Lessons Learned Summary

Social Science Lessons Learned from Rift Valley Fever Outbreaks

In this 'Social Science in Epidemics' series, different aspects of past disease outbreaks are reviewed in order to identify social science 'entry points' for emergency interventions and preparedness activities. This evidence will come together to determine tangible ways to better address the social, political and economic dynamics of epidemics; and to ensure that interventions build on the social and cultural resources of the communities they aim to support. This SSHAP Lessons Learned Summary explores lessons about the social dimensions of past and recent Rift Valley Fever (RVF) epizootics, highlighting recommendations for future responses.

PHOTO: DANA HOAG/FLICKR, CC BY-NC-ND 2.0

1 RVF outbreaks are infrequent, but when they occur it can affect thousands of animals and hundreds of people and gain a foothold for future outbreaks.

The diversity of vector species (several mosquito and other blood-sucking insects) that can transmit RVF, coupled with the global trading in livestock produce, means RVF is highly likely to spread and persist across large areas and national borders. Whenever RVF is introduced to a site, it increases the likelihood of subsequent outbreaks. This phenomenon accounts for the gradually increasing

footprint of the disease, in terms of number of countries affected, number of districts within each country, as well as the severity of individual outbreaks.

- As an entrenched enzootic/endemic disease, RVF control needs a long-term strategy for both animal and human health. Conduct RVF contingency planning in all affected and vulnerable countries, ideally through a regionally coordinated platform. Include RVF in regular human health contingency plans.
- Promote and enhance existing multi-country platforms for sharing surveillance data and coordinating response activities, across animal and human health sectors.
- Monitor disease activity among both animals and humans as a part of sentinel surveillance for early warning. The sudden nature of outbreak coupled with remote locations of its settings means diseases in animals and humans can be missed.

2 Changing water infrastructure, livestock movements, weather patterns and climate change are likely to change vector ecosystems and hence contribute to RVF emergence.

As mosquitoes and other blood-sucking insects thrive in water reservoirs, irrigation canals and other water infrastructure, the development of this infrastructure shapes the emergence of RVF outbreaks. Similarly, the institutional and political constraints to livestock movement and access to water sources shapes exposure to vector-bites: privatisation of water sources or pastureland, movement bans, conflict, may lead to high concentration of animals around stagnant waters, enhancing the risk of RVF emergence. Mosquito numbers, behaviours and movements (e.g. colonisation of new areas, non-seasonal emergence) are also shaped by weather patterns and climate change. Collaboration between natural and social sciences must give insights into these social, economic and environmental patterns that shape emergence.

- Identify the social, political and economic dynamics that shapes herders' movements, their access to water and pastureland, and the concentration of animals around water reservoirs.
- Enhance participatory RVF surveillance in enzootic, as well as potentially exposed, countries (geographic neighbours, trade partners, etc.) to prevent its emergence and spread to new regions, incorporating inputs from social sciences and community-based surveillance.
- Promote public discussion around the impact of natural and man-made changes to environment in disease emergence and spread.
- Advocate for more interdisciplinary research on the ecological drivers of RVF transmission, including the association of vector ecology and dynamics with ecological characteristics, as well as social and economic change.
- Include RVF in conducting impact assessments of development projects, especially dams and irrigation systems.

3 Policymakers, in the face of uncertainty of the emergence of RVF, are managing their own risk.

Due to the highly unpredictable nature of the disease, and because interventions are costly when funding resources are scarce, policymakers shy away from declaring an outbreak at an early stage when it might not emerge. For this reason, in the past, emergency has been declared when human cases appear, when it is certain that the oubreak is happening, but it is too late to prevent the impact. The disease is best controlled in

the vector/livestock interface, at the time when rainfall and mosquito patterns are consistent with a potential outbreak. Policymakers have to work in conditions of imperfect information, and there is a need to incorporate decision-making tools that incorporate epidemiological, and socio-economic data to justify high-risk interventions at early phases.

- Reduce the risk of decision-making by understanding the disease spread as (1) phased – earlier phases mean less certainty of outbreak, but action means if the outbreak does happen, impact is averted; and (2) shared across the response, both animal and public health.
- Adapt the RVF decision-support framework, that gives tools to policymakers to justify, based on scientific evidence, what measures are taken, and highlight the evidence of socio-economic consequences if they are not taken.

4 Pastoralists and ranchers live with and react to the disease in different ways and require tailored response strategies.

Small-scale or traditional pastoral communities keep livestock on a subsistence-oriented extensive system and mainly use their livestock for meeting socio-cultural and economic needs. On the other hand, ranchers keep their livestock on an intensive system mainly for large-scale sales and are often export-oriented. Ranchers closely monitor disease in their herds using highly mechanised systems. They spend more money to ensure their animals are free from disease, since they must adhere to high biosecurity standards to enable their animal products to meet export regulations. They are more likely to request veterinary services to vaccinate their livestock if they suspect an outbreak and can pay for it. The purpose and meaning of livestock are varied across the different livestock management systems and have implications for disease control and management.

- Community surveillance strategies should incorporate pastoralists to give information on the changes that they are noticing in their immediate environment so that speedy action can be implemented.
- Conduct an information needs assessment and work closely with local decision-makers and affected stakeholders, such as pastoralists, agro-pastoralists, ranchers, veterinarians, and so on, to better tailor analyses to meet their requirements.
- Work with other early warning systems, such as linking modelling predictions with community-based reporting systems of weather patterns and mosquito loads. Mobile phone technologies can enhance community early detection.

5 Pastoralists have historically been marginalised and their livelihood resilience curtailed, undermining their trust and collaboration in RVF response and prevention efforts.

Conflict, irrigation projects, privatisation of land and water resources, movement restrictions and sedentarisation programmes continue to undermine pastoralist livelihoods. Pastoralists are pushed towards land with stagnant waters, such as the end of canal networks, or near reservoirs like ponds and *berkads*, which are breeding grounds for mosquitoes, making pastoralist herds more vulnerable to RVF outbreaks. Veterinary services for pastoralists are often lacking, and lack of appropriate transport and connections makes the delivery of essential health services and vaccines to the community very difficult. Livestock market and movement bans and the prohibition of animal slaughter in outbreaks are a great threat to pastoralists' livelihoods, and often the State does not provide alternative sources of food or income in this period. Unlike

ranchers, pastoralists have no insurance to rely on, although there is index-based livestock insurance for drought that is currently under consideration for pastoralist livelihoods. This marginalisation by the State explains why pastoralists may be resistant in reporting diseases in livestock in the absence of compensation, or to allow vaccination when it is associated with adverse effects on the livestock.

- Recognise association of RVF with poverty, livelihoods and exclusion with an explicit mention in the contingency plans. Encourage expansion of current climate-focused livestock insurance for pastoralists to cover disease outbreaks in these plans.
- Ensure the participation and two-way dialogue of pastoralists and other stakeholders into the design of prevention measures, contingency planning and throughout the RVF response in the event of an outbreak.
- Jointly design compensation mechanisms and income or food aid programmes in the event of an RVF-related market and slaughter ban. Link with social protection and nutrition interventions in the medium term.
- Conduct an information needs assessment and work closely with local decision-makers and affected stakeholders to better tailor analyses to meet their requirements.

6 Human vulnerability to RVF is shaped by livelihood, profession, and social roles, including gender and age.

Herders, mostly from poor households, are especially exposed, followed by women who manage young and sick domestic animals. In terms of occupation, farmers, farm labourers, staff in slaughterhouses, butchers, veterinary surgeons or other personnel who perform veterinary and obstetric procedures are at high risk of infection while handling the carcasses of animals that are sick or have died of RVF. Gender and age determine the tasks performed in animal husbandry and in food preparation. In some contexts in East Africa, women tend to adopt the role of 'milk managers', responsible for milking and tending to animals, and the role of men is akin to 'managers of herds', responsible for herding and slaughtering. Children take on similar gendered tasks at an early age and thus are equally exposed to RVF infection. Men and women may care for different species of animals (e.g. men may tend the cattle whereas women tend to small ruminants). Women, in many communities, look after sick animals. As most of the milking is done by women, consumption of raw milk is apparently a common practice while milking, many also giving some milk to children to pacify them. Women also touch raw meat as they prepare it.

- Conduct rapid social research during outbreaks to better understand and characterise the experience of disease by different people, how exposure is shaped by social roles and how communities respond.
- Work with communities to adapt safety practices of animal handling (e.g. gloves in the management of births and abortions as well as in meat-cutting and inspection in slaughterhouses and butcheries).
- Partner with local influencers, including religious leaders, to devise awareness campaigns that can align with or address local religious and cultural values.
- Devise gender-responsive strategies that allow for local information campaigns and interventions to address specific gender-associated risks in different communities
- Examine availability and acceptability of non-formal health providers for humans as well as animals.
- Monitor usage, quality and trust of formal health services among affected communities.
- Engage non-formal health service providers (both animal and human) in disease surveillance and information campaigns.

7 Risk communication should build on local disease framings and health systems and use trusted channels of communication.

During RVF outbreaks in Kenya, radio was one of the key channels of transmission of RVF information, yet electronic media was described as having delivered sometimes inaccurate information resulting in public panic and fear. In relation to gender, RVF information, especially from technical personnel, has sometimes been more accessible to men. There should be concerted efforts to increase information diffusion from technical sources to the public and mostly using local existing structures in person-to-person models, such as chiefs' baraza, churches, women's groups, extension groups, etc. In Kenya, livestock keepers recommended that the low pre-outbreak awareness levels could be resolved through regular/routine public education by frontline veterinary staff, who should inform and educate them of diseases well in advance of outbreaks. They also recommended that more veterinary staff should be employed to improve information flow.

- Devise a risk communication strategy for RVF that promotes transparency and accurate information.
- Ensure risk communication messages related to human health and animal health are consistent.
- Promote accessibility of information by different audience groups, including women, given their roles in childcare and animal husbandry.
- Identify which are the most trusted communication channels (e.g. radio in Kenya), and respond to misinformation and panic on electronic media by providing constant and updated accurate information. Explore the possibility of mobile phone communication with pastoralists.
- Utilise local influencers such as health providers, traditional leaders, chiefs, baraza, church women's groups, etc. to disseminate technical advice using person-to-person models.

8 In many contexts vector transmission is readily accepted, whereas food-borne zoonotic transmission is less so.

RVF manifests among humans with non-specific presentation, whereas its presence in susceptible animals is quite stark, resulting in fever, abortions and death. Herders are often aware of the role of mosquitoes and direct contact in transmitting RVF to humans. Yet, because the symptoms of human infection are varied, non-specific and often mild, food-borne transmission to humans are often dismissed. Further, people in the line of subsistence are unlikely to waste food. Consumption of contaminated meat, blood and raw milk that are not thoroughly cooked are key risk factors, but people's everyday experience of seeing others eat these – for consumption or for therapeutic uses – and not get ill, means that they are less likely to accept it as a mode of transmission of RVF.

- Ensure that messaging focuses primarily on the mode of animal-to-human transmission that is most prevalent e.g. direct contact or mosquito bites, putting into perspective the relative importance of food-borne transmission, to avoid mistrust.
- Enunciate clear messages around food-borne transmission of RVF, in different settings: especially because of local practices of ingesting raw milk, fat and meat, including advice on alternative sources of food available to them.

9 Customary animal exchanges and slaughter are culturally meaningful in many contexts, but adaptations can be made to ensure ritual and public health needs are sustained in the event of an RVF outbreak.

Livestock play a central role in the majority of farming communities in eastern and southern Africa, with livestock being used in dowry and slaughter of animals conducted in honour of visitors or important social and religious occasions. A key religious ritual that is associated with animal trading and RVF is the Islamic ritual of slaughter, whether conducted individually in the case of Eid-al-Kabeer, or in case mass slaughters, as in the case of the annual pilgrimage ritual of Haj in Saudi Arabia. Herders and butchers occassionally mistrust messaging coming from the civil authorities but may be more open to advice coming from trusted leaders. In the case of the 2006 outbreak in north-eastern Kenya, there are positive experiences of involving religious leaders in advocating for safe slaughter procedures and even banning slaughter during the Eid celebration. This reduced the impact of RVF in the region.

- Negotiate alternative slaughter practices with communities that meet the ritual needs of the cultural group but reduce exposure of people to blood of infected animals.
- When market and slaughter bans are necessary, engage with communities and trusted leaders (e.g. religious leaders) to negotiate their implementation and communicate it in the spirit of transparency.

10 Herders and pastoralists, depending on the context, use local disease frameworks to identify the disease and have cultural practices to minimise disease risk, although shaped by economic and structural limitations.

All communities have their own sets of cultural practices which they use for minimising disease risks, but these are also influenced by economic and situational concerns. These local frameworks need to be identified and incorporated into culturally appropriate intervention strategies. For example, different cultures may forbid or allow the consumption of sick or recently dead animals. These customs are also influenced by the economic context, as there may be no other food available to stave off hunger. In regions in which the disease is unknown, there is a need to identify the local language of RVF-related symptoms and models of disease mechanisms to initiate discussions with herders in terms of the response.

- Compile locally-grounded definitions of the disease and practices associated with it across different communities and regions.
- Identify everyday practices that contribute to RVF incidence or control in different communities.
- Collect and use qualitative data in understanding community knowledge, attitudes and practices on the disease.
- Use existing community practices to promote personal protection, prevention and health-seeking practices that align with everyday practices of local communities.
- Include community engagement in preparedness and response efforts.

11 Health-seeking behaviours are shaped by people's understanding of human RVF infection, reliance on biomedical treatment and attitudes towards individual isolation.

There is consensus that awareness of the human symptoms of RVF is quite low, with the most commonly cited symptoms being haemorrhage, fever, backache and headache. Somali pastoralists called RVF *'sandik'* meaning 'bloody nose'. In a study among agro-pastoralists in Tanzania, it was observed that over 70 per cent of RVF patients sought biomedical treatment. This is more so since fever was associated with malaria and free treatment was offered at the health facilities. Indeed, malaria-like symptoms were the most often cited as RVF symptoms, and since people were more aware of malaria, they sought medical treatment in the health facilities. In Kenya, however, it was noted that after community members observed the way that RVF patients were being isolated, they were increasingly hesitant to take sick people to health facilities.

- Train health workers to better identify RVF, the risks of transmitting the disease, as well as provide culturally-appropriate advice for local communities.
- Capacity building of health systems needs to be accompanied with trust building in health institutions as well, especially in marginalised areas that are most vulnerable to shocks of the disease and most hesitant to access formal health services.
- Trust building cannot be done in isolation: an easy way to do so would be to increase responsiveness to community concerns, such as by allowing families to visit admitted suspect RVF patients and adopting better communication strategies.
- Rethink how to provide health services in pastoral settings, especially if formal health providers remain difficult for them to access in a timely manner.
- Given the limited understandings of the concept of zoonoses, develop communication strategies around promoting general awareness about zoonoses, including common signs, risks associated with specific diseases, and how to respond.

12 Perceptions of vaccinations vary depending on the context: some consider it beneficial while others, prefer to rely on ethnoveterinary practices, often compounded by limited access to mainstream vaccines.

In many pastoralist communities, there is no distinction between ethnoveterinary specialists and lay folk, as everyone is a practitioner managing the health of his own herd. In other contexts, there may be people from the communities to whom people appeal for ethnoveterinary advice. There are different attitudes toward vaccination of livestock and humans depending on the context. On occasion, there may be religious objections and fears that the vaccine may be harmful. Willingness to pay for vaccines depends on the relative value of animals, the presence of extension workers throughout the year, the availability of off-farm income and expectations of free or subsidised vaccine distribution by the RVF response. Even when vaccines are accepted and demanded, there may be limited access and availability, and health information is often insufficient. There is a need to identify socio-cultural, economic and technical barriers to uptake of RVF vaccination and other control mechanisms, as well as gender dynamics in decision-making and uptake of RVF vaccines and other control mechanisms.

- Uptake amongst pastoralists will require free or subsidised vaccination schemes when affected herders are not be able to afford RVF vaccines at market prices. Evaluate pastoralists' willingness to pay for vaccines in each context and adapt vaccine provision and capacity-building accordingly.
- Link animal vaccination to human health interventions (e.g. simultaneously providing human and animal vaccinations) and encourage mobility of vaccination teams seeking pastoralists in socio-economic meeting points, such as watering points and livestock markets.
- Understand local ethnoveterinary practices and cultural understandings of health and immunity when designing vaccination interventions.
- Develop two-way dialogues between public health workers, vaccination officers, animal health extensionists, ethnoveterinarians and herders regarding concerns around vaccination programmes.
- Support financial and physical accessibility of vaccines.

About

The Social Science in Humanitarian Action Platform (SSHAP) aims to establish networks of social scientists with regional and subject expertise to rapidly provide insight, analysis and advice, tailored to demand and in accessible forms, to better design and implement emergency responses. SSHAP is a partnership between the Institute of Development Studies (IDS), the London School of Hygiene and Tropical Medicine (LSHTM), Anthrologica and UNICEF Communication for Development (C4D).

Social Science in Humanitarian Action
E info@socialscienceinaction.org **W** www.socialscienceinaction.org

This Lessons Learned Summary is part of a portfolio on Social Science Lessons Learned in Epidemics and was supported by the Office of U.S. Foreign Disaster Assistance (OFDA) and UNICEF.

Credits

This SSHAP Lessons Learned Summary was produced by **Syed Abbas** (Institute of Development Studies, University of Sussex), **Salome A. Bukachi** (University of Nairobi), and **Santiago Ripoll** (Institute of Development Studies, University of Sussex).

Citation: Abbas S.; Bukachi S.A. and Ripoll S. (2019) *Social Science Lessons Learned from Rift Valley Fever Outbreaks*, SSHAP Lessons Learned Summary 4, UNICEF, IDS & Anthrologica.

This document has been funded by UNICEF and the U.S. Agency for International Development (USAID) Office of U.S. Foreign Disaster Assistance (OFDA). However, the views expressed herein are those of the author(s) and do not necessarily reflect those of USAID or OFDA, or the partners in the Social Science for Humanitarian Action Platform (SSHAP).

This is an Open Access paper distributed under the terms of the Creative Commons Attribution 4.0 International licence (CC BY), which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited and any modifications or adaptations are indicated. http://creativecommons.org/licenses/by/4.0/legalcode.

© SSHAP 2020