



PROMOTING ONE-HEALTH THROUGH RABIES ERADICATION IN LAIKIPIA *Via The Laikipia Rabies Vaccination Campaign*

THE APPEAL

What is the problem?

Rabies is one of the most important but **Neglected Tropical Viral Diseases (NTDs)** in SubSaharan Africa. Every year, an estimated **2,000 people** die of canine rabies in Kenya (World Health Organization (WHO), 2014). Ninety eight percent of human rabies cases in developing countries are caused by bites from infected domestic dogs (Butler *et al*, 2004). Rabies is endemic in remote Ewaso ecosystem (project site) and populations in this area are at high risk of the disease due to wildlife-Livestock interaction. In addition, there was a serious outbreak of Canine Distemper Virus (CDV) in the year 2017 that resulted to deaths of a significant number of domestic dogs and the endangered African Wild dogs. This poses a threat to the domestic dogs from which the residents depend on to deter predators from attacking their livestock thereby reducing human-wildlife conflict. Control of both rabies and CDV in this area is very critical in preventing dog mediated rabies in humans and protection of domestic and wild canines.

Why the concern?

The Ewaso Ecosystem which Laikipia County is part of has high interaction between wildlife and domesticated animals. This increases the risk of rabies and CDV outbreaks and spread. Among domestic animals vulnerable to rabies are cattle, sheep, goats and donkeys. Wild animals at high risk of rabies and CDV in this area are the African wild dogs (*Lycaon pictus*) as witnessed in the past outbreaks.



Figure 1: The Ewaso ecosystem and the role of domestic dog

Consequently, these two diseases are a big threat to both livelihoods of the communities living in the region and conservation of the yet endangered African wild dogs. This is corroborated by a report from WOA (OIE) Information System that between 2011 and 2012, a total of 123 heads of cattle in Kenya died of rabies. Rabies and CDV have been found to disturb some stable wildlife populations especially the **African wild dogs (*Lycaon pictus*)** in Ewaso ecosystem in Laikipia as was observed in the past

outbreaks. In the year 2017, there was a serious canine Distemper outbreak in the area and so many wild and domestic dogs died.

What can be done?

Mass vaccination of domestic dogs remains the most cost-effective intervention to control rabies and prevent transmission of the virus to humans (WHO, 2014). The World Health Organization estimates that vaccinating 70% of domestic dogs for 3 consecutive years in a spatial locale are sufficient to eliminate the disease from the domestic dog population and, by extension protect human beings (Cleaveland *et al*, 2003).

What is the plan?

To effectively protect people, wildlife, and livestock, there's a need to scale up our rabies vaccination efforts in Laikipia and Samburu (the Ewaso ecosystem) to cover at least 10,000 km². Since it's already known that domestic dog vaccination can eliminate rabies locally, reducing human rabies deaths to zero within 2-3 years while protecting wild dogs and other wildlife, the campaign, therefore, intends to expand domestic dogs rabies vaccination across Laikipia, Isiolo and Samburu Counties. Through our Laikipia Rabies Vaccination Campaign, volunteer veterinarians offered free domestic dog vaccination across 1,500km² in 2015-2018, reaching 24% of the targeted dog population (Ferguson *et al*, 2020). This has been scaled up over the years as depicted to reach about 8500km² of Laikipia's landscape.

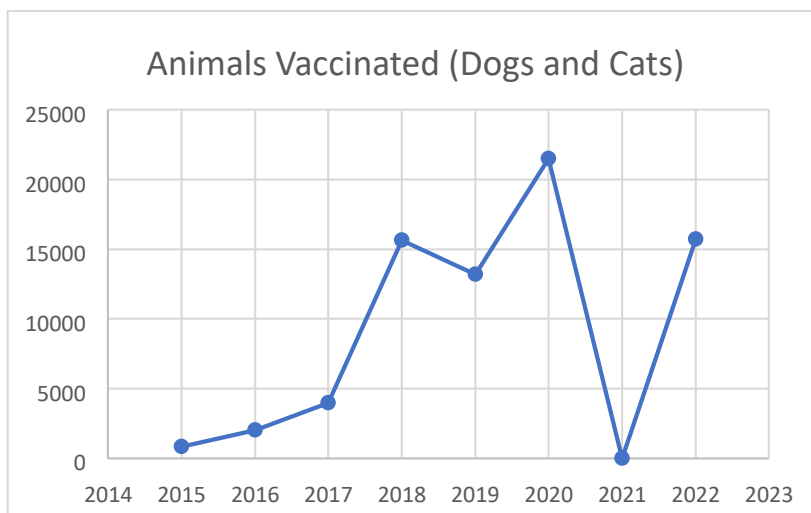


Figure 2: Rabies vaccination trend in Ewaso ecosystem since 2015

However, eliminating rabies locally requires scaling up to 10,000 km² plus achieving 70% vaccination coverage. Building on experience from pastoral Tanzania (Kaare M *et al*. 2019) , we shall improve rabies vaccines uptake by stationing Community Officers throughout the project area, to encourage participation.

Who are the stakeholders?

Since initiation in 2015 by researchers at Mpala, the Laikipia Rabies Vaccination Campaign working closely with Laikipia County Government has earned a wide range of partners supporting the course including; individuals, County governments of Isiolo and Samburu, other government agencies, conservancies and ranches, NGOs and local learning institution. The support from partners has enabled this project to scale up and vaccinate over 80,000 domestic dogs across this region. While not surprising, this has led to zero-rabies cases in humans since 2016, as reported by the Laikipia County Public Health office.

How to participate?

LRVC is a volunteer-driven partnership and collaboration, and this participatory model has led to the cumulative success we have today. The latest mass vaccinations were conducted in 2021 and 2022 but 2020 was skipped (due to COVID restrictions), and thus, if we do not conduct the vaccinations this year, we may lose the epidemiological advantage accrued in the last two years. Therefore, there is a need to conduct canine rabies vaccinations this year. Starting 2022, we started vaccination of domestic dogs against CDV besides rabies and 4000 domestic dogs were covered. We wish to vaccinate against the two diseases in this year's exercise which is set to start in month of October 2023.



Figure 3: Lactating domestic dog being vaccinated in the previous rabies vaccinations

Costs Breakdown – The gaps

- \$200** buys 200 doses of rabies vaccines for domestic dogs
- \$1000** buys 1000 doses of rabies vaccines for domestic dogs
- \$5000** buys a vaccination weeks' worth of rabies vaccines
- \$25,000** buys all rabies required vaccines for the campaign
- \$25, 000** buy 5000 CDV doses for the whole campaignn
- \$500** pays for the fuel needed for a full week of intensive campaign

Critical items needed for the campaign to begin

- \$5000** for consumables needed for the whole campaign (needles, gloves, dog markers, human post-exposure-vaccines etc)
- \$5000** for outreach activities for the whole 6 weeks vaccination period
- \$10,000** for meals and accommodation of the 200 volunteers for the whole campaign

The items we already have at hand

- \$3500 worth of fuel (Enough for 4 weeks of mass vaccination)
- 21,000 vaccination cards
- 10,250 doses of rabies vaccines
- 2000 hypodermic needles
- 6000 disposable syringes

In kind Contribution

- Vehicle and fuel to felly teams during the campaign
- The program will highly benefit if listed items above are given in kind.

Our target this year is to vaccinate 25,000 domestic dogs against Rabies and 5000 against CDV in Laikipia between October and December 2023. In previous, years we have vaccinated 21,000 domestic dogs within 6 weeks, hence our target is achievable given the level of expertise and volunteers available for this project.

Payments can be made at Mpala Research Trust, Account: 8702895062000, Bank Name: Standard Chartered Bank - Nanyuki Branch, Swift Code: SCBLKENXXXX.


For more information

Contact Dedan Ngatia, dedan.ngatia@gmail.com and or cdvlaikipia2020@gmail.com

More here <https://mpala.org/outreach/eradicating-rabies/>, Twitter (@Mpalive) and (@MpalaWildDogs) and Facebook (<https://www.facebook.com/MpalaResearchCentre/>)

Signed:

1. County Director of Veterinary Services

Name: DR. JACKSON NCEBERE 

Dates and stamp: 18/8/2023



2. Project Manager (LRVC)

Name: Dedan Ngatia

Dates and stamp: 21st August 2023

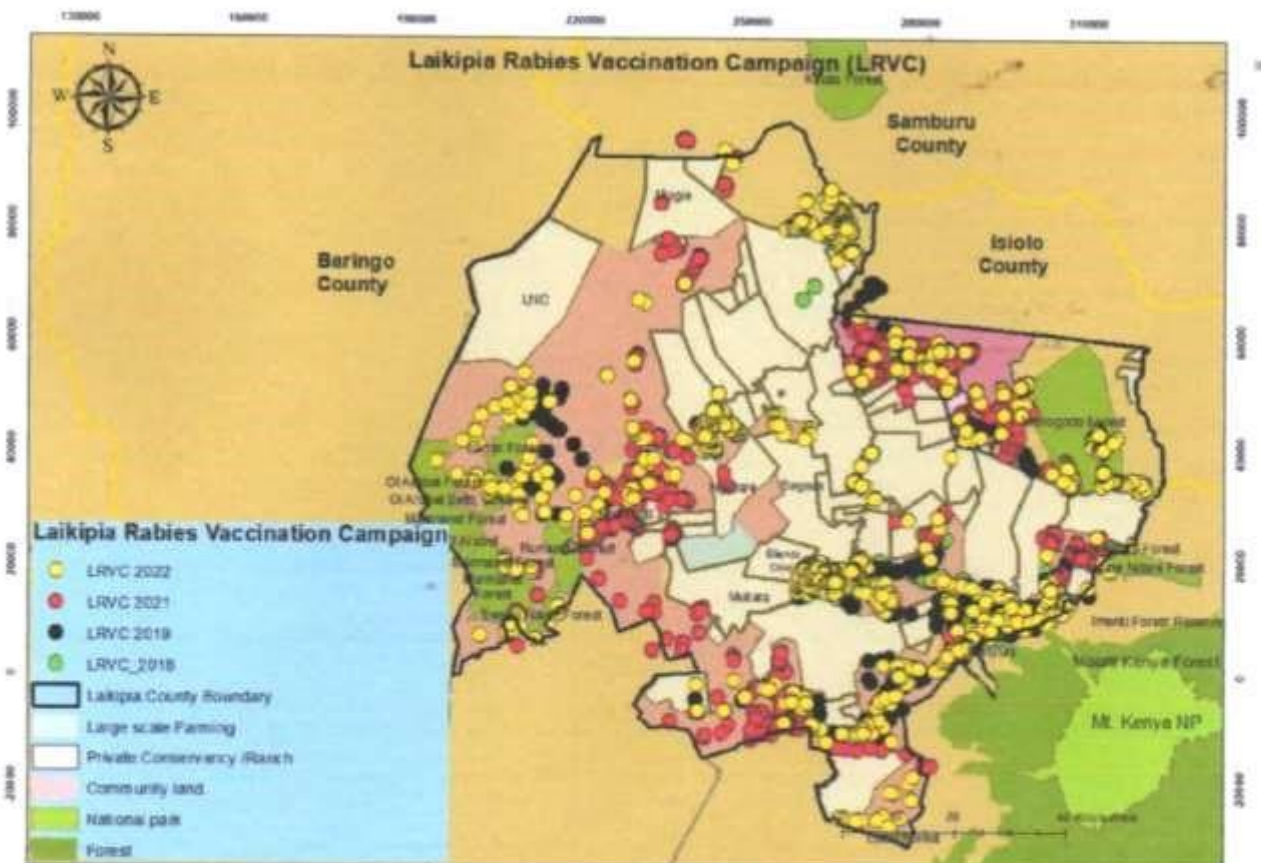


Figure 4: A spatial map extract showing LRVC vaccination activities in previous years



Figure 4: LRVC volunteers pose during a past mass rabies vaccination campaign.