequate store	CDVS CDSO		
-Power disconnection and blackout	-Timely payment of electricity bills	-Automatic standby generator.	CDVS CDSO		
-Failing of Cooling system	-Ready ice cube for emergency, well-maintained fridges, training of technical staff on basic maintenance of fridges and provision of fridge guards.	-Funds, personnel	CDVS CDSO		

-Danger of infection from some vaccines while handling by the officers.	-Knowledge of proper handling of vaccines and management of contamination	-Funds for training for staff -Provision of PPE	CDVS CDSO	-Number of technicians trained and available for the exercise. -Number of contamination incidences, -Number of staff trained in handling vaccinations, -Number of PPEs available, developed protocols on management of vaccinations, -Number of water-proof stickers available, -Amount of dry ice available, -Number of temperature tracking sheets developed, -Number of disposal receptacles available, -Amount of clean water and soap available	
-Faulty deep freezer / fridges	-Frequent checks of the freezers and fridges -Have a backup freezer	-A developed check list -Funds for repairs	CDVS CDSO		
-Inadequate adherence to the protocol of acquisition of vaccines from the stores	-All officers including VO should be sensitized on the need to follow the protocols	-Memo produced and circulated to all relevant persons	CO CDVS		
-Inadequate labeling especially of vaccines returned from the field	-The VO from the field should clearly inform the cold chain manager of the vaccines , the batch numbers and expiry dates of the vaccines returning from the field before receiving them for storage	-Water proof stickers clearly labeled with the details of vaccine details	Team Leaders		
-Inadequate cold chain materials	-Procure enough polythene tubing for making ice packs Or alternatively dry ice	-Polythene tubing -Dry ice/frozen carbon dioxide	CDSO Store man		
-Inadequate monitoring of temperature	-Regular monitoring of the temperature of the freezers using a temperature tracking sheet and a thermometer	-Temperature tracing sheet. -Thermometers	CDSO Store man		
-Bio safety problems	-Provision of Personal protective clothing to the store man	-PPEs	CDVS		
	-Provision of clean water at the store Receptacles for disposal	-Water supply tank -Receptacles for waste			
TRANSIT TO THE VACCINATION SITES					
-Inadequate/ missing vaccination	-Ensure availability of extra equipment	Funds for extra equipment	CPC CDVS	-Number of planning meetings held,	550,000

equipment	-Confirm availability of all equipment via checklist during loading			-Number of vaccination equipment available, -Number of vaccination equipment to be procured -Number of checklists developed, -Duty Roster prepared -Number of PPEs available, -Number of PPEs to be procured.	
-Failure to collect essential equipment	-Prepare a detailed checklist -Assign task to specific officer to tick the checklist during loading	-Detailed checklist	Team Leader		
-Inadequate vaccination equipment	-Proper planning between CPC and CDVS to procure all required equipment prior to start of vaccination	-Joint planning meetings	CPC CDVS		
	-Forgetting some vaccination equipment and vaccines	-Detailed procurement list -Vaccines -Disposable syringes -Vaccine diluents -Cool boxes -Ice packs -PPE (overalls, masks, gumboots & gloves) -Disposal equipment (sharp containers, biohazard bags) -Surgical spirit -Cotton wool -Stationaries (pens, books & vaccination manifests).	Team leaders		
ACTUAL VACCINATION					
-Mechanical breakdown during vaccination (including punctures and tyre bursts) mobile pressure machines -Driver to ensure spare tyre is in good condition	-Provision for stand by vehicle (if available)	-Vehicle Funds	CPC CDVS	-Number of standby vehicles available for the exercise -Number of hired private practitioners, -Allowances allocated for hiring the private practitioners	1,562,000

-Muddy roads rendering impassible	-Use of off road 4x4 vehicles during the exercise	-4x4 vehicle availability	CPC CDVS	-Number of animals vaccinated at home, -Total number of animals vaccinated, -Number of vehicles & personnel assigned the work on home vaccination -Number of First Aid Kits available, -Number of injury incidents reported -Number of 4x4 vehicles provided -Number of radio announcements, newspaper adverts, SMS and posters made. -Number of grievances raised and resolved. -Batch number of vaccines accounted for	
-Inadequate vaccination personnel ie due to staff shortage, sickness/ emergency commitment	-Have standby personnel -Co-opt from private practitioners	-Provide for field allowance for the personnel	SCVO		
-Animals unable to visit vaccination crushes due to Pregnancy or high intensive zero grazing system	-Carry out farm visits	-Provide vehicles	Vaccination team leaders		
-Accidents/ injuries	-Provide first aid kits	-Kits	CDVS		
-Professional misconduct by the vaccination team	-Monitoring of the batch numbers given out -Day report on the vaccination	-Personnel -	CDVS		330,000
-Animals not being availed for vaccination due to cultural factors.	-Carryout adequate publicity -Vaccinating at farmer's homestead	-Publicize through electronic and print media and through SMS	CPC CDVS		
SOCIAL ISSUES DURING THE ACTUAL VACCINATION					
-Contraction of COVID-19 by staff during procurement and transportation of vaccines, and during publicity	-Provide double-cab vehicles carrying only two staff to ensure social distance, -Staff and driver to wear face mask, -Vehicle to be equipped with alcohol-based sanitizer.	-Double-cab vehicles, -Face masks, -Alcohol based sanitizers.	CDVS	-Number of Double Cab vehicles available, -Number of face masks, soap and sanitizers procured, -Amount of clean running water availed,	150,000

-Contraction of COVID-19 during the actual vaccination process	-Provide water, soap, sanitizers and temperature guns. -All persons to wear masks, -Animals to be vaccinated as soon as they arrive at the vaccination site, -Check the temperature of all participating in the vaccination exercise each day.	-Face masks -Alcohol based sanitizers -Clean running water. -Soap -Temperature guns	CPC CDVS Director Public Health	-Number of people whose temperature is checked -Number of adverts and posters placed on strategic sites -Number of publicities done in all the selected vaccination sites and number of farmers attended -Number of identified VMGs in the project site -Number of animals belonging to VMGs vaccinated at their own sites	
-Some farmers fear to avail their livestock for vaccination for fear of ticks and worms or being mounted by bulls from other herds	-Proper publicity and mobilization to agree on dates and channels of handling grievances	-Publicize through electronic and print media and through SMS	CPC CDVS		20,000
-Cultural beliefs among the VMGs that prohibit mixing of livestock with other herds may hinder the exercise	-Identify and arrange to vaccinate such livestock at the agreed place and at the convenience of the affected VMGs	-Publicize through electronic and print media and through SMS	CPC CDVS		25,000

Table 12: Implementation schedule

ACTIVITY	SCHEDULED TIME															
	SEPTEMBER 2021															
	WEEK 1				WEEK 2				WEEK 3				WEEK 4			
Preparation of PMP (proposal writing & review)																
Holding planning meetings																
Procurement of ECF vaccines- ordering and preparation																
Zoning and mapping of crushes, farmer identification																
Livestock identification &Tagging																
Identification and repair of vehicles to be used																
Carrying out publicity& farmer sensitization																
Presentation of the PMP to NTAC; revision; forwarding to WB for clearance																
Collection of vaccines from KEVAVAPI by CDVS																
Collection of vaccines from CDVS stores and distribution to vaccination sites																
Carrying out the Vaccination exercise																
Carrying out Post Immunization follow up																
Monitoring and evaluation of the vaccination process																

CHAPTER SIX

6.0 MONITORING AND REPORTING

6.1 MONITORING

Monitoring will be a continuous exercise throughout the implementation process (as depicted in table 8). It will be participatory by CTAC representative, CDVS, public health personnel, M&E, CPCU & CPSC representatives and two drivers. The team will oversee implementation at community level by visiting vaccination teams and meeting community development committees (CDDCs) who will be overseeing the exercise. The monitoring team will address technical, environmental, social and welfare issues during the exercise.

The CTAC and CPSC responsibility will be to ensure that the implementation process would be done as per the proposal that was approved during their sittings. They would also provide Technical advice to the implementers to enable them achieve their objectives.

The CPCU together with CTDs Subject Matter Specialists will carry out a Monitoring and backstopping visits and advise accordingly on matters of compliances in relation the EMP.

The Public Health Officer and NEMA Country Director will ensure that waste handling will be done in a safely to prevent pollution and contamination of the environment

The Public Health Officer will also ensure COVID-19 guidelines will be followed to the letter to prevent it from spreading

6.2 GRIEVANCE REDRESS MECHANISM

Grievances will be handled at three levels; 1. The community level, 2. County level and 3. The National level. The community level GRM committee will comprise of five members from each of the vaccination areas. The committee shall be headed by a chairperson and will comprise of Persons Living with Disability (PLWD), indigenous people representative youth, elderly and a female from female headed households. The area chief will work with the committee and provide all the necessary support needed by the committee in resolving the grievances/complaints by the locals. The committee members will be proposed and selected by the locals from among themselves. The committee will receive and record complains in the complaints register (Log register)**.** Depending on the nature and weight of the committee will resolve the complaints and give feedback/resolution to the complainant. Community will also be informed about the establishment of county grievances redress committee and their contact details revealed during consultation. In case the committee fails to reach a resolution on the complaint, the committee will escalate to the County level GRM committee. The county level GRM will be chaired the County Project Coordinator (CPC).

Complaints/grievances received from communities before, during and after vaccination campaign will be channeled to the CDVS and County Environment and Social Safeguards Compliance Officer (CESSCO)for redress and if the grievances are not resolved at this level they will then be escalated to County Grievance Redress Committee. The community will be given the contacts of the CDVS to forward their complaints and compliments. A Grievance log register for the sub project will be opened at the county level to launch all complaints.

6.3 REPORTING

During the preparation and actual vaccination exercise, the following reports will be generated. The reports will include information on: livestock vaccination manifest detailing the Ward, Sub location, Crush site, Names of farmer, Number of cattle vaccinated and photographs during the exercise (**See Table 9).**

Table 13: Reports to be generated

Report Type	**Frequency**	**Responsible**
Vaccine procurement	Once	CDVS/CPC/Procurement Officer
Publicity report	Once	CDVS/SCVO/M&E KCSAP
Cold Chain Management	Once	CDVS/SCVO
Daily vaccination report	Daily	CDVS/SCVO
Monitoring report	Once	CDVS/M&E KCSAP
Safeguard report	Once	CESSCO/NEMA/CDVS
Waste disposal report	Once	NEMA/CDVS/CESSCO
Knowledge management	Once	CPCU-M&E
Overall vaccination report	Once	CDVS/ CPCU-M&E
COVID-19 Containment report	Once	County Director of public Health

7.0 CONCLUSION

After subjecting the proposed project to the screening exercise, it was found out that the proposed vaccination sub-project is socially, environmentally and technically feasible but has minimum adverse environmental and social impact during the implementation process. These negative impacts will be avoided or minimized through the proposed mitigation measures. Furthermore, a pest management plan is in place as a mitigation measure against all threats that may be posed by the vaccination exercise. On the other hand, the positive impacts are socio-economic and contribute greatly towards increasing livestock productivity through disease controls, adaptation and resilience to climate change and reduced greenhouse gas emissions. In addition, if the proponent and the community undertake the necessary measures to mitigate the few negative impacts as identified in this PMP, then there should be no reason to prevent the project from proceeding on as planned.

ANNEXES

1. NOTIFIABLE DISEASES REPORTED IN KENYA IN THE LAST 10 YEARS
2. SUB-PROJECT PROPOSAL
3. TERMS OF REFRENCE
4. STAKEHOLDER ATTENDANCE LIST
5. SAMPLED PUBLIC ENGAGEMENT RESPONDENT QUESTIONNAIRE
6. VACCINE COLLECTION CHECKLIST

ANNEX 1. NOTIFIABLE DISEASES REPORTED IN KENYA IN THE LAST 10 YEARS

Foot and Mouth Disease	Anthrax
Lumpy Skin Disease	East Coast Fever
Surra and Trypanosomiasis	Contagious Caprine Pleuro Pneumonia
Brucellosis	Sheep pox and goat pox
Contagious Bovine Pleuro Pneumonia	Johnes Disease
Sheep scab	Heart water
African Swine Fever	Rabies
Rift Valley Fever	Bacillary White Diarrhoea
Tuberculosis	Peste des Petits Ruminants

ANNEX 2: SUB-PROJECT PROPOSAL

UASIN GISHU COUNTY ECF PROJECT PROPOSAL

EAST COAST FEVER DISEASE VACCINATION FOR ENHANCED DAIRY DEVELOPMENT

1.0 INTRODUCTION

1.1 Background Information

In Sub-Saharan Africa especially Kenya, climate change is projected to have a negative impact on smallholder livestock production systems, which play an important role in the livelihoods of rural communities (Thornton et al., 2009).

While the dairy sub-sector, is associated negative environmental impacts, it represents about 6-8% of Kenya's GDPS (KDB 2012) with over 4.3 million heads of dairy cattle. It also contributes over 80% of the total milk production through small holder farming units and provide subsistence for more than one million low-income household (Odero-Waitituh & J. A., 2017).

In Uasin Gishu County of Kenya the rapidly declining household land sizes has let to increased intensification in smallholder dairy production. Currently almost 90% of urban and peri-urban dairy farmers practise intensive and semi intensive dairy production system of farming. With this regard optimum utilization of resources to maximize on production is a pre-requisite measure.

Animal disease is a critical setback in dairy performance in the livestock sector, of highest importance is East Coast Fever disease; a tick born disease that has the highest prevalence and mortality rates in sub-Sahara Africa.

Dairy farmers in Uasin Gishu, lose close to **Kshs 1.5 billion** annually in management of tick born diseases. While the county government has spent over **Kshs 145 million** in the last 5 years in tick control strategy through subsidy on dipping expenses the farmers spend over **Kshs 300 million** annually to dip their animals besides further losses associated with animal mortalities, slow growth rates, treatment expenditure and milk production losses.

The ECF immunization concept arose from observations of naturally acquired immunity and involves an elaborate infection-and-treatment strategy (ITM). The immunity lasts up to three years in the absence of further tick infestations but is life-long if infected ticks continue to challenge the immunized animal regularly.

This sub-project therefore seeks to vaccinate dairy animals in Uasin Gishu County as a novel approach to addressing dairy production challenges.

1.2 General Objective

To enhance the dairy health and production performance through vaccination against East coast fever disease.

Specific objectives

1. To vaccinated 24,000 dairy animals against East coast fever disease in Uasin Gishu County
2. To register the vaccinated dairy animals with Kenya studbook in order to have a dairy animals database for Uasin Gishu farmers.

1.3 Justification

Undertaking ECF vaccination will provide lifelong immunity against the disease to 24,000 dairy cows at an estimated cost of **Kshs. 38.5 million**. In this case each animal will be vaccinated at an average cost of Kshs. 1,250. This charges are significantly low compared to the expenses

incurred by the farmer in undertaking regular dipping and treatments where the average charges per E.C.F treatment costs **Kshs. 5,000** with no guarantee of recovery post treatment while immunization which imparts the animal with lifelong immunity costs **Kshs. 1,000**. Reduced dipping expenses attributed to reduced dipping/spraying frequency- dipping cost will be cut from the current average of **Kshs. 24.9 million** per year to **Kshs. 12.5 million** annually. This amounts to 50% drop. Milk losses/ production loss, reduced calf growth rate, and mortality losses account for the largest share of losses. A cow infected will hardly peak in production. Uasin Gishu farmers lose close to **Kshs.1.5 billion** in production loss from dairy due to E.C.F disease.

Prevalence of the disease is at 63% for animals below 18 months. With case fatality rate of 100% if no treatment is administered. It is estimated to cost farmers **Kshs. 72 million** per year in treatment expenses at the current market rate of **Kshs. 5,000** per cow.

The economic analyses demonstrate the value of integrated control in which ECF immunization is practiced is always a necessary component with a payback period of less than 1 year.

The sub project targets 10,000 households with at least 5 members per family. At least 30% of the beneficiaries will be vulnerable and marginalized groups (VMG). Indirect beneficiaries are targeted at over 50,000.

2.0 IMPLEMENTATION FRAMEWORK

150 Cattle dips will be selected across Uasin Gishu County, using a pre-determined criterion. This will be comprised of 5 dips selected in each of the 30 wards in the county. This project targets to vaccinate 24,000 dairy cows, where 3 dairy cows, meeting a set-criterion, will be recruited from each farmer. A total of 10,000 households across the county are expected to benefit from the project.

The selection and recruitment of the dips, farmers and the dairy cows will be carried out by the county veterinary technical team in collaboration with county ward administration leaders (Ward admin, dip management committee, village elders and social workers). ECF vaccination will be carried out by technical professionals in the drug supplying organization and the trained vets in the department of veterinary services.

2.1 Selection Criteria

2.1.1 Dip Selection Criteria

1. Must have a valid registration certificate from the social services department
2. Must be operational with an active bank account
3. Weekly dipping records must be provided
4. Must demonstrate willingness to participate in the project
5. Must not be selected from within the same geographical area within the ward
6. Must demonstrate good management

2.1.2 Cow selection criteria

- It must be at least three months old and not exceeding 6 years
- If in calf, the pregnancy should not exceed 7months
- Bulls will not be vaccinated
- Priority will be given to cows of good dairy characteristics

2.1.3 Farmer selection criteria

- Must be an active member of the selected dip
- Must be willing to participate in the project
- Youth, women, and people living with disability will be prioritized

2.2 Vaccination strategy

The animals will be immunized using infection and treatment method (ITM). The ECF kit will consist of:

-MUGUGA cocktail vaccine because of its efficacy in this region which ranges between 95 and 100%.

-Antibiotic-30% oxytetracycline

-10% Albendazole

-Anti histamines for post immunization reactions

-ECF branded ear tags

-Assorted drug administration materials; syringes, needles and gloves

The standard procedure as provided by the vaccine production and administration guideline will be adhered to.

The vaccine will be administered by the service provider and the county veterinary technical team

Post immunization drug reaction will be monitored, for a period of one month by the service provider and the county veterinary technical team

3.0 EXPERTISE

1. Description of service: Supply and delivery of East Coast Fever Vaccine Services within the identified project sites across Uasin Gishu County. The service provider shall work in collaboration with county veterinary technical team in areas of publicity and farmer sensitization, dairy cow selection and recruitment, and vaccine administration.

2. Vaccine description: East Coast Fever Muguga cocktail vaccine (20/40 doses MCL ECF 001)

3. Number of animals to be vaccinated: Vaccination of 26,600 dairy cattle within the identified service sites in Uasin Gishu County

4. Mandatory requirements

i. KRA clearance certificate

ii. Audited bank accounts

iii. Bid bonds

iv. Business permit

v. Registration with Veterinary Medicine Directorate (VMD)

5. Technical Service Provider Requirements

Provide the Curriculum vitae (CV) and Kenya Veterinary Board (KVB) current registration certificate details for the technical lead and four other trained and certified ECF Vaccinators

A prove of ECF Vaccination certificate will be a n added advantage.

1. Demonstrate financial and technical ability to complete the vaccination in the service sites by providing proof of the following

- Equipment including liquid nitrogen containers, serialized ear tags, vehicles, thermometers, temperature monitors, thermos flasks and cool boxes
- Inputs-Antibiotics/ syringes, disposable needles, vacutainer tubes, cotton wool, gloves, vaccine diluents, masks, gumboots, sanitizers and stationery including, ECF Vaccination certificates
- Vaccine Source-Proof of registered vaccine source
- Monitoring and supervision-proof of previous work in any part of the country and ability to manage reactors
- Registration certificate including-KRA, Business permits, KVB, and VMD licenses

2. Demonstrate understating of the county and the six sub counties: Kesses, Moiben, Ainabkoi, Soy, Turbo and Kapseret.

3. COVID-19 Certificate-Provide COVID-19 free certifications before and during the course of the vaccinations

4. Provide any other proof/documentation/activity/contribution relevant to the success of the program

5. Provide details of the unit and total costs of the vaccines/inputs, equipment and labor

4.0 REPORTING TEMPLATE

SITE REPORT

DATE……Sub County……

Ward……Name of Dip……

No. of farmers served…….

No. of animals vaccinated……

Vaccination site…….

Vaccine Batch number used……

Any adverse effects:

i…….

ii……...

iii……...

Attachments:

1. Farmer attendance lists
2. Photographs of the activities undertaken captured.

Daily Progress Reports should be submitted by Close of Business to the County Director of Veterinary Services and copied to the KCSAP Coordinator.

5.0 ACTIVITY BASED BUDGET

Comments	Objective	Output	Activity			IDA Kshs.	COUNTY Kshs.	FARMER Kshs.	TOTAL Kshs.
			Procurement of ECF vaccine & kit						
Sub Activity	**Unit**	**Qty**	**Unit cost**	**Budget**	**Description**				
Procurement of ECF vaccine Kit	No. of kits	24000	1250	30,000,000	Includes procurement and delivery of service	30,000,000			30,000,000
Procurement of ECF vaccine Kit	No. of kits	6400	1250	8,000,000		-	8,000,000		
Procurement of Anti histamines	No. of 100ml bottles	100	800	80,000		80,000			80,000
Procurement of Buparvaquone	No. of 50ml bottles	500	1500	750,000		750,000			750,000
Phenylbutazone	No. of 100ml bottles	100	950	95,000		95,000			95,000
20% oxytetracycline	No. of 100ml bottles	300	500	150,000		150,000			150,000
Catasol	No. of 100ml bottles	100	2000	200,000		200,000			200,000
				33,875,000		**31,275,000**	**8,000,000**		**33,875,000**
Comments	**Objective**	**Output**	**Activity**						

	To enhance dairy productivity and ECF disease tolerance	8000 households identified; 24,000 dairy cows recruited	Dip, Farmer identification and dairy cows recruitment						
Sub Activity	**Unit**	**Qty**	**Unit cost**	**Budget**	**Description**				
Monitoring and Supervision team	No.	90	16,80	151,200			151,200		-
SUB TOTAL				**151,200**			**151,200**		**151,200**
Comments	**Objective**	**Output**	**Activity**						
		No. of farmers sensitized	**Farmer sensitization and publicity**						
Sub Activity	**Unit**	**Qty**	**Unit cost**	**Budget**	**Description**				
Farmer sensitization	No.	900	1,680	1,512,000	150 dips x 2trainings x 2staff	-	1,512,000	-	-
Supervision team	No.	90	1,680	151,200		-	151,200	-	-
Refreshment	No.	8,500	100	850,000			850,000		
Stationery	No.	8,500	100	850,000			850,000		
Posters & brochures	No.	1,500	500	750,000			750,000		-
SUB TOTAL				**4,113,200**			**4,113,000**		**4,113,200**
Comments	**Objective**	**Output**	**Activity**						
			Livestock registration with Kenya Stud Book						
Sub Activity	**Unit**	**Qty**	**Unit cost**	**Budget**	**Description**				

Livestock registration certificate cost		24,000	250	6,000,000				6,000,000	6,000,000
Ear tags		24,000	250	6,000,000				6,000,000	6,000,000
SUB TOTAL				**12,000,000**				**12,000,000**	**12,000,000**
	Objective	**Output**	**Activity**						
			Post Immunization follow up						
Sub Activity	**Unit**	**Qty**	**Unit cost**	**Budget**	**Description**				
Reactors management	No.	380	1,680	638,400	30 days x 1680 x 10personnel		638,400	-	-
Supervision	No.	80	1,680	134,400	10days x 8staff x 1680		134,400	-	-
SUB TOTAL				**772,800**			**772,800**		**772,800**
TOTAL						**31,275,000**	**7,637,200**	**12,000,000**	**50,912,200**

6.0WORK PLAN

	APRIL 2021				**MAY 2021**				**JUNE 2021**				**JULY 2021**				**AUG 2021**
ACTIVITY	**WK 1**	**WK 2**	**WK 3**	**WK4**	**WK 1**	**WK 2**	**WK 3**	**WK4**	**WK 1**	**WK 2**	**WK 3**	**WK4**	**WK 1**	**WK 2**	**WK 3**	**WK4**	
Proposal writing & review																	
Planning meetings																	
Procurement of ECF vaccine Kit																	
Dip, Farmer identification & dairy cows recruitment																	

Farmer sensitization and publicity																	
Livestock & Tagging																	
Immunization/ vaccination exercise																	
Post Immunization follow up																	
Monitoring and Evaluation																	

ANNEX 3: TERMS OF REFRENCE

REPUBLIC OF KENYA

COUNTY GOVERNMENT OF UASIN GISHU
(County Department of Veterinary)

SUB PROJECT TERMS OF REFERENCE

1. Background	Dairy farmers in Uasin Gishu, loose close to Kshs. 1.5 billion annually in management of tick borne diseases. While the county government has spent over Kshs. 145 million in the last 5 years in tick control strategy through subsidy on dipping expenses, the farmers spend over Kshs. 300 million annually to dip their animals besides further losses associated with animal mortalities, slow growth rates, treatment expenditure and milk production losses. The ECF immunization sub project arose from observations of naturally acquired immunity and involves an elaborate infection-and-treatment strategy (ITM). The immunity lasts up to three years in the absence of further tick infestations but is life-long if infected ticks continue to challenge the immunized animal regularly. This sub-project therefore seeks to vaccinate dairy cows in Uasin Gishu County as a novel approach to addressing dairy production challenges. ECF Vaccination sub project funded by world bank through Kenya Climate Smart Agriculture (KCSAP) is set to be rolled out in selected dips across Uasin Gishu county. The sub project targets to vaccinate 24,000 dairy cows across the county. The Stakeholders in this sub project will include; (i) dairy farmers from who will provide dairy cows, labour and dairy cows management (ii) The County Government of Uasin Gishu and KCSAP for financial and staff support (iii) County Veterinary professionals who will administer the vaccine (iv.) vaccine suppliers-supply of ECF vaccination kit and delivery of vaccination services (v.) Agrovets-Antibiotic supply (vi.) cattle dips, dairy cooperatives and other value chain actors.
2. Objectives	Generally, this sub-project aims to enhance the dairy health and production performance through vaccination against East Coast Fever disease. This sub project will reduce the cost of production by eliminating treatment expenses, reduced dipping expenses, and eliminate milk production loss during disease latency period and milk disposal during treatment period. Animal losses to ECF related causes will be reduced, de-worming and ear tagging that is concurrently done during the vaccination process will enhance animal health performance, animal identification and ease of tracking.
3. Methodology	150 Cattle dips have been selected across Uasin Gishu County comprising of 5 dips in each of the wards. Vaccination strategy. The animals will be immunized using Infection and treatment method (ITM). The ECF kit will consist of: i.) Muguga cocktail vaccine ii.) Antibiotic-30% oxytetracycline iii.)10% Albendazole iv.) Anti histamines for post immunization reactions v.) ECF branded ear tags

	vi.) Assorted drug administration materials; syringes, needles, gloves etc The standard procedure as provided by the vaccine production and administration guideline will be adhered to. The vaccine will be administered by the service provider and the county veterinary technical team. Waste management shall be done in accordance with NEMA provisions. Public health concerns on animal products use will be advised in accordance with the Public Health Act provisions and manufacturer's instructions. Post immunization drug reaction will be monitored, for a period of one month by the service provider and the county veterinary technical team. All COVID-19 containment measures shall be adhered to according to MOH guidelines.
4. Expertise	1. Description of service: Supply and delivery of East Coast Fever Vaccine Services within the identified sub project sites across Uasin Gishu County. The service provider shall work in collaboration with county veterinary technical team in areas of publicity and farmer sensitization, dairy cow selection and recruitment, and vaccine administration. 2. Vaccine description: East Coast Fever Muguga cocktail vaccine (20/40 doses MCL ECF 001) 3. Number of animals to be vaccinated: Vaccination of 24,000 dairy cattle within the identified service sites in Uasin Gishu county 4. Mandatory requirements i.) KRA clearance certificate ii.) Audited bank accounts iii.) Bid bonds iv.) Business permit v.) Registration with Veterinary Medicine Directorate (VMD) 5. Technical Service Provider Requirements i. Provide the Curriculum vitae (CV) and Kenya Veterinary Board (KVB) current registration certificate details for the technical lead and four other trained and certified ECF Vaccinators ii. Proof of certification on ECF Vaccination training will be an added advantage iii. Demonstrate financial and technical ability to complete the vaccination in the service sites by providing proof of the following: Equipment including liquid nitrogen containers, serialized ear tags, vehicles, thermometers, temperature monitors, thermos flasks and cool boxes Inputs-Antibiotics/ syringes, disposable needles, vacutainer tubes, cotton wool, gloves, vaccine diluents, masks, gumboots, sanitizers and stationery including, ECF Vaccination certificates Vaccine Source-Proof of registered vaccine source Monitoring and supervision-proof of previous work in any part of the country and ability to manage reactors Registration certificate including-KRA, Business permits, KVB and VMD licenses iv. COVID-19 Certificate-Provide COVID-19 free certifications before and during the course of the vaccinations v. Provide any other proof/documentation/activity/contribution relevant to ECF vaccination
5. Reporting	The Service provider is expected to provide daily progress reports using the Department of Veterinary Services prescribed reporting template Daily Progress Reports should be submitted by Close of Business to the County Director of Veterinary Services and copied to the KCSAP Coordinator.
6. Work plan	The ECF vaccination is scheduled to be carried out in the periods between 15thMay 2021 to 15thJune 2021

ANNEX 4: ATTENDANCE LIST STAKEHOLDER MEETING

KENYA CLIMATE SMART AGRICULTURE PROJECT (KCSAP)

UASIN GISHU COUNTY
P.O Box 3948 Eldoret
kcsap.ug@gmail.com
www.kcsap.go.ke

Kenya Climate Smart Agriculture Project

ATTENDANCE LIST

ACTIVITY PUBLIC ENGAGEMENT ON ECF VACCINATION IN KAPSERET SUB-COUNTY

VENUE KAPTELDON CATTLE DIP

DATE 26/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
1	Paul K. mitei	2982737	m	Chairman	0721 203950	[signature]
2	Paul Yator	5301570	m	Committee	0720682700	[signature]
3	Paul Korir	5597026	M	Dip Member	0101428277	[signature]
4	Thomas Sitienei	6863115	M	Dip Committee	072633068	[signature]
5	Wilson K. SEUREY	1220787	M	DIP MEMBER	0721360836	[signature]
6	ROSE J. SOME	8762798	F	V. Chairlady	0722861961	[signature]
7	Salina Sugut	30538585	F	Dip. Committee	0704772261	[signature]
8	PETER CHELIMEK	3808057	M	MEMBER	0739871637	[signature]
9	Dionne Chepoimo	12467666	F	Member	0713037378	[signature]
10	Ruth Jelagat	25349063	F	member	0715843714	[signature]
11	Daniel Kosura	3323769	M	Member	0791-916 573	[signature]
12	NYAGURU MICAH	3737617	M	Member	0721 492 108	[signature]
13	ELIAS KOSGEI	24987575	m	member	0724921787	[signature]
14	ALEX KOJO	24367990	M	Secretary	0717786187	[signature]
15	Philimon Rotich	7353435	M	member	0712331257	[signature]
16	DAVID KIPRONO	8595 16 63	M	Member	0718897235	[signature]
17	ISAAC KOECH	6861588	M	MEMBER	0705155015	[signature]
14	JOHN BII	6859805	M	TREASURER	0713834295	[signature]

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ATTENDANCE LIST

ACTIVITY: PUBLIC ENGAGEMENT ON ECF VACCINATION IN KAPSERET SUB-COUNTY

VENUE: KAPTELDON CATTLE DIP

DATE: 26/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
19	NIXON KASEMGELI	10747821	M	KCIAG - CESSCO	0723 846 596	[signature]
20	WILSON KAYERE	5788732	M	SCVO - Veterinary	0721339739	[signature]
21	Ednah Jerono	21602940	F	VETERINARY - HNIGRI	0720 843475	[signature]
22	Koech Shadrack	23287248	M	Environmental Expert	0791740899	[signature]
27	Stephen Amunga	7802025	M	VETERINARY -	0721628714	[signature]

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Kenya Climate Smart Agriculture Project

ATTENDANCE LIST

ACTIVITY: PUBLIC ENGAGEMENT ON ECF VACCINATION IN KESSES SUB-COUNTY.

VENUE: CHEREBER CATTLE DIP

DATE: 25/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
1	JOSEPH ~~SAMWEL~~ RUTTO	0843457	M	MEMBER	0705345206	[illegible]
2	KIRWA CHEMWOLE		M	MEMBER		[illegible]
3	ISAAC ARUSEI	11616212	M	MEMBER	0729956278	[illegible]
4	ELICKY RONO	23221142	M	MEMBER	0722316A571	[illegible]
5	GEIR KIBET	30646309	M	MEMBER	0713409167	[illegible]
6	CHRISTOPHER CHESOKWANI	11717922	M	MEMBER	0712050147	[illegible]
7	JOSEPH KIPTOO KURGAT	3357526	M	MEMBER	0720411738	[illegible]
8	ERNEST MIASO	12738048	M	MEMBER	0725457025	[illegible]
9	ROBERT KOSIO	23164141	M	MEMBER	0729655179	[illegible]
10	DORCAS BITTOK		F	MEMBER	0726617356	[illegible]
11	JANET KOSKEI	13037098	F	MEMBER	0723355419	[illegible]
12	JAMES MAKTUR	22899920	M	Member	0726568252	[illegible]
13	PHILIP KETT	23986052	M	Member	0114273087	[illegible]
14	JOEL SAINA	35609277	M	MEMBER	0725377268	[illegible]
15	JOHNSON BUSIENEI	6874237	M	MEMBER	0716238732	[illegible]
16	RUTH TAREMBI	33927363	F	MEMBER	0724949202	[illegible]
17	DANIEL TERERI	3622705	M	MEMBER	0720596485	[illegible]
18	DAVID K BIWOTT	1016119	M	Member	0790 831971	[illegible]

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ATTENDANCE LIST

ACTIVITY PUBLIC ENGAGEMENT ON ECF VACCINATION IN KESSES SUB-COUNTY

VENUE CHEREBER CATTLE DIP **DATE** 25/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
19	MARY KOINANGE		F	MEMBER	0714512802	[signature]
20	RICHARD KONGOBEI	3240[illegible]47	M	MEMBER	0718355922	[signature]
21	JOHN CHERUIYET SONGOK	0277376	M	MEMBER	0725 497007	[signature]
22	WILSON KATERE	5788752	M	Veterinary	0721339739	[signature]
23	Koech Chaduek	23237248	M	Env. Expert	0721740[illegible]	[signature]
24	Steve Agunda	23926880	M	Veterinary	0711434657	[signature]
25	NIXON KASEMBELI	10747821	M	KCSAP-CESSCO	0723876596	[signature]

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ATTENDANCE LIST

ACTIVITY PUBLIC ENGAGEMENT ON ECF VACCINATION IN AINABKOI SUB-COUNTY

VENUE ~~[illegible]~~ ~~[illegible]~~ CATTLE DIP KIPKORIONY

DATE 24/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
1	Samwel K. Malot	11062132	M	Chairman	0712619925	
2	Mark K. Kibet	28275172	M	Secretary	0716-658306	
3	Gladys Sugut	30822501	F	Treasurer	0721516499	
4	Gilbert Kibet	34456731	M	V. Chairman	0790291267	
5	Samuel Sugut					
6	John Kibiy Mama	0244095	M	MEMBER	0725558239	
7	Isaack Kiptum	28633323	M	Member	0712022884	
8	Kiptoo Chelanges	32617235	M	member	0713033450	
9	Eunice Tirel	20973527	F	Member	0725360611	
10	Hillary Kosgei	15614962	M	COMMITEE	0722452725	
11	Isaack Kandie	22965576	M	Commitee	0721965387	
12	Isaac Salil	12550343	M	MEMBER	0725417862	
13	William Mutai	33099444	M	Member	[illegible]	
14	David Kiptop	3313536	M	Member	0717004020	
15	William Chemwor	3305225	M	MEMBER	0724-897-423	
16	BEN Kemboi	28360038	M	Member	0723212440	
17	John Kiptogo	3386092	M	Member	0726131699	
18	Philip Maito	11791523	M	Member	0710220900	
19	Loise Sugutt	6631580	F	L.O	0721284989	

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ATTENDANCE LIST

ACTIVITY: PUBLIC ENGAGEMENT ON ECF VACCINATION IN AINABKOI SUB-COUNTY

VENUE: KIPKORIONY CATTLE DIP.

DATE: 24/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
20	Koech Shedrack	22237249	M	Expert vet	0724740835	
21	Wilson Kanyere	5788732	M	Veterinary	0721339739	
22	NIXON KASEMBELI	10747821	M	KCSAP-CESSCO	0723846596	

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ATTENDANCE LIST

ACTIVITY: PUBLIC ENGAGEMENT ON ECF VACCINATION IN SOY SUB-COUNTY

VENUE: ~~KIPKORIONY~~ TEKELTICH CATTLE DIP.

DATE: 24/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
1	DAVID K. SEREM	10760720	M	Treasury	0710567425	
2	MICHAEL K KEINO	20078833	M	Farmer	0707444842	
3	Ronah Welly	7142471	M	Farmer	0729280777	
4	Ehud Chumba	5423808	M	farmer	0714084443	
5	Samwel Serem	3315831	m	farmer	0790121216	
6	ELPHAS K. BUSIENEI	0448142	M	Farmer	0715250653	
7	Emmanuel Birgen	0584244	M	Farmer	0704131605	
8	Joshua Tuwei	3257443	M	farmer	0729664711	
9	ELKANA TAMA	28652203	M	Vet Intern	0711286173	
10	David Koech	4894293	M	Farmer	0796486543	
11	JULIUS RUGUT	20204962	M	CHAIRMAN	0728768057	
12	John Sitienei		M	Dip Attendant	0713538254	
13	JOSEPH BORE	1246513		Farmer	0728071973	
14	ABEL KIRUI	10760709		Farmer	0720840024	
15	REBECCA SAMOEI	22070860	F	VETERINARY	0707950064	
16	WILSON KAYERE	5788732	M	Veterinary	0721339739	
17	NIXON KASEMBELI	10747821	M	KCSAP-CESSCO	0728846596	
18	Koech Shadrack	23207247	M	Expert team	0721744839	

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ATTENDANCE LIST

ACTIVITY: PUBLIC ENGAGEMENT ON ECF VACCINATION IN MOIBEN SUB-COUNTY

VENUE: CHEPKOILEL CATTLE DIP

DATE: 21/05/2021

No.	NAME	ID/NO	M/F	ORG/POSITION	TEL No	SIGN
1	MARK JIRTUI	13203877	M	SECRETARY	0717034344	
2	SAMUEL CHEPKWONY	3142490	M	CHAIRMAN	0725380010	
3	SAMUEL K KETER	23220783	M	MEMBER	0723969320	
4	JOHN MISOI	0710544766	M		ID 4472256	
5	HEZRON KOLIL	0726460564	M	MEMBER	ID 24198784	
6	PETER K. RONOH	10949864	M	V/ELDER	0725467463	
7	BENJAMIN K SONGOK	5597429	M	MEMBER	0720898512	
8	[illegible]	[illegible]	M	MEMBER	[illegible]	
9	ISAAC K. CHELOBEI	12640089	M	V/ELDER	0725549316	
10	David Tallam	7852197	M	Member	0722207274	
11	TIMON-IL-NARU	5593410	M	MEMBER	0722979427	
12	Samuel K. [illegible]	10999867	M	V/CHAIRMAN	0725888579	
13	Julius K Tallam	10949079	M	MEMBER	0721619911	
14	PAUL K ROP	22179631	M	MEMBER	0742870266	
15	Cosmas K. Koech	27929437	M	MEMBER	0725883021	
16	Koech Shadrack	23287243	M	Expert [illegible]	0721746837	
17	Alex K Kimeli	25444250		Vetting UG	0725 [illegible]	
18	Abraham Kiptanui	20226[illegible]	M	KCSAP-M&E	0770708803	

ANNEX 5. SAMPLED PUBLIC ENGAGEMENT RESPONDENT QUESTIONAIRES

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes ( ) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes ( ) No ( )
   If yes above could you mention a few that you know
   ..... Dipping .....
   .....
   .....
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes (✓) No ( )
7. What other information would you like to say about the ECF vaccination in you are
   ..... NIL .....
   .....
   .....

Your Signature ..... **ID No** 12640089

(1)

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes (✓) No ( )
   If yes above could you mention a few that you know
   ....① Dipping.....
   ....② Burning of grass.....
   .....
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   .....
   .....
   .....

Your Signature ..... *ID No* 7352197

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   ....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes (✓) No ( )
   If yes above could you mention a few that you know
   - Sorning of grass
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes (✓) No ( )
7. What other information would you like to say about the ECF vaccination in your area
   All farmers should bring all cattle to dipping regularly

Your Signature .... ID No. 0843457

3

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN OASIS GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Oasis Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in your farm in the last 5 years
   Yes ( ) No (✓)
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes ( ) No (✓)
   If yes above could you mention a few that you know
   .....
   .....
   .....
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes (✓) No ( )
7. What other information would you like to say about the ECF vaccination in you are
   .....
   I welcome the program.
   .....

Your Signature ..... ID No .....

(4)

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes ( ) No (✓)
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes (✓) No ( )
   If yes above could you mention a few that you know
   1) CATTLE DIP - ONCE EVERY WEEK
   2) BURNING GRASS IN OUR GRAZING FIELDS TO REDUCE TICKS (VECTORS)
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   .....
   .....
   .....

Your Signature ..... ID No 10949867

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes ( ) No (✓)
   If yes above could you mention a few that you know
   .....
   .....
   .....
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   ...Good.....
   .....
   .....

Your Signature ..... ID No 10949079

6

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   ....
   ....
   ....
   ....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes ( ) No (✓)
   If yes above could you mention a few that you know
   ....
   ....
   ....
   ....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   It B very expensive
   ....
   ....

Your Signature [signature] **ID No** 3142490

(7)

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

The Kenya Climate Smart Agriculture Project (KCSAP) Uasin Gishu coordinating unit intends to vaccinate dairy cattle in the selected cattle dips through the World Bank sponsorship program against the East coast Fever (ECF). Your dip has been selected to participate in this program and you are invited to give views concerning the project to aid in decision making and proper reporting in the PMP. Your comments/suggestions shall be confidential and only use for the purposes of this project only.

1. Have you heard of the proposed ECF vaccination of cattle in your are by the KCSAP veterinary department?
   Yes (✓) No ( )
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes (✓) No ( )
   If yes above could you mention a few that you know
   Dipping and Spraying
   Burning Bushy areas at home to keep
   Ticks and Snakes away
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   We are Very Proud for being selected to be
   given this exercise
   .....

Your Signature ..... ID No 13203877

(8)

PUBLIC ENGAGEMENT QUESTIONIRE

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   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes ( ) No (✓)
   If yes above could you mention a few that you know
   .....
   .....
   .....
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   .....
   N/A
   .....

Your Signature ..... **ID No** 2219763

PUBLIC ENGAGEMENT QUESTIONIRE

PEST MANAGEMENT PLAN FOR ECF VACCINATION IN UASIN GISHU COUNTY

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   Yes ( ) No (✓)
2. Do you support this project to be carried out in your area?
   Yes (✓) No ( )
3. Do you think with this immunization against ECF of your cattle will help reduce Losses due to deaths of cattle in yopu area?
   Yes (✓) No ( )
   If no above why?
   .....
   .....
   .....
   .....
4. Have you suffered any loss of cattle due to the occurrence of ECF disease in you farm in the last 5 years
   Yes (✓) No ( )
5. Are there any local interventions/ methods of controlling ECF in you area?
   Yes (✓) No ( )
   If yes above could you mention a few that you know
   CATTLE DIP
   BURNING GRASS IN OUR GRAZING FIELDS
   TO REDUCE TICKS
   .....
6. Do you think the exercise of ECF vaccination may negatively affect the environment in anyway?
   Yes ( ) No (✓)
7. What other information would you like to say about the ECF vaccination in you are
   .....
   .....
   .....

Your Signature ..... **ID No** 5593410

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ANNEX 6 VACCINE COLLECTION CHECKLIST

A. Vaccine details:

Date	Name of vaccine	Batch Number	Date of expiry	Packaging	Labelling

B. Vaccine issued by:

Name	Personal Number	Institution	Signature

C. Vaccine collected by:

Name	Personal Number	Designation	Signature

D. Motor vehicle Details

Vehicle Registration: …… **Vehicle type:** …… **Time of departure** ……