



Policy Landscaping Study of RVF Control in Eastern and Southern Africa

Prepared for GALVmed
by Peter G. Sinyangwe, Ph. D

May 2013



Protecting Livestock – Improving Human Lives



Copyright Peter Sinyangwe. Any views expressed,
do not necessarily represent those of GALVmed.

Contents

1	Introduction	1
2	Rift Valley fever Overview	1
2.1	Rift Valley fever	1
2.2	Control of RVF in livestock	1
2.3	Vector control	2
3	Objectives	2
4	Methodology	2
5	Key Findings	2
5.1	Control of RVF in Eastern Africa	2
5.1.1	Control of RVF in Kenya, Ethiopia and Tanzania	3
5.1.2	Kenya	7
5.1.3	Tanzania	8
5.1.4	Ethiopia	8
5.2	Control of RVF in Southern Africa	10
5.2.1	Control of RVF in Namibia, Zimbabwe, Botswana and South Africa	10
5.2.2	Namibia	14
5.2.3	Botswana	14
5.2.4	Zimbabwe	14
5.2.5	South Africa	14
6	Feasibility of an African wide RVF vaccine bank	19
6.1	Concept	19
6.2	Key Points for consideration	20
7	Policy analysis and Conclusions	20
7.1	Policy analysis	20
7.2	Conclusions	21
8	Recommendations	22
8.1	Specific recommendations	22
8.2	General recommendations	22
9	References	23
APPENDIX I:	SUMMARY OF FINDINGS	24
APPENDIX II:	GENERAL TERMS OF REFERENCE	26
APPENDIX III:	LEGISLATION	28
APPENDIX IV:	LIST OF RESPONDENTS	29
APPENDIX V:	POLICY LANDSCAPING STUDY QUESTIONNAIRE	31

Acronyms

AU	African Union
CBPP	Contagious Bovine Pleuropneumonia
DRC	Democratic Republic of Congo
EAC	East African Community
FAO	Food and Agriculture Organisation of the United Nations
FMD	Foot and mouth disease
IBAR	Inter-African Bureau for Animal Resources
ILRI	International Livestock Research Institute
KEMRI	Kenya Medical Research Institute
KEVEVAPI	Kenya Veterinary Vaccine Institute
LSD	Lumpy Skin Disease
LTC	Livestock Technical Committee
OBP	Onderstepoort Biological Products
OIE	World Organisation for Animal Health
RVF	Rift Valley Fever
S&G	Sheep and goat
SGP	Sheep and Goat Pox
SADC	Southern African Development Community
TADs	Transboundary Animal Diseases
UN	United Nations



1 Introduction

Rift valley fever (RVF) has been experienced both in Eastern and Southern Africa regions and beyond since its discovery and isolation of the virus. The current control measures include application of animal vaccines: live attenuated Smithburn and inactivated vaccines. They have their own shortcomings and challenges when applied under prevailing field conditions. The mode of vaccine application and regulations of these vaccines are dependent on the existing national policies.

GALVmed is supporting the development of safe and efficacious RVF vaccine products at Onderstepoort Biological Products (OBP) for future use in Eastern and Southern Africa. GALVmed also wishes to consider the feasibility of establishing an Africa wide RVF vaccine bank hosted by OBP in South Africa. In order to gain a better understanding of potential issues and concerns, a Policy Landscaping Study was commissioned by GALVmed.



2 Rift Valley Fever Overview

2.1 Rift Valley fever

Rift Valley fever (RVF) is a viral zoonosis that primarily affects animals but also has the capacity to infect humans. Infection can cause severe disease in both animals and humans. The disease also results in significant economic losses due to death and abortion among RVF-infected livestock populations.

The RVF virus is a member of the Phlebovirus genus, one of the five genera in the family Bunyaviridae. The virus was first identified in 1931 during an investigation into an epidemic among sheep on a farm in the Rift Valley of Kenya. Since then, outbreaks have been reported in sub-Saharan and North Africa. In 1997 – 98, a major outbreak occurred in Kenya, Somalia and Tanzania and in September 2000, RVF cases were confirmed in Saudi Arabia and Yemen, marking the first reported occurrence of the disease outside the African continent and raising concerns that it could extend to other parts of Asia and Europe.

2.2 Control of RVF in livestock

A sustained programme of animal vaccination can prevent outbreaks of RVF in animals. Both modified live attenuated virus vaccines and inactivated virus vaccines have been developed for veterinary use. The modified Smithburn vaccine has been widely used in Eastern and Southern Africa to protect chiefly the exotic and crossbreeds of goats, sheep and imported cattle. The vaccine is affordable and easily produced. Only a single dose of the live vaccine is required to provide long-term immunity. It is quite safe when used in non-pregnant adult animals and relatively resistant genotypes. The modified Smithburn vaccine that is currently in use may result in spontaneous abortion if administered to pregnant animals. Foetal abnormalities may occur particularly when pregnant sheep are vaccinated in the first trimester of pregnancy. Pregnant cattle of *Bos taurus* and *Bos indicus* breeds seem to tolerate the vaccine well. The inactivated virus vaccine does not have this side effect, but multiple doses are required in order to provide protection which may prove problematic and costly in endemic areas. In addition, the vaccine on its own is quite expensive.

With the current live vaccines in use, animal immunization must be implemented prior to an outbreak if an epizootic is to be prevented. However, a value judgment would need to be made as to whether all animals are to be vaccinated. Once an outbreak has occurred and evidence of RVF virus transmission is detected, animal vaccination should be discontinued with immediate effect because there is a high risk of intensifying the outbreak.

Local animal health authorities may wish to impose movement controls within their geographical areas during RVF epizootics and even suspend slaughter activities. This may be effective in slowing the expansion of the virus from infected to uninfected areas.

2.3 Vector control

Currently the options for insect control programmers as components of RVF mass vaccination campaigns are limited. Ultra-low volume insecticide spraying as the technique used in Tsetse control may be useful though costly. Larvicidal treatment of potential mosquito breeding sites is the most effective form of vector control.



3 Objectives

GALVmed is aware that countries in Eastern and Southern Africa differ in their approach to RVF control. As part of the preparation in making the RVF products available to various markets in Eastern and Southern Africa, GALVmed would like to do a policy landscaping study to understand the policies, legislations,

regulations and practices in RVF control in these two regions. The study therefore consists of an in-depth review of the policy, regulatory mechanisms, administration and practice of RVF control in Eastern and Southern Africa. The study also incorporates the feasibility of an African RVF vaccine bank.

4 Methodology

The study sought to cover sixteen (16) countries (South Africa, Namibia, Botswana, Zimbabwe, Tanzania, Kenya, Ethiopia, Malawi, Mozambique, Zambia, DRC, Uganda, Rwanda, Burundi, Swaziland and Lesotho). A Policy landscaping questionnaire was prepared and sent to representatives of all the 16 study countries who all replied with the exception of Rwanda. The consultant visited all of the seven countries considered critical to this study (Namibia, Botswana, Zimbabwe, Tanzania, Kenya and Ethiopia) with the exception of South Africa where

gaining access proved to be a challenge. Where visits were possible, interviews were conducted with the Veterinary Directorate staff, private sector, farmers and representatives of Veterinary Associations. Follow up phone interviews were conducted for some countries regarding questionnaire clarifications. Throughout the consultation process, the consultant examined primary and secondary sources of relevant literature including Acts of Parliament, national policies and other livestock policy related material.

5 Key Findings

5.1 Control of RVF in Eastern Africa

East Africa RVF outbreaks have been recorded to occur on average at intervals of around a decade but occasionally twice as long. The 2006/07 RVF epizootic in East Africa was challenging to deal with particularly in Kenya and Tanzania. Veterinary and Public Health authorities had to look at various options to prevent and control these RVF epizootics,

thereby significantly reducing the scale of impacts of the disease on lives, livelihoods and local, national and regional economies. The major disease control practice has been through vaccination against RVF in Eastern Africa using the currently available freeze-dried live attenuated RVF vaccine prepared from Smithburn's attenuated strain of RVF virus with occasional supplies of OBP vaccine.

5 Key Findings



5.1.1 Control of RVF in Kenya, Ethiopia and Tanzania

The governments of Kenya, Ethiopia and Tanzania have full control of RVF and their control policies are in place. Except for Ethiopia (no vaccination), continuous yearly vaccination is practiced using the KEVEVAPI and OBP vaccines procured by governments and given to farmers as a public good (see Tables 1a, 1b & 1c). They draw their authority from relevant national Animal Health Acts (see Appendix III).

Although RVF control policies have been in existence for a long time in both Kenya and Tanzania, they have not been reviewed regularly. The privatization of some of the then veterinary services core functions such as livestock vaccinations, veterinary drugs and biologicals distribution without prior review of the policies has negatively influenced on livestock interventions by the private sector. Sub-contracting some of these

activities to the private sector by governments would normalize the current policy perception and practices. The overall general remedy both in Eastern and Southern African regions is to review the control policies holistically. The challenges encountered in RVF control policies are not different from TADs control policies in the two regions; this further strengthens the argument for a regional wide policy review approach. Training of trainers in policy formulation is more urgent than ever before.

After reviewing the disease control policies then veterinary legislation can be tackled on a regional basis. Veterinary legislation is the major national reference tool and more often than not, overtakes the roles of policies in most given situations. There is an urgent need to align the outdated veterinary laws in order to address the current global livestock issues.

Table 1a Rift valley fever control and the type of vaccines applied (Kenya, Tanzania and Ethiopia)

Situation	Kenya	Tanzania	Ethiopia
Approach to RVF control	Continuous yearly vaccination is practiced in areas designated as “Hotspots” these are areas of high population and human economic activities. Flooding creates a recipe for mosquito breeding.	Only the yearlings are vaccinated particularly in areas that experienced the 2007 major outbreaks. Approach seems more practical and economical.	No vaccination at all is carried out in the country; no disease has been reported in the last 20 years although there is a threat on the border with Somalia (South). Control approach is no vaccination at all.
Form of vaccine used	Live attenuated RVF Vaccine marketed as RIFTVAX, freeze dried and prepared from Smithburn’s attenuated strain of RVF, produced by Kenya veterinary Vaccine Production Institute (KEVEVAPI). In 2007/8 outbreaks, OBP vaccine was purchased and applied in various parts of the country.	OBP Live attenuated Smithburn vaccine.	No vaccine is used, justifiably so because the disease is absent.
Vaccine trials	OBP Clone 13 RVF vaccine on trial: “Safety and efficacy of OBP Clone 13 RVF vaccine in Sheep, goat and cattle under Kenyan field conditions” The results are extremely encouraging.	Tanzania would have loved to take part in the vaccine trials that are taking place in Kenya.	Veterinary authorities noted with appreciation the efforts being put in safe vaccines development by GALVmed.

Table 1b Regulation and control of RVF, LSD and Sheep and Goat Pox Vaccines (Kenya, Tanzania, and Ethiopia)

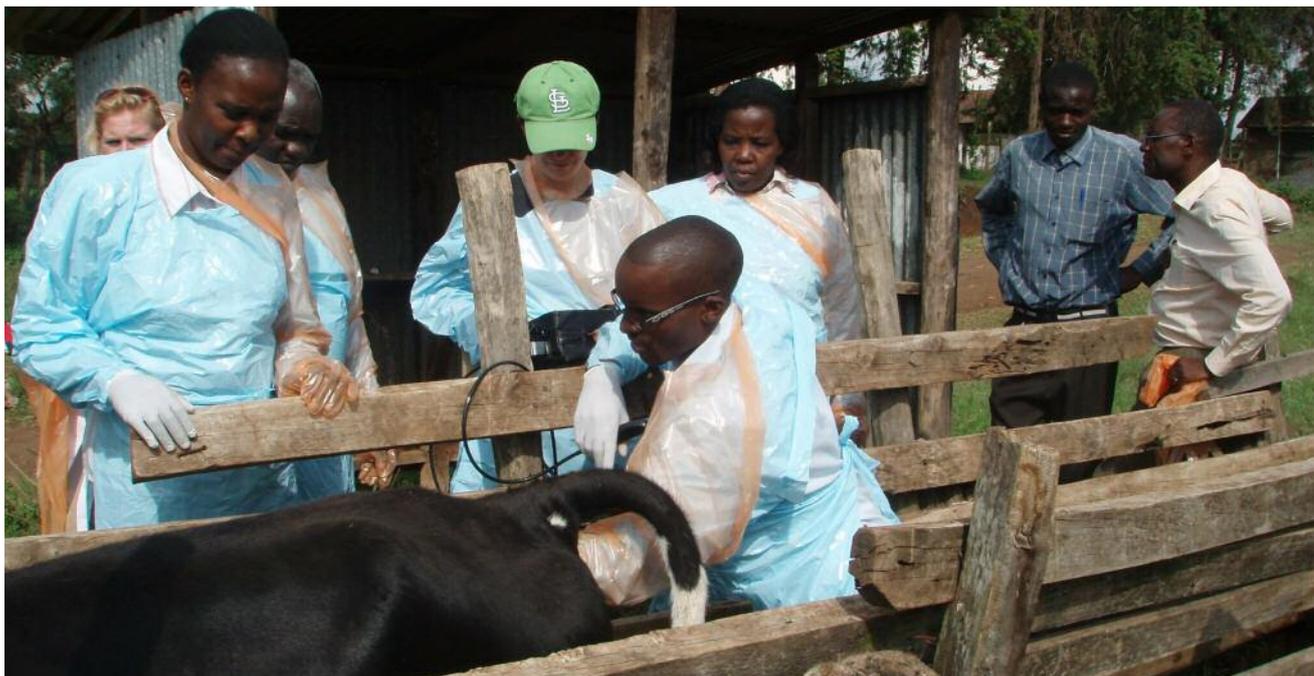
Vaccine Type	Kenya	Tanzania	Ethiopia
Rift Valley Fever (RVF)	<p>Procured, distributed and administered/applied in the field by government veterinary personnel. Government has total control over the vaccine. <i>(The official position is not necessarily the practice on the ground)</i></p> <p>Public good, vaccine is prepared from Smithburn's attenuated strain of RVF virus locally.</p>	<p>Procured, distributed by Central government and administered/applied in the field by Local government veterinary personnel. Currently the disease is not on a veterinary priority list but of public health importance, hence a public good.</p> <p>OBP Live attenuated Smithburn vaccine.</p>	<p>Not procured by the State or private sector.</p> <p>The No vaccination practice holds.</p>
Lumpy Skin Disease (LSD)	<p>Procured, distributed and administered/applied in the field by public and private sector at a fee.</p> <p>Vaccine prepared from the Neethling strain of the virus at KEVEVAPI</p>	<p>Procured, distributed and administered/applied in the field by public and private sector at a fee.</p> <p>OBP vaccine used</p>	<p>Sheep and goat pox vaccine is applied by the State because of its cross-protection properties. The service provided is treated as a public good.</p> <p>Source of vaccine: Debre Zeit.</p>
Sheep and Goat Pox	<p>Procured, distributed and administered/applied in the field by the public, private sector and farmers. Vaccine prepared from the 0240 Kenya sheep and goat pox strain of the <i>capripoxvirus</i>, marketed by KEVEVAPI.</p>	<p>Procured, distributed and administered/applied in the field by the private sector and farmers.</p> <p>OBP vaccine used</p>	<p>Procured, distributed and administered/applied in the field by public sector. (Public good).</p> <p>Source of vaccine: Debre Zeit.</p>

Rift Valley Fever (RVF) vaccine is procured, distributed and administered/applied in the field by government veterinary personnel. Government has total control over the vaccine. (The official position is not necessarily the practice in real life).

Public good, vaccine is prepared from Smithburn's attenuated strain of RVF virus locally.

Table 1c RVF Control Policies and challenges (Kenya, Tanzania, and Ethiopia)

Control Policy	Kenya	Tanzania	Ethiopia
RVF control policy	Having experienced the 1st outbreak in the 1930s, a control policy has been put in place. Contingency plans are also in place. A circular letter of 2009 by the DVS has become an annual reminder to the veterinarians in RVF risk areas. RVF is treated as a public good. Government is in full control on all matters of RVF.	There is an existing specific policy and RVF is government controlled. Treated as a priority TAD, with great public health prominence. The National RVF Emergency Preparedness and Response Plan is ready but yet to be signed by the Minister responsible for livestock. Treated as a public good.	Not procured by the State or private sector. The No vaccination practice holds.
LSD control policy	Specific policy in place and controlled by the private sector. The Veterinary Epidemiology and Economics Unit, DVS is notified and where possible the Epidemiology Section monitors the field situation.	There is a policy, but the government only moves in when the disease affects poor communities, otherwise the private sector is the main actor.	Policy in place and treated as a public good. Export animals are vaccinated using Sheep-goat pox locally produced vaccine (importer demand driven), State controlled.
Sheep & goat pox control policy	Specific policy in place and controlled by the private sector, monitored by the government.	No policy in place, not a priority area and controlled by the farmers and the private sector.	Policy in place and treated as public good. Export animals are vaccinated using local vaccine (importer demand driven), State controlled.
Use of multivalent vaccines	Concept supported for use in selected areas.	Concept supported, providing the product is state registered, both private vets and farmers would apply it in the field without government control.	Concept not practical and not supported by the State, taking into consideration the three-disease occurrence patterns.
Buying into the concept of the RVF vaccine bank	Concept strongly supported by the Veterinary Directorate, Kenya Veterinary Association and KEVEVAPI. Physical location and manufacturer are not an issue to setting up the v/bank.	Concept not very well taken, Directorate needs more time to think through it and proposes an EAC/SADC study followed by a stakeholders meeting (DVS and a Public Health Expert /country). Bank establishment would bind the Department to a single source contrary to existing procurement procedures executed through tenders.	Concept accepted providing issues of governance are well articulated before the State can buy into the vaccine bank. PANVAC at Debre Zeit was proposed as a vaccine bank location for the EAC.
Use of RVF Penside diagnostic assay	Very well supported as a field tool, KEVEVAPI offered itself as a regional market outlet.	Very well supported, for RVF screening before confirmatory tests are carried out.	Supported, to be used particularly in the threatened border areas.



5.1.2 Kenya

The last major outbreak occurred in December 2006 with the last case being confirmed in June 2007. The OIE, EAC and AU-IBAR were immediately notified. The outbreak was preceded by heavy prolonged rainfall that caused flooding in most of North Eastern, Coast provinces and other parts of the country. The outbreak was first detected in humans in Garissa district in early December 2006. 162 human deaths had occurred by the time the outbreak was brought under control. The livestock sector suffered a loss of more than 4 billion Kenyan shillings. During this outbreak, the veterinary Department did not quantify the deaths and abortions due to RVF. In response to the predicted threat of RVF following an above average seasonal precipitation, 1,050,000 doses of RVF vaccine were administered to vulnerable species in identified RVF hotspots in the country as a public good.

The participatory assessment carried out by International Livestock Research Institute (ILRI) and the Government of Kenya, Department of Veterinary services, revealed that Kenya lacked a well documented Contingency/Emergency Plan and lacked Pre-allocated emergency funds. This was further amplified by a study: *Enhancing Prevention and Control of RVF in East Africa by Intersectoral Assessment of Control Options*¹. The study was conducted by a consortium of organizations (Ministry of Livestock Development, Swiss Tropical Institute, ILRI, Egerton University

and Kenya Medical Research Institute-Centre for Disease Control (KEMRI-CDC).

Locally produced vaccine and additional imported vaccine (OBP product) were used in the mass campaigns, this programme cost billions of Kenyan shillings. Post vaccination abortions in pregnant ewes were experienced with the local vaccine.

In order to be prepared in the near future a circular letter of 7th October 2009 (RVF/9/VOL.3/82)², addressed to all Provincial Directors of Veterinary Services, All District Veterinary Officers has become an annual reminder for SURVEILLANCE FOR RIFT VALLEY FEVER and reads in part:

“In order to prevent a recurrence of the last events (2006/7) you are hereby requested to place your early warning systems on higher alert to mitigate against the occurrence of RVF in both livestock and humans as follows:

- 1) *Passive surveillance....*
- 2) *Active surveillance....*
- 3) *Community sensitization....*

Early detection of the disease is important in order to minimize the impacts of disease in both human and livestock and reduce the cost of controlling the disease. Signed by Director of Veterinary and Services and copied to Permanent Secretary, Ministry of Livestock Development.”

The Kenya experience exposed some of the shortcomings veterinary services are faced with despite having disease control policies in place. These shortcomings include:

- Lack of pre-allocated emergency disease control funds
- Loss of institutional memory
- Lack of well documented contingency/emergency plans for RVF and other diseases
- Delays in recognizing risk factors and taking decisions to control and prevent diseases
- Prioritization of diseases



5.1.3 Tanzania

An outbreak of RVF in December 2006 mainly in the central region of main land Tanzania claimed many lives of humans and livestock. The vaccination programme using the OBP vaccine started late in February 2007 according to the RVF control policy. On June 18 2007, the Ministry of Livestock announced that the RVF outbreak had been brought under control *“There are no more cases of the viral disease in livestock, the disease is now under control”*, Charles Mlingwa, Deputy Minister for Livestock Development, said in Dodoma.

Between January and May 2007, 143 human lives had been lost, some 5,610 cattle, 6,896 goats and 3,998 sheep died. Considering that RVF is an important TAD and whose priority is high on the public health scale, the human fatalities triggered the release of operational funds to the livestock sector. There was a time lag between the declaration of the outbreak and mounting the mass vaccination campaign. The magnitude of the severity of RVF was exacerbated by delays in disease control decision making and timely resource mobilization. If an effective Contingency/Emergency Plan was in place, the picture would have been different and cost less.

A total sum of about USD 3.84 million was spent to curb the outbreak. The bulk of the money was spent on vaccine importation and field operations logistics. The Tanzanian experience clearly demonstrates the priorities of regional governments in resource mobilization and allocation. The loss of human lives is what triggered the release of the monies despite having lost scores of livestock much earlier. The “One-Health” concept was not realized early enough.

An acaricide subsidy programme using Pyrethroid based acaricide was established in 2007 with the major objective of controlling the ticks on animals hence tick-borne diseases. The government puts in 40% while the rest is met by the farmer. This sustainable programme has proved to be very popular among livestock keepers. The government has made a commitment to undertake this particular activity through provision of such funds made available annually. The programme is countrywide in coverage and includes areas that had experienced RVF and LSD major outbreaks. The residual effects of the acaricide have been used to control mosquito and tick levels. If this is the case then the vector is being controlled continuously. However, a concept paper is in preparation to authenticate the above claims.

5.1.4 Ethiopia

Except for keeping a watchful eye on the borders, there was no major RVF activity in form of vaccinations or surveillance taking place during the 2006/7 outbreaks in Tanzania and Kenya. A no vaccination control strategy remains in place.

In the rest of the Eastern African study countries, the disease picture is slightly different. In Uganda and Burundi there are no RVF control policies in place and no RVF vaccine is applied since the disease has never been reported (see Tables 2a and 2c). Similarly Uganda and Burundi have no LDS, sheep and goat pox policies and no respective vaccines have been applied although the disease has been reported in Uganda. Lumpy skin disease has been experienced in both Uganda and Burundi. In the absence of the LSD policy, the public and the private sector have applied vaccines from OBP and KEVEVAPI vaccine manufacturers. Rwanda did not respond to the questionnaire throughout the entire consultation period therefore their position is not known.

Table 2a Rift valley fever control and the type of vaccines applied Regulation and control of RVF, LSD and S&G pox Vaccines (Uganda, Burundi and Rwanda)

Situation	Uganda	Burundi	Rwanda
Approach to RVF control	Disease never reported.	Disease never reported in the country.	No response
Form of vaccine used	No vaccine applied.	No vaccine application.	No response
Vaccine type Rift Valley Fever (RVF)	No vaccine application.	No vaccine application.	No response
Vaccine type Lumpy Skin Disease (LSD)	Procured by government and private sector, applied in the field by public and private vets. Vaccine procured from OBP.	Procured and distributed by the private sector; administered/applied in the field by Farmers & private Veterinarians. KEVEVAPI vaccine product.	No response
Vaccine type Sheep & Goat pox	Disease reported in goats only.	Disease has not been reported, no vaccine application.	No response

Table 2b RVF Control Policies and challenges (Uganda, Burundi and Rwanda)

Control Policy	Uganda	Burundi	Rwanda
RVF control policy	No policy in place, government controlled.	There is no existing government specific policy.	No response
LSD control policy	No policy in place.	There is no existing government specific policy.	No response
Sheep & goat pox control policy	No policy in place.	There is no existing government specific policy.	No response
Use of multivalent vaccines	Not supported.	Not supported.	No response
Buying into the concept of the RVF vaccine bank	Supported.	Not supported, since there is no justification for RVF vaccination yet.	No response
Use of RVF Penside diagnostic assay	Supported for rapid screening.	Not very necessary.	No response

5.2 Control of RVF in Southern Africa

In the Southern African region, although the disease pattern is slightly different from that of EA, the control challenges are almost similar. Since its identification in Kenya in 1930, periodic epidemics have occurred in South Africa, Namibia, Mozambique, Zimbabwe and Angola. In later years Botswana, Malawi and Zambia have also experienced the disease. South Africa has experienced the disease longest while the disease is sporadic in other countries. Mode of prevention is through vaccination of livestock using the OBP vaccine or no vaccinations at all in some countries.

5.2.1 Control of RVF in Namibia, Zimbabwe, Botswana and South Africa

The governments of Namibia, Zimbabwe, Botswana (in progress) and South Africa have their RVF control policies in place. In South Africa RVF is a notifiable disease but its prevention and control activities are not government controlled. RVF is notifiable in Namibia, Zimbabwe and Botswana but vaccine procurement and application is done by both the private sector

and the state. Emergency vaccination approach is applied in the region using OBP vaccines (see Tables 3a, 3b and 3c). Botswana applied the inactivated vaccine during the mass vaccination campaign following the 2010 RVF outbreak. The countries in the region draw their authority from relevant national Animal Health Acts (see Appendix III). All countries who responded to the questionnaire indicated they are willing to use the RVF Penseid diagnostic assay as a screening tool. All the countries in the Southern African region have supported the establishment of the vaccine bank.

Except for South Africa, control policies are not in place for LSD in Namibia, Zimbabwe and Botswana. All four countries have introduced the OBP vaccine in their vaccination programmes. South Africa has a sheep and goat pox control policy in place although the disease is not government controlled. In Namibia, Zimbabwe and Botswana there are no sheep and goat pox control policies in place. Zimbabwe uses the OBP vaccine. (See Table 3b). The two diseases are predominantly private sector managed in the region.

Table 3a Rift valley fever control and the type of vaccines applied (Botswana, Namibia, Zimbabwe and South Africa)

Situation	Botswana	Namibia	Zimbabwe	South Africa
Approach to RVF control	The first RVF outbreak was experienced in the country in 2010. Emergency vaccinations were applied at the first signs of an outbreak (2 rounds were done). Quarantine was imposed as well as internal movement controls and symptomatic treatment for affected cattle.	In 2010 & 2011, outbreaks were experienced in defined localities. Both Continuous yearly and emergency vaccinations at the first signs of an outbreak have been recommended and adopted as control strategies.	Endemic in Mashona Land and Highveld areas with high rainfall coupled with flooding episodes. Vaccination regime not well defined, farmers and private vets undertake the various field activities.	In 2010 and 2011 outbreaks were experienced following abnormally high rainfall and climatic conditions favorable for the development of competent vectors. Emergency vaccination adopted.
Form of vaccine used	OBP Inactivated vaccine.	OBP Live attenuated Smithburn vaccine.	OBP Live attenuated Smithburn vaccine.	OBP vaccines; Live attenuated Smithburn, RVF C13 vaccine, and Inactivated (<i>Formalinised A1oH3 adsorbed RVF virus</i>) vaccine

Table 3b Regulation and control of RVF, LSD and S&G Pox Vaccines (Botswana, Namibia, Zimbabwe and South Africa)

Vaccine Type	Botswana	Namibia	Zimbabwe	South Africa
Rift Valley Fever (RVF)	Procured, distributed and administered/ applied in the field by government veterinary personnel. Emergency vaccination. OBP inactivated vaccine used.	Procured and distributed by the private sector. Application/ administration in the field is by the farmers. OBP vaccine used	Procured and, distributed by and administered/ applied in the field by the private sector and farmers. OBP vaccine used.	Procured and distributed by co-operatives, private veterinarians and the manufacturer. Administered/applied in the field by private vets, farmers, farm workers and government veterinary technicians. Locally manufactured OBP vaccine is used.
Lumpy Skin Disease (LSD)	Procured, distributed and administered/ applied in the field by the private sector. OBP vaccine used.	Procured and distributed by the private sector. Application/ administration in the field is by the farmers. Ring vaccination using OBP vaccine.	Procured, distributed and administered/ applied in the field by the private sector and farmers. OBP vaccine used.	Procured and distributed by co-operatives, private veterinarians and the manufacturer. Administered/applied in the field by private vets, farmers, farm workers and government veterinary technicians. OBP vaccine used.
Sheep & Goat pox	No vaccine used.	No vaccine used.	Procured, distributed and administered/ applied in the field by the private sector and farmers. OBP vaccine used	Procured, distributed and administered/ applied in the field by the private sector and farmers OBP vaccine used.

Table 3a Rift valley fever control and the type of vaccines applied (Botswana, Namibia, Zimbabwe and South Africa)

Control Policy	Botswana	Namibia	Zimbabwe	South Africa
RVF control policy	RVF control policy Experienced the 1st outbreak in 2010, a control policy is yet to be put in place. RVF is as of now government controlled.	There is specific policy and RVF is government controlled.	There is no well-defined policy. Mostly treated as a public health concern. The situation was the same prior to the land reforms of 1980s.	Policy in place, RVF not government controlled but notifiable.
LSD control policy	No policy in place; controlled by the private sector.	No policy in place, the government only moves in when the disease affects poor communities.	No policy in place though treated as a notifiable disease.	Policy in place, LSD not government controlled.
Sheep & goat pox (SGP) control policy	No policy in place and controlled by the private sector.	No policy in place	No control policy, SGP is not a major concern but Orf is.	Policy in place, SGP not government controlled.
Use of multivalent vaccines	The situation is too soon for any decision to be made. Government would maintain the control of the disease and regulate vaccine supply	Supported, providing the product is state registered, both private vets and farmers would apply it in the field.	Supported the LSD+RVF combination. (LSD and RVF tend to occur in the same geographical locations hence the preference.) Because of national “GMO” regulations, recombinant vaccines would have to undergo some scrutiny to comply with the current thinking.	Government is responsible for the evaluation and registration of vaccines; once registered (multivalent), it will not be government controlled. Private veterinarians or farmers and farm workers would be able to use the vaccine. RVF and LSD outbreaks have been recorded to occur together in certain areas.
Buying into the concept of a RVF vaccine bank	Concept strongly supported, based on BVI’s FMD vaccine model.	Concept supported providing the strategic vaccine stocks are paid for up front.	Concept accepted.	Concept accepted with this observation: “short expiry dates and the long intervals between outbreaks are problematic.”
Use of RVF penside diagnostic assay	Very well supported.	Very well supported, for RVF field diagnosis	Supported, both government and private sector would purchase kits for use in the field.	Partly accepted with this observation: “ <i>must be able to differentiate between infection and vaccination in the animals</i> ”.

5.2.2 Namibia

Until May 2010 when RVF was notified in Hardap province, Namibia had not reported any outbreak of RVF since 1985. The veterinary authorities inspected 75 premises in the same province and detected six additional outbreaks. During the general surveillance, the disease was detected in Erongo and Karas provinces. Consequently, the Ministry of Agriculture Water and Forestry imposed with immediate effect, the suspension of all movements of cattle, goats and sheep from, into within and between the two regions of Karas and Hardap. The slaughter of cattle, sheep, and goats at export abattoirs and the sale of animals at auctions were also suspended. In the meantime vaccine procurement procedures were already ongoing and upon arrival, farmers obtained vaccines from the local suppliers.

The vigilance and response of the veterinary services was more remarkable, considering that RVF emerged in Namibia after an absence of 25 years, none of the staff involved had ever had to fight the disease before. Mr. Jacques Diouf, the Director General of the UN's Food and Agriculture Organisation (FAO) observed. *"Their alertness and prompt reaction prevented outbreaks of RVF in May 2010 from spreading, with potentially devastating consequences on lives, livelihood and food security"*. Ring vaccination using the OBP vaccine product was applied.

5.2.3 Botswana

In May 2010, Botswana notified the OIE of the first occurrence of RVF, with one outbreak in Gaborone; 155 cases and 103 deaths occurred among a population of 3,122 susceptible animals (cattle, goats and sheep). The husbandry system practiced in the outbreak area is characterised by abundant surface water, with small-scale horticultural irrigation projects providing an environment that is conducive for the development of mosquitoes. This event was resolved in November 2010.

A total of 13,669 cattle, 24,544 goats and 2,603 were vaccinated in response to the outbreak with an inactivated RVF OBP vaccine. In addition, quarantine and movement controls inside the country and symptomatic treatment for affected animals were carried out.

5.2.4 Zimbabwe

Zimbabwe experienced an RVF outbreak in 2009; this event was however not reported to the OIE. On October 19, 2011, the first confirmed human case of RVF contracted from Zimbabwe was reported in a female traveler who returned to France after a 26-day stay in Marondera, Mashonaland East province. Currently there is no well-defined RVF control programme in the country. The economic trends in the country coupled with the "Land Reforms" have affected the previously most productive commercial livestock rearing areas in the country.

5.2.5 South Africa

In South Africa, the routine vaccination of livestock using modified live attenuated Smithburn strain of virus provides lifelong immunity. The vaccine strain is only partially attenuated, and may cause abortions in pregnant females. In endemic areas, it is considered best practice to vaccinate all weaners annually. Pregnant animals are vaccinated with an inactivated vaccine, which requires a booster after 4 – 6 weeks and is very expensive.

The movement, slaughter and consumption of animals in the outbreak areas is prohibited, and human awareness campaigns using all available media, are instituted. On-farm vector control using insecticides, larvicides and repellants may be instituted in defined areas.

Since RVF is not a government controlled disease the following additional control measures are observed:

- RVF control activities are not controlled by government but is a notifiable disease according to the Animal Diseases Act (Act 35 of 1984):
 - Farmer or private veterinarian report to state veterinarians
 - Emergency reports to the National office
 - Monthly reports from Provinces to National office
 - International reports to the OIE (World Organisation for Animal Health) and SADC
- Farmers are well advised to vaccinate sheep and cattle (and goats) regularly in high-risk areas, esp. in years of high rainfall.
- Live attenuated and inactivated vaccines are available from Onderstepoort Biological Products. Farmers are also advised not to move their animals while an outbreak is on-going and to adhere to good biosecurity practices.
- The State Veterinary Services give support by giving information and advice to farmers.
- The State Veterinary Services supply some vaccine to emerging farmers and support vaccine campaigns in non-commercial domestic animals.

- Private owners are responsible for the vaccination of commercial domestic animals.

Information dissemination to the state and general public was critical during the 2010 RVF outbreak in South Africa.

The RVF, LSD and sheep and goat pox control policies, regulations and the disease patterns in the rest of the Southern African region is briefly described below.

In Swaziland, Mozambique, and Malawi there are RVF control policies in place and RVF is government controlled. Of these countries, only Mozambique has applied the OBP vaccine on an emergency basis. Lesotho, Zambia and DRC have no RVF control policies in place Zambia has however applied OBP vaccine on emergency basis while DRC has applied the same type of vaccine on continuous yearly control strategy basis (See Tables 4a, 4b and 4c).

There are LSD control policies in Swaziland, Mozambique and Malawi and LSD is government controlled. There are no LSD control policies in place in Lesotho, Zambia and DRC. All the countries in this group except for DRC have vaccinated against LSD using the OBP vaccine (see Table 4b). There are no sheep and goat pox control policies in the entire group and no vaccination control strategies are undertaken.

Table 4a Rift valley fever control and the type of vaccines applied (Swaziland, Lesotho, Zambia and DR Congo)

Situation	Swaziland	Lesotho	Zambia	DRC	Mozambique	Malawi
Approach to RVF control	RVF has never been experienced in the country, except for a scare in 2007 that was vaccine induced, CDC assisted in the investigations. Control approach has been no vaccination at all.	RVF has never been experienced in the country. Control strategy is no vaccination at all.	RVF experienced in 1974/78 and 1985. No vaccination approach and Emergency vaccination at the first signs of an outbreak has been adopted as a control strategy	In 2006/7 & 2008 outbreaks were experienced in defined localities. Only Continuous yearly vaccination is done in selected herds.	Disease never reported in the country.	Disease reported in the 1990s but not confirmed.
Form of vaccine used	No vaccine applied	No vaccine applied	Live attenuated Smithburn, OBP vaccine product	Live attenuated Smithburn from OBP, looking forward to applying the RVF C13 vaccine in the near future	OBP vaccine used.	No vaccine applied.

Table 4b Regulation and control of RVF, LSD and S&G Pox Vaccines (Swaziland, Lesotho, Zambia and DR Congo)

Vaccine Type	Swaziland	Lesotho	Zambia	DRC	Mozambique	Malawi
Rift Valley Fever (RVF)	No vaccine application. Vaccination is NOT allowed.	RVF has never been experienced in the country hence no vaccine applied	Procured and distributed by the private sector; administered/ applied in the field by Public & private Veterinarians. OBP vaccine product	Procured and distributed by the private sector; administered/ applied in the field by farmers. OBP vaccine product	Procured by National Directorate of Veterinary Services, distributed and administered/ applied in the field by government veterinary personnel. OBP vaccine used	No vaccine application.
Lumpy Skin Disease (LSD)	The disease has been experienced in the country. Vaccines procured by farmers and distributed by private sector. Application/ administration in the field by Veterinary Assistants (Para-Vets). OBP vaccine applied.	Reported the disease in 2011. Procured by FAO and distributed by the State. Application/ administration in the field by Government Veterinarians. OBP vaccine applied.	Procured and distributed by the private sector; administered/ applied in the field by government & private Veterinarians. OBP vaccine applied.	LSD has never been experienced in the country hence no vaccination.	Procured, distributed and administered/ applied in the field by public private sector. OBP vaccine applied.	Procured and distributed by the government and private sector; administered/ applied in the field by public & private Veterinarians Vaccine procured from OBP
Sheep & Goat pox	Goat pox sporadic cases have been reported and vaccination is not routine.	Sheep and goat pox has never been experienced in the country.	No vaccine application	Sheep and goat pox has never been experienced in the country. No vaccination done.	Disease has not been reported, no vaccine application	Disease has never been experienced in the country.

Table 4c RVF Control Policies and challenges (Swaziland, Lesotho, Zambia, DR Congo, Mozambique and Malawi)

Control Policy	Swaziland	Lesotho	Zambia	DRC	Mozambique	Malawi
RVF control policy	There is an existing specific policy and RVF is government controlled.	There is no existing government specific policy.	There is no existing government specific policy.	There is no existing government specific policy.	There is an existing government specific policy. RVF is government controlled.	There is an existing government specific policy. RVF is government controlled.
LSD control policy	There is a policy in place and controlled by the Government	There is no existing government specific policy.	There is no existing government specific policy.	There is no existing government specific policy.	Specific policy in place and controlled by the government	There is a policy in place. LSD is government controlled.
Sheep & goat pox control policy	No policy in place and controlled by the private sector	There is no existing government specific policy and not controlled by the government.	There is no existing government specific policy and not controlled by the government.	There is no existing government specific policy and not controlled by the government.	No policy in place.	No policy in place.
Use of multivalent vaccines	Not supported, since there is no justification for RVF vaccination.	Not supported, only RVF has been experienced	Supported particularly the LSD+RVF combination.	Not supported, although RVF & LSD have been experienced.	Supported	Supported
Buying into the concept of the RVF vaccine bank	Concept not supported.	Concept supported vaccine stocks are paid for up front.	Concept supported.	Concept supported.	Supported	Supported, providing agreed through MoU between the Govt & the vaccine producer.
Use of RVF Penside diagnostic assay	Supported, for use in areas under threat.	Very well supported, for RVF field diagnosis	Very well supported, for RVF field diagnosis.	Supported, for field diagnostic and active surveillance.	Supported	Supported, for preliminary screening of field suspected cases.

6 Feasibility of an African wide RVF vaccine bank



6.1 Concept

Any outbreak of RVF in the countries of the two regions is a great challenge to livestock production, export markets as well as in terms of the sanitary measures to contain the disease. To forestall such losses, quantities of quality veterinary vaccines for strategic use must be readily available for control of RVF outbreaks. The manufacturer OBP would therefore produce adequate reserves of vaccine for routine and emergency use in different countries. Currently all countries of the Southern Africa region and also some countries from the Eastern Africa region procure their RVF and LSD vaccines from OBP; it is an established market.

Throughout the consultation process the consultant got the views of the respondents and people interviewed on the establishment of the RVF vaccine bank to be hosted by OBP in South Africa. The results obtained were as follows:

1) Primary study countries:

Six countries (Kenya, Ethiopia, Botswana, Namibia, Zimbabwe and South Africa) supported the vaccine bank concept without any reservations. Tanzania did not support the idea on the grounds that this would be in conflict with government procurement and tendering procedures. However single sourcing (sole supplier) of certain commodities (veterinary products included) is actively under consideration to accommodate this concern. South Africa did express its concern over the shelf life of the vaccine, a longer shelf life was proposed. A general concern from the two regions exists with regard to the responsibility for the storage and disposal of paid for expired vaccines at the vaccine bank. It was further observed that there might be cost implications arising from storage of vaccines at the vaccine bank, making the commodity unaffordable in the end. Furthermore, participating countries may not be ready to use the purchased vaccines due to logistical constraints and unforeseen situations.



Kenya has the capacity to produce all the vaccines that have been proposed to be included in the multivalent vaccine package using their own strains. However, the Directorate and KEVEVAPI management are following the OBP Clone 13 RVF vaccine trials with interest and they are happy with the results obtained so far. The Kenya Veterinary Association further endorsed that this product would find a definite place in Kenya veterinary medicine application.

2) Secondary study countries:

Six countries (Lesotho, Zambia, DRC, Malawi, Uganda and Mozambique) supported the vaccine bank concept. Swaziland and Burundi did not support the idea on the grounds that they had never experienced RVF. Rwanda did not respond to the questionnaire therefore its position is unknown (see Tables 2b and 4c).

From the results above there is a clear indication that the majority of the countries in the two regions are favourable to the idea of establishing a vaccine bank hosted by OBP in South Africa, provided certain considerations are taken into account.

From the policy point of view, taking into account the superior safety of the Clone 13 component, there will be a gradual policy shift in that private veterinarians and farmers will freely access this product without much government control. This gradual approach is the pathway to shifting the public into a private good delivery system. The multivalent vaccine delivery should therefore be customized to individual country needs.

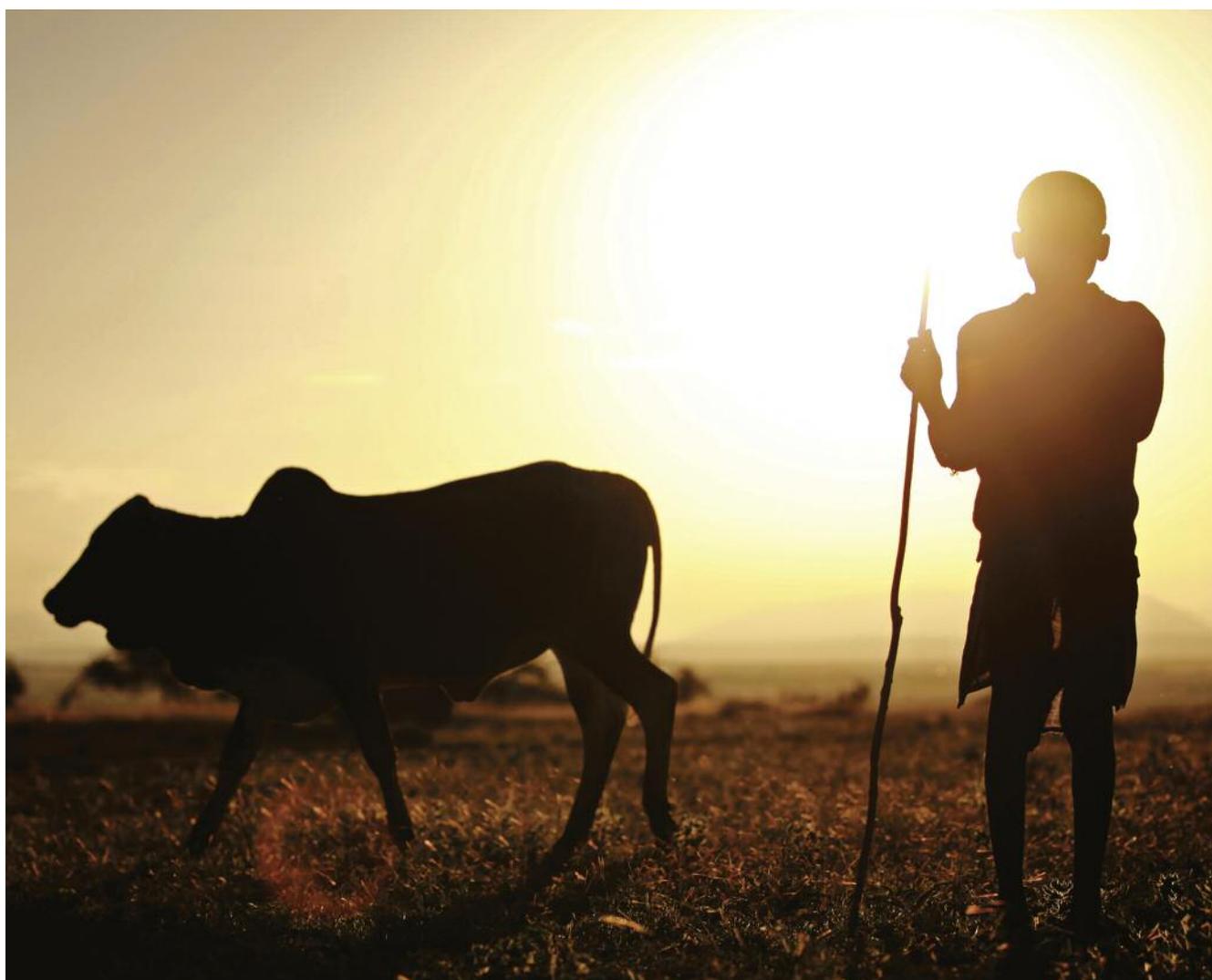
6.2 Key Points for consideration

Provided the product is registered in Kenya, Kenya fully supports the RVF vaccine bank proposal and would buy the product despite it being a producer itself. This approach will definitely disadvantage KEVEVAPI products and hence, the sustainability of this parastatal organization. To overcome this, KEVEVAPI and the Veterinary Directorate propose that the two parties sign a memorandum of understanding to enable KEVEVAPI produce the same product while remaining a beneficiary of the vaccine bank. The process may take long but it is a worthwhile proposal for consideration by GALVmed.

The pricing structure of the product should be revisited so that it becomes affordable (during the 2006/7 outbreak the OBP vaccine cost 10 times more than the Kenyan locally produced vaccine). From a procurement point of view, the state would rather purchase the same old vaccine than spend "extra money" on a new product that is going to perform the same function.

Both the EAC and SADC have in the past had a lot of experience in creating regional organs for the improvement of livestock welfare that have proved to be unsustainable. It is for this reason that members of these Regional Economic Communities are requesting GALVmed to create a forum where the following issues would be discussed in order to avoid a repeat.

- a** Structure of the vaccine bank, governance, management and infrastructure support including vaccine storage and insurance must be tabled.
- b** Membership: it is not automatic that those that have supported the vaccine bank concept will also be members in the end; commitment will be required. Commitment shall be in form of:
 - Sensitization of national policy makers responsible for livestock,
 - Provision of national annual budgetary allocations towards specific disease prevention and control (RVF, S&G Pox and LSD),
- Active participation in the affairs of the vaccine bank, and integration of vaccine bank objectives in the appropriate Regional Economic Community divisions/directorates responsible for livestock.
- c** Funding mechanisms for the vaccine bank, options for considerations:
 - National budgetary mechanisms; individual countries buy in.
 - Regional collective facility this will include; Voluntary contributions, coordinated contributions and Jointly Resourcing International contributions.



7 Policy analysis and Conclusions

7.1 Policy analysis and Conclusions

The study has shown that the two regions (Eastern and Southern Africa) currently lack or are deficient in capacities for policy and strategy formulation, and legislative reforms. Some of the existing control policies are documented whilst others are not. This concern is to a large extent continental and affects most Veterinary Services in Africa. The major areas requiring remedial measures are:

a Deficiency in the capacity for policy and strategy formulation

There exist gaps in policy and institutional capacity in the Member States visited, contacted in one way or the other as well as in many African countries. These shortcomings need to be adequately addressed if the continental poverty reduction potential of livestock is to be fully realized. The major gaps in the policy analysis and formulation processes include appropriate policy analysis and formulation skills and the capacities to generate evidence for policy development. Equally, the translation of livestock policies into national action plans and their inclusion in national budgets requires skilled personnel to formulate sectoral strategies and action plans, and undertake meaningful and successful negotiations.

b Deficiency in capacities for review and development of legislations

Policy and institutional reforms require supporting legislative and regulatory frameworks to enable their effective implementation. There is limited capacity for review and development of appropriate legislations and regulations at both regional and national levels. Development of harmonized legislative frameworks to address common problems at national level is paramount. Training of personnel and provision of technical support at both national and regional levels is welcome.

c Poor (lack of) participation of civil societies in the policy, strategy and legislation formulation processes

Adequate and all-inclusive mechanisms for participation of different stakeholder groups in policy formulation particularly the marginalized livestock producers and farmer groups at national level need to be put in place.

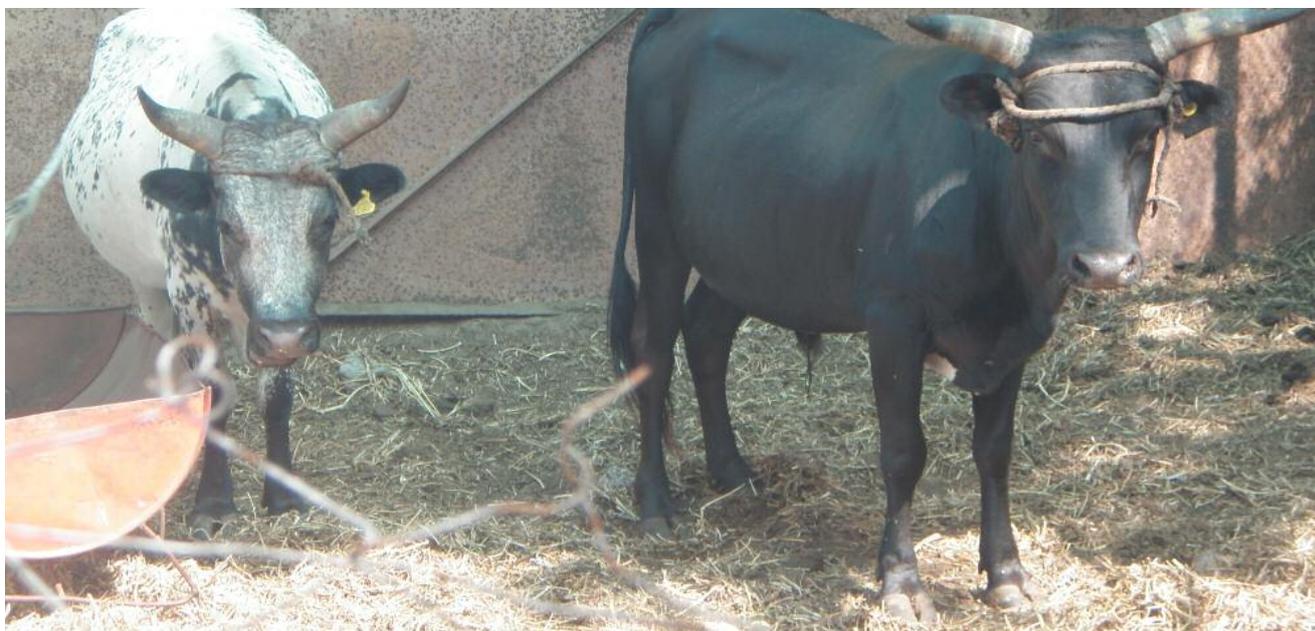
7.2 Conclusions

Following some country and elaborate consultations with EAC and SADC Chief Veterinary Officers, public and private veterinarians, vaccine manufacturers, farmers and members of staff of the OIE Sub-Regional Representation for Southern Africa, it became apparent that the two regions need reorientation for effective management of RVF, LSD, and sheep and goat pox. Control policies and veterinary legislation need to be addressed at national, regional and at continental levels, vigorously and immediately.

RVF remains a major concern for the two regions, as a TAD and a public health matter. Its control is competing with CBPP and FMD for resources. LSD and sheep and goat pox are also of concern in the region although they are not priority diseases. Every country has a number of diseases it regards as Diseases of National Economic Importance and whose occurrence is given maximum attention and priority.

Effective and sustainable control of RVF will in part be dependent upon (i) practical field application of safe vaccines, a shift from the conventional approach currently in use and (ii) sound policies supported by emergency preparedness and response plans. Using the diagnostic assay, which is currently under evaluation, would further speed up veterinary responses.

6 Recommendations



Having reviewed the RVF status in the RECs with regard to RVF control as well as setup of the RVF vaccine bank it is recommended that:

8.1 Specific recommendations:

- a Position the structure of the vaccine bank under the umbrella of GALVmed to be more visible to member states in both regions where GALVmed exists and beyond.
- b Invite the Chief Veterinary Officers from the two regions for an in-depth discussion on approaches proposed by stakeholders.
- c Conduct a market survey on the competitiveness of the OBP vaccines compared with other vaccine manufacturers in the two regions.
- d Observe and respect the existing Public Private Partnerships and confidentiality.

8.2 General recommendations:

- a A relevant legal instrument should be developed to facilitate the operations of the RVF vaccine bank; this should be a prerequisite for the establishment of the vaccine bank. Unfortunately very many and tortuous steps have to be undertaken. These could however be shortened through focused dialogue with Veterinary Authorities. A good example this process could learn from is the approach used in the setting up of the SADC Plant gene bank.

- b GALVmed should create a forum for Chief Veterinary Officers, public health personnel and relevant stakeholders to review the existing RVF control policies in the two regions with a view to collectively harmonize and synchronize control strategies. The OIE should be in attendance. The TADS Project in the SADC region is a good reference point for such an approach.
- c GALVmed should distribute the products under development as soon as they are ready for marketing, and after market surveys have been conducted in each country. Publicise results obtained so far to avoid market shocks in the near future. Veterinary Authorities will only use vaccines in whatever form or combination, based on local knowledge and understanding.
- d Priorities on resource allocation may differ within country, between countries and between the two Regional Economic Communities. GALVmed should therefore critically look at national and global livestock disease concerns before considering more investment commitments. The disease control decision at national level will determine what is good for a nation and therefore countries should drive the decision on choice of vaccine sources. GALVmed could facilitate and support this process.

9 References

- 1 Enhancing Prevention and Control of RVF in East Africa by Intersectoral Assessment of Control Options.
- 2 Circular letter of 7th October 2009 of even reference RVF/9/VOL.3/82 SURVELLANCE FOR RIFT VALLEY FEVER (Not allowed for publication; A file is enclosed)
- 3 Study on the establishment of: Southern African Commission for the Control of TADs (SACCT Report).
- 4 2010 Annual report of the OIE Sub Regional Representation for Southern Africa



Appendix I: Summary Table Of Findings

	RVF Reported	RVF policy exists	RVF Govt or private control	LSD & SGP policy exists	LSD & SGP Gov't/Private	Support multivalent	Support RVF strategic reserve?	Comments
Kenya	✓	✓	Gov't	LSD ✓ SGP ✓	Private but monitored	✓	✓	1st outbreak 1930s. Yearly RVF vaccinations esp. in 'hotspots'. Live attenuated Smithburn's produced by KEVEVAPI. OBP Clone 13 vaccine trials in progress
Tanzania	✓	✓	Gov't	LSD ✓ SGP ✗	Private	✓	✗	RVF vaccination only of yearlings esp. in areas around 2007 outbreak; for LSD, gov't involved only where poor communities are affected; multivalent would need to be registered and could be used by private sector and farmers w/o gov't control
Ethiopia	✗	✓	Gov't	LSD ✓ SGP ✓	Govt Govt	✗	✓	No RVF reported cases in last 20 yrs although threat on border with Somali. No vaccination but policy exists perhaps due to pressure from trading partners; multivalent not supported as no RVF
Botswana	✓	In prep	Gov't	LSD ✗ SGP ✗	Private	✓	✓	First RVF outbreak 2010, emergency vaccination used
Namibia	✓	✓	Private + Gov't	LSD ✗ SGP ✗	Private	✓	✓	RVF continuous yearly & emergency vaccinations at first sign of outbreak; RVF vaccine procured, distributed & administered by private sector/farmers
Zimbabwe	✓	✗	Private	LSD ✗ SGP ✗	Private	✓	✓	RVF endemic in some areas, vaccination regime not well defined; RVF policy not clear, RVF mostly treated as public health concern; no policy for LSD although treated as a notifiable disease; supported RVF+LSD but concerns on GMO
South Africa	✓	✓	Private + Gov't	LSD ✓ SGP ✓	Private	✓	✓	RVF emergency vaccination used in 2010 & 2011 outbreaks; RVF not gov't controlled but notifiable
Swaziland	✗	✓	Gov't	LSD ✓ SGP ✗	Gov't	✗	✗	No reported cases of RVF save scare in 2007 where vaccine induced; Have reported LSD & sporadic SGP but no SGP policy; no support for multivalent as no RVF reported
Lesotho	✗	✗	-	LSD ✗ SGP ✗	Private	✗	✓	LSD reported but no SGP; no support for multivalent as no RVF reported
Zambia	✓	✗	Gov't + Private	LSD ✗ SGP ✗	Private	✓	✓	RVF emergency vaccination at first signs of outbreak; no SGP vaccination; supported RVF+LSD
DRC	✓	✗	Private	LSD ✗ SGP ✗	Private	✗	✓	Continuous RVF yearly vaccinations in selected areas; no reported LSD & SGP
Mozambique	✗	✓	Gov't	LSD ✓ SGP ✗	Gov't	✓	✓	SA imposed conditions @border hence policy w/o reported cases; have reported LSD but no SGP; would support RVF+LSD
Malawi	✓	✓	Gov't	LSD ✓ SGP ✗	Gov't	✓	✓	RVF reported in 90s but not confirmed; have reported LSD but no SGP; would support RVF+LSD
Uganda	✗	✗	Gov't	LSD ✗ SGP ✗	Gov't + Private	✗	✓	Have both LSD & SGP but no policies; no support for multivalent as no RVF reported
Burundi	✗	✗	?	LSD ✗ SGP ✗	Private	✗	✗	Have no reported SGP and no LSD & SGP policies; no support for multivalent as no RVF reported

Brief analysis

- Of the 15 countries reviewed, 9 had reported incidences of RVF
- Of the 9 which had reported incidences of RVF, only 5 have RVF control policies
- 3 countries (Ethiopia, Swaziland, Mozambique) have not had incidences of RVF but however have RVF control policies
- All the countries that control RVF by vaccination use the OBP vaccine except Kenya which manufactures its own
- Virtually all countries that have reported RVF are largely supportive of setting up the RVF strategic reserve subject to appropriate involvement and consultative processes being followed
- Where countries have no written policies, control measures are inferable from the practice e.g. RVF in Zambia & DRC



Appendix 2: General Terms of Reference

BACKGROUND OF PROJECT

GALVmed is an Animal Health Product Development and Access Partnership focusing on sustainable poverty alleviation by making available and accessible animal health products (vaccines, medicines and diagnostics) to people in sub Saharan Africa and in South Asia who rely on their livestock for their livelihoods.

GALVmed's mission of 'Protecting Livestock Saving Human Life' is currently implemented in over twenty countries in sub Saharan Africa and in South Asia and supports work on thirteen animal diseases across five species. Rift Valley Fever (RVF) is one of GALVmed's disease focus on which work is currently ongoing on development of three products: (i) Monovalent RVF vaccine (ii) Multivalent vaccine (combining RVF vaccine and that for Lumpy Skin Disease (LSD)/Sheep and goat pox (SGP)) and (iii) Penside test.

OBJECTIVES

GALVmed is aware that countries in Eastern and Southern Africa differ in their approach to RVF control. As part of the preparation in making the RVF products available to various markets in Eastern and Southern Africa, GALVmed would like to do a policy landscaping study to understand the policies, legislations, regulations and practices in RVF control in these two regions. The study will therefore consist of an in depth review of the policy, regulatory mechanisms, administration and practice of RVF control in Eastern and Southern Africa. The study should also incorporate the feasibility of an African RVF vaccine bank to cover the above regions.

PROJECT AREA

The policy landscaping study will cover 16 countries: South Africa, Namibia, Botswana, Zimbabwe, Tanzania, Kenya, Ethiopia, Malawi, Mozambique, Zambia, DRC, Uganda, Rwanda, Burundi, Swaziland and Lesotho of which 7 are major targets and are indicated in bold.

METHODOLOGY

Work Activity 1 shall involve an in depth analysis of primary and secondary sources. The primary sources will include the national policies, strategies, Acts of Parliament, subsidiary legislation including Ministerial Decrees related to RVF control.

Secondary sources will include a literature review of national, regional and international reports and relevant studies. The Consultant will be expected to consult and reflect international initiatives, debates and trends particularly those under the auspices of the OIE e.g. the Evaluation of Performance of Veterinary Services (PVS).

Work Activity 2 shall involve holding semi structured qualitative interviews in at least the seven target countries. In each country, the respondents shall include representatives drawn from (i) government veterinary service e.g. DVSs (ii) private sector (iii) public and private veterinarians and (iv) farmers. Respondents from regional organizations such as SADC and EAC shall also be interviewed as appropriate. The final report shall include an annex detailing the respondents and their contact details. The report presenting the detailed analysis and findings from both Work Activities shall include:

- (i) the stated legal/official position on RVF control in the identified countries highlighting the differences and similarities across countries and regions where appropriate
- (ii) the interpretation of the legal/official position (including the evidence of that interpretation) by (a) government officials and public veterinarians (b) private veterinarians (c) farmers
- (iii) the implementation of the various interpretations i.e. the actual practice highlighting the differences and similarities across countries and regions where appropriate
- (iv) the feasibility of a RVF vaccine bank: key points to be considered
- (v) Implications for and recommendations to GALVmed.

OUTPUTS / DELIVERABLES

The following are the expected outputs/deliverables:

- 1 List of potential interviewees prior to commencing Work Activity 2
- 2 One report comprising a comprehensive analysis of the policies, regulatory mechanisms, administration and practice of RVF control in 16 countries in Eastern and Southern Africa.

Appendix 3: Legislation

COUNTRY	LEGISLATION
Kenya	<p>The Animal Diseases Act Cap 364 An Act of Parliament to provide for the matters relating to the diseases of animals</p>
Tanzania	<p>The Animal Diseases Act, 2003 An Act of Parliament to make provisions for control of animal diseases for monitoring production of animal products, for disposal of animal carcasses and for the other related matters</p> <p>The Tropical Pesticide Research Institute Act, 1979 An Act of Parliament to establish the Tropical Pesticides Research Institute, to provide for the research and pesticides control, the functions of the Institute and for the matters connected with and incidental to the establishment of the Institute</p> <p>The Tanzania Food, Drugs and Cosmetic Act, 2003 An Act of Parliament to provide for the efficient and comprehensive regulation and control of food, drugs, medical devices, cosmetics, herbal drugs and poisons and to repeal the Food (Control of Quality) Act, 1978, the Pharmaceuticals and Poisons Act, matters and to provide for related 1978</p> <p>The Animal welfare Act, 2008 An Act of Parliament to provide for the humane treatment of animals, establishment of the Animal Welfare advisory Council, monitoring and mitigation of animal abuse, promoting awareness on the importance of animal welfare and to provide for other related matters.</p> <p>The Livestock Identification and Traceability Act, 2010 An Act of Parliament to provide for the establishment of the National Livestock Identification, Registration and Traceability System for purposes of controlling animal diseases and livestock theft, enhancing food safety assurance; to regulate movement of livestock, improve livestock products and production of animal genetic resources; to promote access to market and to provide for other related matters</p>
Ethiopia	<p>Animal Diseases Prevention and Control Proclamation no. 267/2002 A Proclamation to provide for the prevention and control of Animal Diseases</p>
Botswana	<p>Diseases of Animals Act of 1977 An Act of Parliament to provide for the prevention and control of diseases of animals; to regulate the import, export and movement of animals; to provide for the quarantine of animals in certain circumstances; and to provide for matters incidental to and connected with the foregoing</p>
Namibia	<p>Animal Health Act, 2011 An Act of Parliament to provide for the prevention, detection and control of animal diseases; to provide for the maintenance and improvement of animal health and to provide for incidental matters</p>
Zimbabwe	<p>Animal Health Act Chapter 19:01 An Act of Parliament to provide for eradication and prevention of the spread of animal pests and diseases in Zimbabwe, for prevention of the introduction of into Zimbabwe of animal pests and diseases and for the incidental matters</p>
South Africa	<p>Animal Diseases Act No. 35 of 1984 An Act of Parliament to provide for the control of animal diseases and parasites, for measures to promote animal health and matters connected herewith</p>
Swaziland	<p>Animal Diseases Act 7/65</p>

Appendix 4: List of Respondents

Kenya

Dr. Murithi R Mbabu
Dr. Joseph Nkonge Marete
Dr. Cathryn Wanjoi Malanga
Dr. Bruce Mukanda
Dr. Dickens Malanga Chibeu
Dr. Geoffrey K Muttai

Zimbabwe

Dr. William Shereni
Dr. Unesu H. Ushewokunze-Obatola
Dr. Josphat Nyika
Dr. Pious Makaya

DRC

Dr. N'Lemba Mabela

Tanzania

Dr. Win C.H Mleche
Dr. Johnson O Mollel
Dr. Fabian Madelle

Botswana

Dr. Bonaventure J. Mtei
Dr. Patrick X. Bastiaensen
Dr. Neo Mapitse

South Africa

Dr. Mpho Maja

OIE HQ

Dr. Susanne Munstermann

Ethiopia

Dr. Teshome Bekele
Dr. Amsalu Demissie
Dr. Yismashewa Wogayehu

Swaziland

Dr. Roland Xolani Dlamini

Namibia

Dr. Cleopas Bamhare

Lesotho

Dr. Marosi Molomo

Appendix 4: Policy Landscaping Study Questionnaire

(A) General Disease Picture

When did you last experience the disease in HIGH proportions (3 major outbreaks)

	Year 1	Year 2	Year 3	Never Experienced
Rift Valley Fever (RVF)				
Lumpy Skin Disease (LSD)				
Sheep pox (SP)				
Goat pox (GP)				
Sheep and Goat pox (SGP)				
Concurrent Disease outbreaks of the above in the same locality (Please indicate the combinations)				

(B) Regulation and control of RVF, LSD and S&G Vaccines

Vaccine Type	Actors		
	Procurement by	Distributed by	Application/Administration of vaccines in the field by
Rift Valley Fever (RVF)			
Lumpy Skin Disease (LSD)			
Sheep pox			
Goat pox			
Sheep and Goat pox (SGP)			

Key to the Answers

GovernmentGov. Private Veterinarians.....PVet

Farmer.....Fm Government Vets.....Gov Vet

Appendix 4: List of Respondents

(A) Approach to RVF Control in the country

Practice	(Yes/No)	Comments
Continuous yearly vaccination		
Emergency vaccination at the first signs of an outbreak		
No vaccination at all		
Forms of vaccines used		
Form	(Yes/No)	Source
Live attenuated Smithburn vaccine		
RVF C13 vaccine Onderstepoort Biological Products (OBP)		
Inactivated vaccines (Specify)		

(B) RVF Control Policy and challenges

Is there a government deliberate policy on RVF control in the country?	(Yes / No)
Is RVF government controlled?	(Yes / No)
Is LSD government controlled?	(Yes / No)
Is S&G government controlled?	(Yes / No)
In an event that use of a multivalent vaccine was accepted <i>(generated from recombinant vaccine or combination vaccine i.e. Combining RVF with LSD; RVF Clone 13 + LSD vaccine (OBP) into a single vaccine)</i> would the government still control this vaccine?	(Yes / No)
Would private veterinarians or farmers be able to use this multivalent vaccine without government control?	(Yes / No)
Would you buy into setting up a RVF VACCINE BANK to be hosted by an RVF vaccine producer, how would you see this setup managed?	(Yes / No)

(C) Rift Valley Fever Pen-side diagnostic assay

GALVmed working with partners have developed a pen-side diagnostic for RVF, validation is on-going and will be concluded soon

As a diagnostic tool would you find it of any use once released on the market	(Yes/NO)	Application

(D) PVS Gap analysis in your Country

Preparation of a strategic plan to strengthen Veterinary Services' compliance with OIE quality standards

	Comments
Were RVF control policy issues addressed?	
As a country is there an existing RVF control strategic plan?	

Contact GALVmed:

www.galvmed.org

Africa Office:

**1st Floor West Wing, A.K.D. House II, Fairgrounds, Plot 54478
Gaborone – Botswana, P.O. Box 45108, Gaborone**

Tel: **+267 3121 202/203/209** Email: info@galvmed.org

South Asia Office:

**Unit 118 & 120 B, Splendor Forum, Plot No 3, Jasola district Centre,
Jasola, New Delhi – 110025**

Tel: **+91 11 40507200** Fax: **+91 11 40505993** Email: info@galvmed.org

UK Office:

Doherty Building, Pentlands Science Park, Bush Loan, Edinburgh EH26 0PZ, UK

Tel: **+44 (0)131 445 6264** Fax: **+44 (0)131 445 6222** Email: info@galvmed.org



Currently funded by:

**BILL & MELINDA
GATES foundation**



Protecting Livestock – Improving Human Lives

GALVmed is a registered charity and not-for-profit global alliance of public, private and government partners.

Registered Charity in Scotland: SC039197 Registered Charity in England and Wales: 1115606

Registered Name: Global Alliance for Livestock Veterinary Medicines.

Registered in England and Wales No. 5393391, limited by guarantee

Registered Office: Maclay Murray & Spens, One London Wall, London EC2Y 5AB, UK