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Enhancing prevention and control of Rift Valley Fever in East Africa by intersectoral assessment of control options

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Ministry of
Livestock
Development



Rift Valley Fever

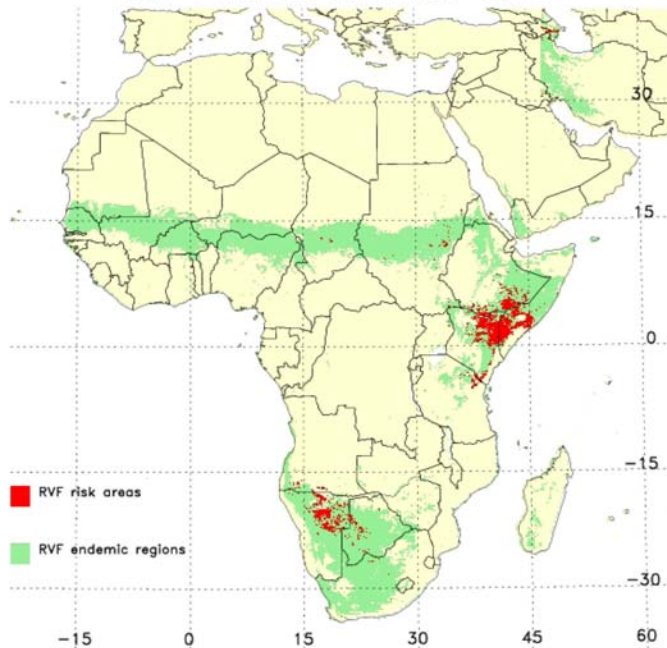
- Viral zoonosis affecting ruminants and human beings
- Trade sensitive
- First reported in 1930's, Kenya
- Reported in Eastern and Southern Africa, Egypt, Middle East
- 1997/1998 and 2006/2007 were the largest outbreaks in Kenya
 - 90,000 human cases and 728 humans deaths
- Animal RVF is mosquito-borne.
- Human get infected through contact with infected animals and products



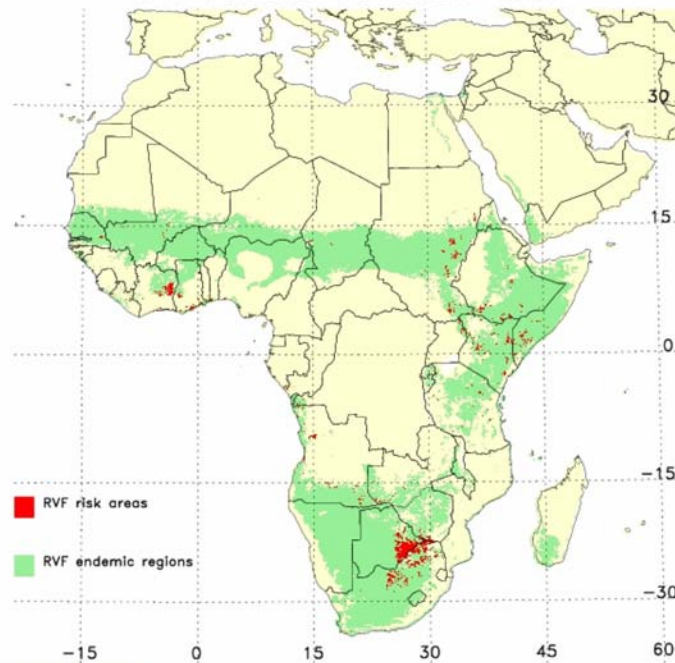
Correlation between RVF and climate

- Correlation between RVF outbreaks, rainfall and Indian Ocean sea surface temperatures
- RVF outbreak prediction models use remotely-sensed environmental indicators
- Dec 2006: high RVF risk was predicted for eastern Africa, -outbreaks occurred
- Dec 2007: high risk predicted for s/ Africa, outbreaks occurred
- RVF epidemic in Madagascar
- Nov 2008: alert for e/ Africa, but no outbreak

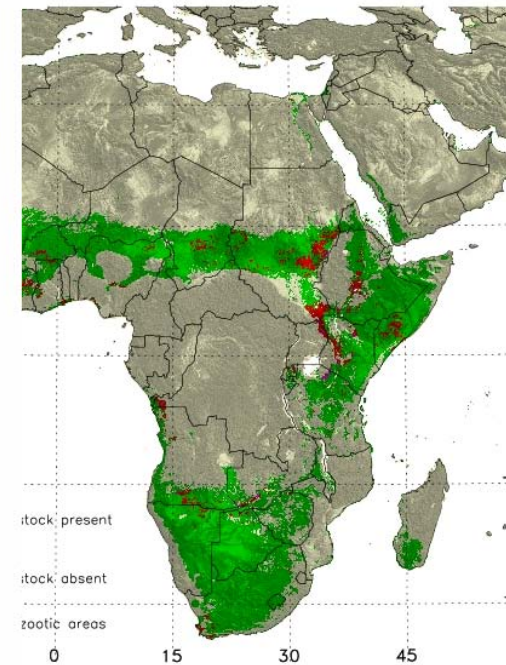
RVF Potential December 2006



RVF Potential December 2007



RVF Potential November 2008



Lessons learnt from 2006/2007 RVF outbreak in Kenya

- Severe socio-economic consequences as a result of:
 - delayed detection and response
 - Lack of emergency plans,
 - poor risk communication and inadequate information flow
 - Inadequate collaboration between the sectors
 - Lack of emergency fund
- Control of RVF in the livestock sector is most effective
- Improved cooperation between health and livestock sectors is critical
- Need to undertake a comprehensive socio-economic assessments of RVF and its alternative control programmes to establish cost-effective and achievable strategies
 - *reason behind this follow up project*

Objectives of the Project

Overall

To provide evidence-based recommendations on control options for more appropriate allocation of limited resources and to facilitate multisectoral RVF planning

Specific

- Identify the nature of information needed by line ministries for planning of future outbreak management
- Assess cost-effectiveness of control options and prioritize them from a multi-sector perspective
- Make recommendations for institutional change based on one health concept to enhance response capacity to mitigate future outbreaks and control of zoonoses (RVF, HPAI etc)

Methodology

- Three-year project in Kenya
- PhD in socio-economics and medical students
- 5 partner institutions
- Build on information collected during a rapid assessment of the last outbreak

<i>GOK: MLD-DVS</i>	Project implementation, e.g. linking public sectors' stakeholders, operational framework
<i>ILRI</i>	Socio-economic impacts of RVF along the market value chain
<i>KEMRI & CDC</i>	Human health epidemiology and diagnosis
<i>Egerton</i>	Socioeconomic impact of RVF; workshops
<i>STI</i>	Assessement of cost- effectiveness of control options

Approaches to Define Needed Information

- Stakeholder analysis (public and private organisations and institutions involved in zoonoses prevention and control)
- Interviews with key informants at central and district level: nature and precision of required information, contingency planning tools, and potential of intersectoral cooperation
- National workshop to identify researchable missing information and priority control options to be subjected to cost-effectiveness analysis

Approach to Assess Cost-effectiveness of Control Options

- Evaluate/Asses/Establish
 - Selected priority control options
 - Public and private sectors RVF control costs (Delphi study)
 - Disability-adjusted live years (DALYs) for RVF in Kenya
 - Human incidences, morbidity and mortality
 - Micro and macro levels costs of the disease
- Compare with and without control outcomes
 - Simulation of epidemic and inter-epidemic
 - livestock to human and
 - mosquito-livestock transmission
- Cost-effectiveness for the public health sector: costs per DALY averted.
- Demonstrate monetary benefits of control for different sectors

Approach Towards Institutional Change

- Regional workshop (3rd year) to initiate regional collaboration (notably Tanzania, Somalia, Burundi and Sudan)
- Recommendations for an operational multisector framework
 - cooperation and improved coordination between all players
 - development of a decision tool for RVF specifically and for zoonotic diseases in general
- Incorporation of recommendations in a contingency plan

Outputs

- Key information required for evidenced based policy making for zoonoses preparedness and planning
- Recommendations on an operational framework to enhance institutional capacity to respond to RVF and other zoonoses
- Impacts of RVF and disease burden
- Costs and benefits of priority RVF prevention and control measures for multiple sectors
- Capacity-building of two Kenyan doctoral students
- Two comprehensive workshop reports, 5 peer-reviewed articles, one policy brief, and other communications to disseminate results beyond research institutes

Outcome and Policy Impact

- Greater awareness of linkages and societal impact of zoonoses & commitment to mitigate in the region
- Enhanced capacity for sustained collaboration between agriculture and health sectors regionally and nationally
 - better integrated and preparedness, more effective policies, and better response to future outbreaks
- Institutionalization of multisectoral RVF control through a joint operational framework
- Provide and inform other Eastern Africa countries with a tool for development of a regional RVF strategy
- Successful multisectoral policy making and planning of RVF can be adapted and applied to other zoonoses

Beneficiaries

- Affected households who bear costs of:
 - Human and animal deaths
 - Reduced income and resulting food insecurity
 - Diagnosis and treatment of patients
- Traders in livestock and livestock products
- Provinces and districts: continuation with development and poverty alleviation programmes
- The line ministries, notably of public health and livestock
 - Assisted in cost-effective allocation of limited resources
- Funding agencies
 - Benefit from more concerted actions between key partners and better return of investments

Relevance to AHRP

- Improved RVF control, will mitigate negatives impacts of livestock on public health and vis versa
- Addresses stakeholders' perceived need for better cooperation between sectors - health and livestock sectors, for effective RVF control
- Builds on partners' experience in interdisciplinary and intersectoral collaborations in research on zoonoses and public engagement
- Cost-effective allocation of scarce resources of public services contributes to the strengthening of health systems in a way that one sector cannot offer alone
- Promoting intersectoral participation and cooperation adds value to the international advocacy efforts on zoonoses