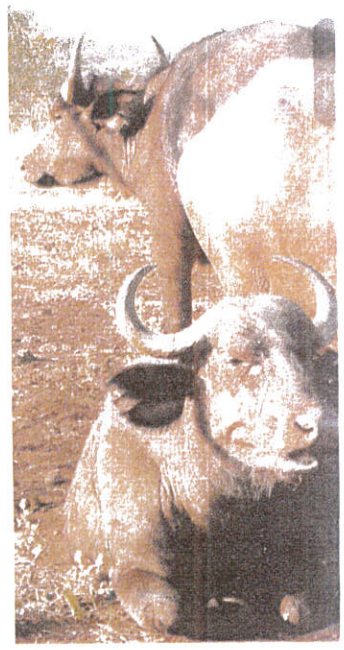
Diseases of wild, drought threat for livestock keepers



CLIMATE CHANGE Wet seasons short and erratic, droughts hurt Production

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Each day, scores of residents of Meru County manoeuvre hilly terrains in search of suitable pasture.

A majority of people in this area, just as other rural set-ups across Kenya, rely predominantly on agriculture for livelihood.

Most practise mixed farming – growing crops and rearing livestock for meat and milk.

"I have grown some maize and I also have cows, sheep and goats that I use for income generation," said Samuel Ruchiu at his home in Meru County.

During the rainy season, grass and other types of forage are abundant. So, farmers like Mr Ruchiu do not need to go far in search of pasture.

But due to climate change, wet seasons have become short and erratic over the years. Herders in this area, just as thousands others in arid and semi-arid lands (Asals) – covering more than 70 per cent of the country – endure prolonged droughts or dry spells that adversely affect livestock production.

Desperate to keep their animals alive, farmers usually encroach on protected areas like national parks or game reserves in search of pastures and water for livestock.

"This enhances the interaction between wild animals and cattle which promotes disease transmission," said Bernard Rono, Kenya Wildlife Service (KWS) resident veterinary officer at Meru National Park.

Some of the shared diseases between livestock and wild animals include Rift Valley Fever (RVF), East Coast Fever (ECF), foot and mouth disease (FMD) malignant catarrhal fever (MCF), anthrax and rabies.

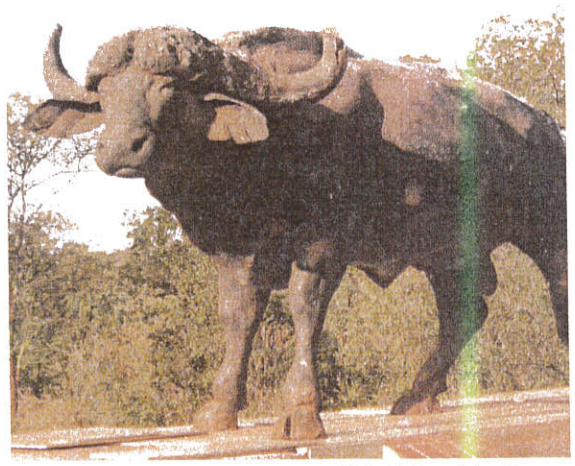
Jackson Nkozoi, senior assistant director for veterinary services at the Ministry of Agriculture, Livestock and Fisheries (MOALF) said

THE JAB
Clockwise from above: Vets vaccinate against East Coast Fever at Samuel Ruchiu's farm in Meru County, buffalos at Meru National Park, and tsetse fly.
-- SARAH OOKO AND FILE

VACCINATION

Rinderpest eradication rich in lessons

SUCCESS It is so far the only animal disease wiped out



BOLD STATEMENT Bronze statue of a buffalo celebrating eradication of rinderpest at Meru National Park. - SARAH OOKO

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Near the entrance to Meru National Park, a massive bronze statue of a wild buffalo stares at visitors.

But this is not just any statue. Its use in the park, since 2011, symbolises the global eradication of rinderpest– a lethal viral disease that wiped herds of cattle, leaving pastoralist communities languishing in poverty.

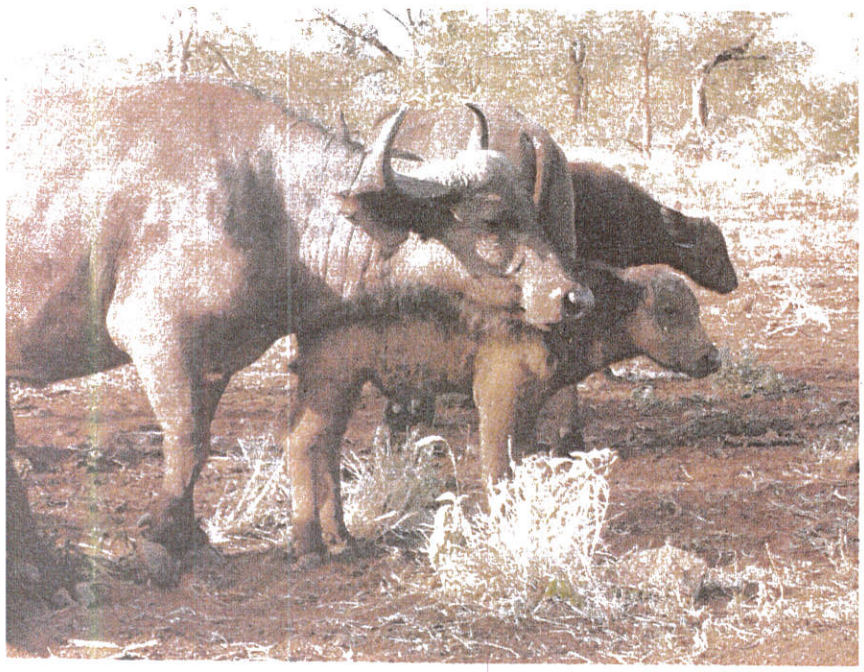
A unilateral decision was made by the global community to have the statue at the park as it was the site of the world's last recorded outbreak of rinderpest (German word that means cattle plague in English) in 2009.

Symptoms of the disease include fever, dehydration, profuse diarrhoea, erosive mouth lesions and discharge from the nose and eyes.

Death rates resulting from rinderpest outbreaks in cattle were always close to 100 per cent. It was, therefore, a great relief for farmers when the world was officially declared free of the disease in June 2011 by the World Organisation for Animal Health (OIE).

The declaration was also a great historical moment since rinderpest is the first, and so far the only animal disease that has been eradicated.

Health experts note that its success story offers valuable lessons in disease control that can help in managing others such as PPR (plague of small ruminants) that closely resembles rinderpest.



diseases hamper livestock production thus impeding Kenya's economic growth.

According to government statistics, the livestock sector contributes about 12 per cent of Kenya's Gross Domestic Product (GDP).

Its contribution to the agricultural GDP is 40 per cent. The sector also employs about 50 per cent of the agricultural labour force.

"Animal diseases lower milk and beef yields hence causing massive losses to many households that rely on livestock to sustain their livelihoods.

"And some of these ailments are also zoonotic diseases such as anthrax, rabies and RVF that can affect human beings leading to severe health problems."

Aside from contributing to food insecurity, Dr Nkozoi noted that disease outbreaks results in imposition of disease-related export restrictions that further undermine the country's economy.

According to Dr Rono, most wild animals are resistant or tolerant to most diseases that cause havoc in animals due to the harsh environment they live in, coupled with long-term exposure to diseases.

They, thus, act as ideal reservoirs for disease causing organisms that though 'friendly' to them, are extremely harmful to cattle that encroach on protected wildlife areas.

For conservation, he stated that game parks and reserves are usually left in their natural state with minimal interference.

As such, disease control practices such as spraying or vegetation clearing are non-existent in these habitats.

The bushy environment – in addition to high temperatures caused by climate change – promotes the existence and spread of disease vectors (carriers) that transmit them to cattle.

For instance, since wild animals are not sprayed, they are usually infested with many ticks that feed on their contaminated blood and spread tick-borne diseases such as ECF (present in buffalos) and Anaplasmosis (present in wild cats such as cheetahs, lions and leopards) to domestic animals.

Dr Delia Grace, animal health expert at ILRI, said country conflicts and insecurity challenges need to be addressed as they hamper disease control.

This was the case with rinderpest that was introduced in Eastern Africa by military cattle from India which had been brought to Ethiopia in 1887 to feed the Italian army in that country.

By the end of 1892, there were reports that 90 per cent of the cattle had been lost in the country, causing the great Ethiopian Famine (between 1888 and 1892). About 95 per cent of cattle were also lost in Uganda with Kenya losing a significant proportion of its livestock too. "Rinderpest eradication was possible as communities were involved in the control and eradication strategies," she said.

"Due to enhanced awareness on the disease, people understood why they had to do certain things to keep their animals safe."

Compared to other parts of the world, Dr Grace noted that rinderpest eradication in sub-Saharan Africa took much longer as most farmers were located in remote regions.

"We need to find innovative ways of reaching these people with disease control interventions in good time."

Dr Walter Masiga, former director of the African Union Inter-African Bureau for Animal Resources (AU-Ibar), noted that vaccines are the cornerstone the disease prevention and control.

The breakthrough moment for rinderpest eradication came with the development of a heat stable vaccine that was primed to give livestock lifelong protection, he said. "This vaccine didn't require refrigeration and could thus be deployed to remote regions without electricity even by bicycles."

According to statistics from AU-IBAR, total benefits of rinderpest eradication from Kenya and Ethiopia were approximately Sh44.7 billion ($434 million) and Sh98 billion ($951 million) respectively.

Vaccines need to be timely and well planned"

OCHIENG' ODEDE | ANIMAL HEALTH EXPERT

12%

GDP GROWTH

Estimates for contribution of livestock sector

We need to find innovative ways of reaching these people"

DELIA GRACE | ILRI EXPERT

Livestock can also get a viral illness known as *peste des petits* ruminants (plague of small ruminants) by being in close contact with infected wild animals like antelopes and water buffalos.

This ailment can cause epidemics that eliminate entire goat or sheep populations in affected villages.

Dr Rono stated that thickets, thorny bushes and dense vegetation in game reserves offer suitable breeding grounds for tsetse flies which cause African animal trypanasomiasis (nagana) – a major disease in the country's Asals which hold about 60 per cent of Kenya's livestock herd.

According to him, contaminated environments in the park also act as pathways for disease transmission in livestock.

For instance, places where the wildebeest give birth are usually laden with viruses (causing the Malignant Catarrhal Fever) which are transmitted by new born calves.

"If sheep and other cattle feed in these contaminated areas, they end up getting the disease which causes diarrhoea and sporadic weight loss in animals."

Livestock can also get more lethal bacterial ailments like anthrax when they inhale or ingest spores from contaminated soil, plants or water in areas where wild animals like antelopes or deers have had the disease in the past. Furthermore, bites from wild dogs and cats can fuel the transmission of rabies that aside from affecting animals is also hazardous to human beings.

To minimise disease transmission, Dr Rono noted that they usually urge herders to keep off wildlife areas.

But in instances where it is not possible, vaccinations can protect livestock against a myriad of diseases that they may get while at the park.

Animal diseases that are preventable through vaccines include ECF, RVF, FMD, rabies and anthrax.

Most of these vaccines require proper refrigeration or cold chain storage to work effectively.

"Even if you don't plan to take your animals to the park, these vaccines are very important to minimise productivity losses caused by animal diseases," said Ochieng Odede, an animal health expert at Sidai Africa.

Unfortunately, he noted that a majority of farmers come from low-income households and are, thus, unable to afford most of these vaccines.

Due to resource constraints, the government is often unable to sustain free vaccination, save for a few diseases. Vaccine stock-outs are also rampant."This doesn't help much. Vaccines need to be timely and well planned. If you do it a few times or when outbreaks have already occurred, the impact won't be felt," Dr Odede said.

Since vaccines uptake is also influenced by awareness levels on their significance, Dr Odede stated that the government should support sensitisation of farmers. "Once people understand the logic behind vaccinating cattle, then they will be more willing to invest in it and give it priority."

He said that farmers still opt for disease treatment as opposed to disease prevention in livestock.

"They wait for the animal to be sick then rush to some agro-chemists who may prescribe antibiotics without proper diagnosis."

This misuse and overuse of these drugs are major drivers of antimicrobial resistance which has spurred the emergence of drug resistant bugs that are harmful to both livestock and human beings worldwide..

According Dr Odede, the government should re-introduce the community dipping systems that were effective in the past to deal with tick-borne diseases.

He said that the collapse of those systems has led to many famers using hand sprays which aside from polluting the environment lack enough force to penetrate the furs and reach deeper levels of animals' bodies where ticks hide.

"This will also ensure that farmers are guided on the correct acaricide to use for killing ticks."