



# The use of the Infection and Treatment Method vaccine in controlling East Coast Fever in Kenya: Does gender matter for adoption and impact?

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## Key points

- Farmers have been using the Infection and Treatment Method (ITM) to vaccinate their animals against East Coast fever (ECF) in Kenya since 2012. Yet, little is known about differences in terms of perceptions, benefits and costs between men and women.
- Women point to the cost of the vaccine and a lack of awareness regarding it as the main obstacles to ITM adoption, while men describe the package size of 40 doses as the greatest constraint.
- Women benefit from increased milk sales but their workload may increase with larger herds to manage. Men benefit from additional cattle sales but may also extend their involvement in milking and milk sales.
- What changes occur in gender relations due to the introduction of ITM technology in terms of animal management and vector control?
- Have livelihood indicators—such as income—increased from ITM implementation and, if so, who controls the additional benefits at household level?

## Introduction

ITM has been used since 2012, but it remains unclear how men and women livestock keepers perceive its performance in controlling ECF and how its uptake has affected their livelihoods. This study sought to enhance gender dimensions in the assessment of the effects of livestock technologies on livelihood indicators and gender relations among smallholder livestock keepers. The study sought answers to the following research questions:

- How do men and women smallholder livestock keepers in different livestock production systems perceive the performance of ITM technology in controlling ECF?

### *What is ECF and ITM?*

ECF, a tick transmitted disease, is one of the most serious constraints to increasing cattle productivity in eastern, central and southern Africa (Di Giulio et al. 2009). The reported annual economic losses due to ECF disease are estimated at more than USD 300 million (Patel et al. 2016). The losses are mainly due to high cattle mortality rates and the significant cost of ECF vector control.

ITM involves infection of healthy cattle with live parasites and simultaneous treatment with a single dose of long-acting formulation of oxytetracycline, a broad spectrum antibiotic, to moderate the infection. The result is a mild reaction leading to a life-long immunity to similar or related parasites (ILRI and GALVmed 2015). Vaccination of cattle against ECF is anticipated to reduce cattle death rates resulting from ECF and reduce the cost of ECF vector control, among other benefits.

## The study area, data collection and analysis

The study was conducted in the two counties, Uasin Gishu and Kajiado, where ITM technology was first administered in Kenya. Furthermore, there is a high prevalence of ECF in both counties and most smallholder livestock keepers there depend on cattle as their main livelihood source. However, the two counties have very different production systems: in Kajiado most cattle are of indigenous breeds and kept in an extensive pastoral system, while Uasin Gishu is dominated by a crop–livestock mixed system with improved cattle breeds kept mainly for dairy production.

This study conducted 28 gender-disaggregated focus group discussions (FGDs) with cattle keepers, four key informant interviews (KIIs) with ITM distributors/veterinary authorities and direct observations to collect primary data. Sampling included both villages where ITM has and has not been adopted in both production systems. Separate FGDs were conducted with women and men from adopter and non-adopter households. The FGD composition ranged from 8–12 members. In total, seven women FGDs and seven men FGDs were conducted with ITM adopters, and seven women and eight men FGDs with non-adopters. The NVivo 11® computer program, an analytical technique for qualitative data, was used in data analysis.

## Findings and discussion

### Perceptions on the efficacy of ITM among women and men

Both adopter women and men in both production systems perceived that ITM vaccination leads to:

- A drastic reduction in cattle death rates: mortality rates have dropped from more than 50% to under 10%  
*“.....vaccination of cattle against ECF has helped us a lot in controlling this deadly disease; since we vaccinated them, none of them has died of this disease” male adopter in Bissil, Kajiado.*
- A reduction in cost of the controlling ECF: Farmers who have vaccinated their whole cattle herd have reduced the frequency of acaricide spraying from four times to twice a month.
- An increase in cattle milk production: Higher milk yields are attributed to maintaining healthy cattle and keeping more animals of improved breeds. In addition, some women feel that with more calves present during milking—due to reduced calf mortality—cow lactation is more effectively stimulated.  
*“...If the calf of a lactating cow is alive it stimulates the cow to produce more milk and does not dry out as fast as compared to when the calf is dead” female adopters in Kitengeta, Kajiado.*

However, their perceptions differ in regard to:

- Increase of the cattle’s market value: Most participants in the seven men adopter FGDs from both production systems stated that vaccinated cattle have higher market values. Women were reluctant to talk about cattle prices because they do not engage in the sale of livestock.
- Cattle immune systems: Most participants in five of the men adopter FGDs from both production systems stated that vaccinated cattle responded faster to other treatments. Participants in all the adopter women FGDs and in the other two men adopter FGDs did not raise this issue.

### Factors constraining men and women, both adopters and non-adopters, from vaccinating their cattle against ECF

Non-adopter men cite the need to gather 40 animals for vaccination as a key hindrance; the vaccine is packaged in units of 40 doses. But non-adopter women report this could be done quite easily through cooperation within their self-help groups. Women, however, mention the vaccine cost as the key constraint. In addition, non-adopter women from non-adopter villages see the lack of awareness on ITM technology as a key adoption hindrance. Men, conversely, have frequently seen cattle with yellow or red ear tags (indicating ITM vaccination) at markets.

### Changes in gender relations in cattle management and vector control due to ITM adoption

The findings show some differences in cattle management and vector control activities between adopter/non-adopter men and women in the two production systems. However, there were hardly any differences between non-adopters in adopter and non-adopter villages.

- Cattle milking had been exclusively a women’s activity among all non-adopter FGDs in both production systems. However, men adopters in both systems began engaging in milking activities.
- In half of the adopter villages in Kajiado, men had also begun to be involved in selling fresh milk in nearby local markets and in transporting it to nearby towns/urban centres. In Uasin Gishu, the morning milk was jointly sold (men and women) by both adopters and non-adopters in all study villages. However, evening milk sales were a women-only activity among non-adopters in both village types, but a joint activity among adopters of ITM.

### Changes in livelihood indicators due to ITM adoption

Adopter women noted an increase in their income, due to increased milk sales and market participation. Less time spent in vector control enabled them to engage more in other farming and marketing activities. Adopter women used the additional income to buy food and clothes for their families and educate their children. They were also able to pay for medical bills with minimal financial dependence on their husbands, and participate in women’s savings groups to save income and access credit.

However, many women reported that due to ITM their husbands have more cattle which they use to make dowry payments for additional wives, resulting in unequal sharing of the scarce resources. There was fear among many adopter women in both production systems that a continuous increase in herd sizes might lead to increases in their workloads. Caring for cattle and calves within homesteads was the women's main duty, as men mainly provided help in technical aspects, such as disease and vector control. In addition, women's financial independence due to increased participation in the sale of milk reportedly made their husbands envious, causing increased tensions between within households.

For adopter men, increased income from cattle and milk sales has allowed them to educate their children and invest in new agricultural assets. They have acquired land and cattle of improved breeds, and improved their houses and paddocks. An increasing number of dairy cattle are being kept in Kajiado, while in Uasin Gishu a lot of men have invested in vehicles and motor bikes to transport milk.

Unlike women, most men took pride in their improved livelihood status which enabled them to make dowry payments. The increased cattle herd size also enhanced their social status, gaining respect from their wives and community members. However, in Kajiado men also mentioned that increased herds have led to more disputes over access to pastures, particularly during dry seasons.

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Humphrey Jumba, Nils Teufel, Henry Kiara and Isabelle Baltenweck work for the International Livestock Research Institute.

This has also led to increased encroachment on nearby private land and protected areas, such as national parks.

### *Anticipated effects of ITM in non-adopter villages*

In non-adopter villages the perception of men and women regarding the effects of ITM focused on the expansion of current cattle-related activities. Men felt that greater participation in cattle markets would enable them to accumulate enough money to educate their children, build better houses, start businesses and expand their land holdings. Women expected that increased milk availability would allow them to meet their family consumption needs, as well as sell more milk to support their children's education, buy other food and clothing, and pay medical bills.

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