International Livestock Research Institute

Dissemination of the Rift Valley fever decision support framework in eastern Africa

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Citation

Bett, B. 2015. *Dissemination of the Rift Valley fever decision support framework in eastern Africa.* ILRI project report. Nairobi, Kenya: ILRI.

Summary

The revised version of the Rift Valley fever (RVF) Decision Support Framework (DSF) was disseminated in 2015 using three main methods including: (i) the internet, (ii) training workshops, and (iii) presentation in a regional conference. The target audience was decision makers in the public and animal health sectors in the Horn of Africa. The objective of this activity was to enhance access and utilization of the framework in the region and ultimately reduce the impacts of RVF epidemics, which often occur episodically following periods of excessive and persistent rainfall.

The latest version of the framework was posted to the on-line repositories hosted by ILRI (with the link: https://cgspace.cgiar.org/handle/10568/59781) and the HEALTHY FUTURES[1] project (http://www.healthyfutures.eu/index.php?option=com_k2&view=item&layout=item&id=140&Itemid=267&lang=en) which supported the refinement of the DSF. By the end of 2015, the framework had been viewed 108 times including 43 downloads from the ILRI repository alone. To enhance access to the framework at these sites, a text blog post highlighting the availability of the DSF was developed at a time when the risk of RVF was thought to be increasing due to impending El Nino rains. On the second dissemination method, six successive meetings involving more than 150 people were held in Ethiopia, Uganda, Kenya and Tanzania. These meetings were convened by Food and Agriculture Organization of the United Nations to train decision makers on good emergency management practices (GEMP) in an event of an infectious disease outbreak. RVF was used as a case study disease and some of the sessions were set for DSF presentation and discussion. Group exercises were also done to review DSF's implementation details. Desk top simulation exercises on RVF outbreak provided a good opportunity for the participants to apply the DSF in the identification of interventions that were appropriate for each outbreak scenario presented for management. Copies of the DSF were made and distributed in these workshops as part of the training materials. Lastly, the DSF was presented in an inter-regional conference involving participants from the Horn of Africa and Middle East convened by the World Organization for Animal Health (OIE) and Food and Agriculture Organization of the United Nations in Djibouti on 21st to 23rd April 2015. The proceedings of this meeting are posted on http://www.rr-africa.oie.int/en/news/20150422.html. One of the recommendations made at the meeting was that the DSF had been updated and could assist the countries at risk to assess their level of preparedness.

The decision makers in the region can now access the DSF. They also have a good knowledge on how to use it routinely for RVF control. Additional studies on cost-benefit analyses on the competing intervention measures identified in the framework and generation of RVF risk maps that integrate socio-economic variables have been finalised and these outputs are being integrated into the DSF to enhance its effectiveness.

[1] The title of the project in full is: Health, environmental change and adaptive capacity; mapping, examining and anticipating future risks of water-related vector-borne diseases in eastern Africa. The project was funded under the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement no 266327

1 Background

RVF DSF was developed after the 2006/07 RVF outbreak to guide risk-based decision making in the management of RVF epidemics in the Horn of Africa. Surveys conducted at the time demonstrated that decision makers in the region lacked capacity to predict, prevent and control RVF epidemics. This motivated the development of the DSF which: (i) identifies timeline of events leading to an RVF epidemic[2] and uses them as decision points, and (ii) matches these decision points with appropriate intervention measures such as capacity building and training, communication, advocacy and public awareness, national and regional coordination, surveillance, disease prevention, case management, regulation of trade and markets for livestock, resource mobilization, establishing or strengthening institutions and policies, research, risk, impact and climate change assessment.

The original version of the DSF was published in the American Journal of Tropical Medicine and Hygiene[3] and incorporated into an earlier version of the RVF Contingency plan in Kenya. It was also disseminated in various workshops and conferences, with the target audience being directors of public and animal health services. These stakeholder consultations and interactions identified ways in which the DSF could be revised. These revisions were implemented over time; the main ones were (i) reduction in the number of decision points from 12 to five[4], and (ii) inclusion of public health interventions to enable the implementation of DSF from a One-Health.

The revised DSF was then disseminated between April and November 2015. This report outlines the dissemination plan used and the milestones achieved. The ultimate goal of the project was to enhance the utilization of the DSF among the decision makers in the Horn of Africa and hence contribute to RVF management and control. This report however does not capture the impact of the dissemination activities implemented given that no appropriate surveys have been done.

2 Dissemination plan

The HEALTHY FUTURES project which supported the refinement of the DSF had proposed a dissemination and communication plan which included the use of the (i) internet –i.e., posting the framework on a site that could enable the audience to provide feedback, (ii) presenting the DSF in stakeholder meetings and conferences, and (iii) distributing electronic and printed copies of the DSF to selected decision makers in the public and animal health sectors that were identified as being the key target audience. These interventions were expected to empower decision makers and increase their awareness and participation in RVF control. The first two dissemination methods were deemed

[2] These include the prediction of RVF occurrence based on satellite and meteorological data, onset of heavy rains, occurrence of floods, development of mosquito plumes, occurrence of initial cases in livestock and occurrence of initial cases in humans.

[3] Consultative Group for RVF Decision Support, 2010. Decision-Support Tool for Prevention and Control of Rift Valley Fever Epizootics in the Greater Horn of Africa. American Journal of Tropical Medicine and Hygiene. 83(Suppl 2), 75–85.

[4] The decision points are: **1**-Normal Phase; **2**-Early Warning; **3**-Pre-Outbreak; **4**-Outbreak; **5**-Step Down

to be the most promising as they could allow a two-way communication between researchers and the target audience.

The plan also identified the need to involve multiple partners to enable a wide geographical coverage and also access actors that were deemed to have a good influence. ILRI therefore partnered with various institutions including the Departments of Veterinary Services in Tanzania, Kenya, Uganda and Ethiopia, Zoonosis Disease Unit in Kenya, OIE, FAO, and African Union Interafrican Bureau for Animal Resources.

3 Milestones

- ***DSF uploaded to the project and ILRI websites and a blog written to disseminate the***

The framework was uploaded to both the ILRI (https://cgspace.cgiar.org/handle/10568/59781) and HEALTHY FUTURES (http://www.healthyfutures.eu/index.php?option=com_k2&view=item&layout=item&id=140&Itemid=267&lang=en) websites. The ILRI website shows that by the end of 2015, the page had had 108 views including 43 downloads. A blog was also written highlighting the linkages between El Nino and RVF epidemics in eastern Africa and providing a link for the DSF. This blog is available at: http://blogs.plos.org/globalhealth/2015/10/el-nino-predictions-signal-urgent-need-to-prepare-for-epidemic-in-eastern-africa/.

This medium could be used cheaply to reach a large group of audience. It is however known internet accessibility is poor in some countries and some people do not always have time to browse. The project therefore used this channel to augment other approaches that were being used.

- ***Decision makers trained on the utilization of DSF as part of the good emergency management practice (GEMP)***

ILRI participated in the implementation of GEMP training workshops organised by the Food and Agriculture Organization of the United Nations under the project "Collaborative International Engagement to Prevent and Mitigate Threats from Especially Dangerous Pathogens in Targeted East African Countries'' (OSRO/RAF/407/USA), funded by DTRA/CBEP. A total of six meetings (in Embu and Busia, Kenya; Morogoro and Mwanza, Tanzania; Kampala, Uganda and Addis Ababa, Ethiopia), each involving 25-30 participants were convened. These meetings aimed to build capacity on preparedness and control of key zoonoses. RVF was used as a case study disease since at the time of the trainings, initial warnings on El Nino occurrence had been given and there was a growing consensus that RVF would occur. A session was therefore devoted to DSF, with exercises to demonstrate its implementation procedures. Each meeting also had a desk top simulation exercise on RVF outbreak and participants used the DSF to identify measures that they could implement for each scenario posed. The program used in these trainings is given in Annex I.

These meetings were held between June and November 2015. All the participants of these workshops were issued with a hard copy of the revised DSF. These meetings were very effective as

there was good contact between the project team and the target audience. Questions raised by the workshop participants were addressed effectively.

- ***A presentation on DSF given at the OIE/FAO regional conference on RVF***

A presentation was given at a regional conference convened by OIE and FAO in Djibouti on 21-23rd April 2015. The proceedings of this meeting and the list of participants are available at http://www.rr-africa.oie.int/en/news/20150422.html. Conclusions reached during the meeting are presented in Annex II. With regards to the DSF, the meeting observed that: the *Decision Support Framework* developed by ILRI has been updated and can assist the countries at risk to assess their level of preparedness. This meeting was also effective as it brought together local and international stakeholders in one venue.

4 Outcomes

No surveys have been implemented yet to determine the impacts of the dissemination activities implemented but initial feedback from the participants of the various dissemination meetings suggest that the Kenya and Tanzania revised their Contingency Plans (CPs) and standard operating procedures (SOPs) using the DSF and other documents as the reference materials. Some counties in Kenya used the revised CPs, SOPs and DSF to implement RVF vaccination campaigns towards the end of 2015 when El Nino rains were expected.

5 Acknowledgements

Many people played important roles in this exercise. We specifically thank Bouna Diop, Sam Okuthe and Joshua Kimutai of UN FAO for allowing us to incorporate the DSF dissemination activities in their training workshops, Patrick Bastiaensen, OIE regional Office for facilitating the presentation given at the RVF Regional Conference in Djibouti; Niwael Mtui and Emmanuel Swai from the DVS Tanzania and Stella Kiambi, DVS Kenya for their support during the training workshops.

Annex I. Programme for the good emergency management practice (GEMP) training sessions

DAY 1		
8.00 – 8:30	**Registration of participants**	
Opening Ceremony		
8:30 – 9:00	• Welcoming remarks • Self introductions • Meeting objectives • Expectations • Opening address	
9:00 – 9:30	**Group photograph &Coffee/Tea break**	
Module 1 : Introduction to GEMP		
09:30 – 12:30	"GEMP: The Essentials'' Manual	Sam Okuthe
	Exercise	
	Emergency Disease Management: 5 stages	
	Key elements of Preparedness Planning	
	Exercise: Group Work	Facilitators
12:30 – 13:30	**Lunch break**	
Module 2: Command Structures		
13:30 – 15:30	Current organization of the DVS command structure in Emmanuel Swai (national and regional levels)	Emmanuel Swai
	Define the three command levels	Sam Okuthe
	Determine roles and responsibilities of each level of command	
	Incident Command Structure	
	Discussions	Facilitators
15:30 – 15:45	**Coffee/Tea break**	
Module 3: Planning and Preparedness		
15:45 – 17:30	Key elements of a Planning Preparedness	Niwael Mtui
	HR – Preparedness actors	
	HR - Critical human resources	
	Exercise	
17:30	End of Day 1	

DAY 2		
Module 3 : Planning and Preparedness		
08:30 – 10:30	Legal Framework	Niwael Mtui
	Financing	
	Compensation Policy	
	Discussion	
10:30 – 10:45	**Coffee/Tea break**	
Module 3 : Planning and Preparedness		
10:45 – 12:30	Surveillance	Bernard Bett
	Other elements to consider	
	Nature of a risk analysis and risk assessment approach	
	Exercise	
12:30 – 13:30	**Lunch break**	
Module 4 : Disease control, Detection and Surveillance systems and Respond		
13:30 – 15:30	Principles of infectious disease control: 3 pillars	Sam Okuthe
	Pillar 1 - Find infection fast	
	Pillar 2 - Eliminate infection quickly	
	Exercise	
	Pillar 3 – Stop the spread – biosecurity	
	Exercise – Movement restrictions	
	Exercise – Vaccination	
15:30 – 15:45	**Coffee/Tea break**	
Module 4 : Disease control, Detection and Surveillance systems and Respond		
15:45 – 17:30	Contingency plan and its components	Sam Okuthe
	Apply key principles to an outbreak response	
	RVF Decision Support Framework	Bernard Bett
	Exercise	
17:30	End of Day 2	

DAY 3		
Module 5: Recover		
08:30 – 10:30	Requirements and challenges for verification of freedom of disease	Niwael Mtui

	Role of Veterinary Services in recovery	
	Verification of freedom of disease	
	Staying free	
10:30 – 10:45	**Coffee/Tea break**	
Module 6. Implementing GEMP principles		
10:45 – 12:30	Implementing GEMP principles	Sam Okuthe
12:30 – 13:30	**Lunch break**	
Simulation exercise		
13:30 – 14:00	Introduction	Sam Okuthe
14.00- 15.30	Group Work	
15:30 – 15:45	**Coffee/Tea break**	
Simulation exercise		
15.45-17.30	Group Work	Emmanuel Swai
17.30	End of day 3	
DAY 4		
Simulation exercise		
8.30 – 10.30	Group Work Presentation and Discussion	Bernard Bett
10:30 – 10:45	**Coffee/Tea break**	
Recommendations, Evaluation & Closing ceremony		
11.00 – 12.00	Recommendations and Way forward	Niwael Mtui
12.00 – 13.00	Evaluation of the workshop	
	Closing remarks	

Annex II: Conclusions of the Inter-Regional Conference on Rift Valley Fever: New Options for Trade, Prevention and Control, Djibouti, 21-23 April 2015

Considering that

- RVF is recognised as a priority disease for the Horn of Africa and Middle East regions and has been integrated into the regions' 5-year action plan for GF-TADs
- RVF is a zoonosis and causes significant socio-economic impact during times of outbreak
- Livestock trade between the Greater Horn of Africa and the Gulf countries is of significant importance to reduce poverty in the region especially in vulnerable populations such as pastoralist communities and women.
- The OIE has followed up on recommendations by previous meetings and has revised the Code Chapter on RVF including provisions for safe trade during inter-epizootic as well as during epizootic periods
- The tripartite (FAO, OIE, WHO) has developed a One Health tool to facilitate reviews of competencies at the interface between Animal and Human Health Services
- The probability of new RVF outbreaks in the countries at risk such as Kenya, Somalia, Uganda, Tanzania, Sudan and South Sudan is high, given that this is year 8 after the last outbreaks and the high probability of a medium to strong El Nino event during the coming season, which may lead to above normal rains during the latter half of the year. Therefore the countries should consider standing between the *Early Warning* Phase and the *Alert Phase*
- The *Decision Support Framework* developed by ILRI has been updated and can assist the countries at risk to assess their level of preparedness
- Despite promising progress in research on vaccines of greater safety, with DIVA characteristics, longer immunity and improved stability, there are no new vaccine candidates as yet on the market and the Clone 13 vaccine is still only registered in South Africa and Namibia
- Limited availability of diagnostic serological tests in form of commercially available kits or reagents has been noted

The Conference concludes:

That countries in the regions should develop an attitude of preparedness rather than reactivity once a crisis is imminent.

On surveillance, outbreak prevention and early response

- Countries to recognise that RVF outbreaks might occur in the region within the next 18 months, given the extended time period of 8 years since the last outbreaks and the ENSO prediction indications, and are urged to make the following preparations:

    - Urgently develop, evaluate and update, when appropriate, their national Contingency Plans using a One Health approach, e.g. by using the tools developed jointly by OIE/FAO/WHO (Integrated IHR – PVS tool[5] and Trans-sectoral Coordination Framework[6])
    - develop concrete national action plans for the Early Warning Period based on the updated Contingency Plans and the updated Decision Support Framework
    - The national action plans should be prioritised and include updated risk maps and estimation of animal numbers in the risk areas
    - Countries should heighten surveillance in high risk areas, e.g. increased monitoring of sentinel herds where available; and increased surveillance in markets or places where large numbers of animals are traded or congregate
- Countries previously affected by RVF should consider to start carrying out targeted vaccination campaigns in high risk areas
- Regional organisations incl AU-IBAR, IGAD and AU-Panvac should assist countries at risk to develop a detailed vaccination policy strategy based on the national risk maps
- International and regional organisations are encouraged to support this concrete action operational planning, preferably within the framework of already ongoing existing projects or within joint advocacy platforms for donor funding

On vaccine development

- Vaccine producing laboratories are encouraged to speed up the process to commercialise candidate vaccines in order to overcome the shortcomings of the currently existing vaccines such as availability, safety, stability and DIVA properties
- AU-Panvac with the support of AU-IBAR is encouraged to carry out quality assessment of existing vaccines as well as an assessment of the production and delivery capacity of vaccine producers of registered vaccines (Smithburn, Inactivated, Clone 13) within a short time period
- OIE in collaboration with AU-PANVAC and IGAD to facilitate the establishment of RVF vaccine banks at regional level based on the results of the aforementioned assessment

On diagnosis of RVF

- Reference Laboratories and pharmaceutical companies are encouraged to increase the production of reagents necessary for serological detection of RVF IgM and IgG and to increase collaboration with AU-Panvac for the evaluation, quality control, production and distribution of diagnostic assays/reagents to national laboratories
- Reference laboratories are encouraged to continue capacity building activities on RVF diagnosis and to consider twinning programmes within the framework of the OIE.

On trade

[5]www.oie.int/en/for-the-media/press-releases/detail/article/bridging-who-and-oie-tools-to-better-control-global-health-risks-at-the-human-animal-interface/

[6]http://web.oie.int/boutique/index.php?page=ficprod&id_prec=1308&id_produit=1435&lang=en&fichrech=1&PHPSESSID=788e271d58b0b868758653a786a1584c

- Countries are encouraged to translate the revised Code Chapter into their national legislation and regulations and reinforce its application; and to exchange information with trade partners on disease situation in their countries
- Veterinary Services should regularly audit quarantine stations for compliance with national regulations.

On communication

- International and regional organisations are urged to communicate these recommendations jointly via a Press Conference to attract sufficient attention
- National authorities should also disseminate these recommendations at national level
- Develop awareness campaigns among vulnerable populations such as farmers, abattoir workers, and other stakeholders
- Establish regular communication channels between public health and veterinary authorities to ensure disease surveillance results are timely reported.