



IGAD CENTRE FOR PASTORAL AREAS AND LIVESTOCK DEVELOPMENT (ICPALD)



IGAD ANIMAL HEALTH STRATEGY 2017-2022



REGIONAL PASTORAL LIVELIHOODS RESILIENCE PROJECT (RPLRP)

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PREFACE

Sixty to seventy percent (60-70%) of the Intergovernmental Authority on Development [IGAD] region landmass is categorized as arid and semi-arid land (ASAL) which is dominated with livestock as the main economic activity. It contributes substantially to food security, general economic viability and employment opportunities for majority of the rural population. However, the sector is affected by several OIE listed transboundary animal diseases (TADs) and others that can easily spread from one country to another and reach epizootic proportions. TADs outbreak can affect production of animals and livelihoods and livestock trade bans from the major importing countries of the Middle East and North Africa (MENA) countries unless proper control and prevention measures are put in place. It is, therefore, imperative that the region develops a strategy that strengthens disease prevention and control efforts to sustain and enhance livestock-based trade and its benefits. Utilizing the strategy will enhance the performance of animals and the region compliance for sanitary standards and promote trade both within and outside the region.

This strategy was developed with the support of a consultant; Dr. Paul Rwambo, in consultation with the Directorate of Veterinary Services and other relevant stakeholders in IGAD member states through field assessment. It was validated through regional workshop with participation of member states, the private sector and other relevant partners. We are grateful to the World Bank for the financial support of the regional project “Regional Pastoral Livelihood and Resilience Project (RPLRP) being implemented in Ethiopia, Kenya and Uganda” and coordinated by IGAD Center for Pastoral Areas and Livestock Development; that supported this activity and made this publication possible. It is our hope that this strategy will be used and adapted by member states to enhance the control and prevention of TADs and other priority diseases to improve livelihoods and mitigate frequent trade bans that often result from disease outbreaks.

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LIST OF ACRONYMS

ASAL	Arid and Semi-Arid Lands
AU-IBAR	African Union Inter-African Bureau for Animal Resources
CAHW	Community-based Animal Health Worker
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
cGMP	Current Good Manufacturing Practices
CPD	Continuous Professional Development
FAO	Food and Agriculture Organization of United Nations
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
HPAI	Highly Pathogenic Avian Influenza
ICPALD IGAD	Centre for Pastoral Areas and Livestock Development
IGAD	Inter-Governmental Authority on Development
ILRI	International Livestock Research Institute
LITS	Livestock Identification and Traceability Systems
LSD	Lumpy Skin Disease
MERS	Middle East Respiratory Syndrome
MS	Member State
ND	Newcastle Disease
NGO	Non-Governmental Organization
OIE	World Organization for Animal Health
PPR	Peste des Petits Ruminants
PVS	Performance of Veterinary Services
RAHC	Regional Animal Health Centre
RPF AH	Regional Policy Framework on Animal Health
RVF	Rift Valley Fever
SAP	Structural Adjustment Programmes
SMP-AH	Standards Methods and Procedures in Animal Health
S&GP	Sheep and Goat Pox
STSD	Surveillance of Trade Sensitive Diseases
TAD	Transboundary Animal Disease
VB	Veterinary Boards
VS	Veterinary Services
WAHID	World Animal Health Information Database
WAHIS	World Animal Health Information System
WTO	World Trade Organization

1.0 BACKGROUND AND JUSTIFICATION FOR A REGIONAL ANIMAL HEALTH STRATEGY FOR IGAD

1.1 Agricultural sector in the IGAD region

The Inter-Governmental Authority on Development (IGAD) region, consisting of Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda is home to about 250 million people, who make up 20% of the human population on the African continent. The agriculture sector is core to the economies of the IGAD Member States (MS), with 80% of the region's population deriving their livelihoods from the sector. However, approximately 75% of the land area is classified as arid and semi-arid land (ASAL) with highly variable rainfall making it unsuitable for crop production. At country level, the land area under ASAL ranges from 1% in Uganda to almost 100% in Djibouti and Somalia. This leaves livestock as the only viable form of land use for the ASAL. The IGAD region has one of the highest ruminant livestock concentrations in the world and in Africa. Approximately 80% of the region's population keep livestock, making it a vital asset for people living in the arid and semi-arid lands. In arable areas mixed crop-livestock production is practiced with major emphasis on dairy cattle and poultry production. Livestock rearing is traditionally one of the major sectors of agriculture in the region, contributing an estimated 57% of the agricultural Gross Domestic Product (GDP).

1.2 Livestock resource base of the IGAD region

The IGAD region has a huge livestock resource base estimated at more than 532 million consisting of cattle, sheep, goats, camels and poultry (FAO STAT 2013). To make a positive impact on livelihoods and national economies the huge livestock resource base (Table 1) of the IGAD region needs protection from the ravages of epizootic animal diseases. With an estimated 221 million small ruminants raised in the driest areas in the IGAD region the importance of small ruminant production in supporting livelihoods can hardly be underestimated (Table 1)

Table 1: Estimated livestock and poultry population in the IGAD region (OIE, Eastern Africa Annual Report, 2016)

Country	Animal species				
	Cattle	Sheep	Goats	Camels	Poultry/birds
Djibouti	40,000	470,000	610,000	71,000	No data
Eritrea	2,300,000	2,500,000	5,500,000	370,000	1,500,000
Ethiopia	56,706,389	26,500,000	29,112,963	2,164,106	50,377,142
Kenya	18,138,500	17,265,816	29,729,050	3,100,000	32,612,620
Somalia	5,200,000	13,500,000	12,500,000	7,100,000	No data
Uganda	13,020,000	3,800,000	14,500,000	0	41,725,658
Sudan	30,191,000	39,846,000	31,029,000	4,700,000	45,500,000
South Sudan	11,817,000	16,750,000	13,550,000	1,000	15,000,000

1.3 Opportunities for increased livestock production and trade

The increasing human population (predicted to reach 480 million by 2050 in IGAD region), per capita incomes and urbanization, have spurred a rapid growth in demand for livestock products, underlining an emergent '*Livestock Revolution*'. This creates opportunities for livestock keepers to respond to market-driven demand by increasing livestock and livestock products for domestic and export markets. The IGAD region is the leading exporter of livestock in Africa, accounting for 42% of the continent's exports. Income derived from livestock trade contributes significantly to the livelihoods of different value chain actors and supports the house-holds food security. Most of the livestock exported by MS is produced in the drylands of the IGAD region.

1.4 Impact of transboundary animal diseases in the IGAD region

Several World Organization for Animal Health (OIE) listed diseases including transboundary animal diseases (TADs) or diseases that easily spread from one country to another, reaching epizootic proportions and their control/management requires cooperation between several countries, continue to spread within the IGAD region. These diseases threaten the economic, trade and/or food security of the member states (OIE WAHIS 2016). All the major transboundary animal diseases and zoonoses are present in the region, with majority being enzootic (IGAD 2014). Movement of infected animals is the most common means by which diseases such as foot and mouth disease (FMD), peste des petits ruminants (PPR), contagious caprine pleuropneumonia (CCPP), contagious bovine pleuropneumonia (CBPP), and newcastle disease (ND) are transmitted. The occurrence of these epizootic diseases in IGAD member states continues to threaten national livestock industries by direct effects from high levels of morbidity and mortality, control costs and restrictions in trade in livestock and livestock products. In addition, several enzootic diseases (mastitis and pneumonia), parasitic diseases (trypanosomosis and helminthosis) and tick-borne diseases ultimately lead to reduction in livestock productivity, and financial losses due to disease. Climate change and altered weather patterns are affecting the range, intensity and seasonality of infectious diseases and vector-borne disease.

It is estimated that in Ethiopia annual losses due to livestock mortality account for 16 - 20 billion Ethiopian Birr (ETB) which is equivalent to USD 0.8 - 1 billion (Animal Health Strategy, 2013), Similarly, the livestock industry in Somalia lost an estimated US\$ 435 million when importers in the Arabian Peninsula imposed trade bans in 1998 and 2000 as a result of RVF outbreaks in the Horn of Africa and Saudi Arabia, respectively (Soumare et al., 2006). During the 2006-2007 RVF outbreaks in Kenya and Tanzania, it is estimated that the livestock sector lost in excess of US\$ 54 million (Department of Veterinary Services) and US\$ 10,285,717.00 (Sindato et al., 2012), respectively. The huge socio-economic impacts associated with epizootics and epidemics of RVF justify the need for effective prevention and control of RVF. The effects of zoonotic infections on human health are usually greatest on livestock keepers who live in close proximity to their animals, butchers and other workers who handle livestock products. The effective prevention and control of livestock diseases can and will have measurable impacts on incomes, improved social and physical wellbeing, reduced vulnerability, increased food security and options for sustainable management of natural resources.

1.5 Impact of climate change on vector-borne diseases in the IGAD region

The control of tick-borne diseases in the IGAD region remains a serious challenge to the livestock sector. Moreover, there are numerous arboviruses, such as RVF, that are of veterinary and public health importance. Although diverse factors impact the distribution of vector-borne diseases, climate is a major driver that influences the rates of development, reproduction and survival of pathogens within the vectors and their epidemiology (Semenza, 2009). Changes in climate that lead to increases in temperature, rainfall and humidity have the potential of expanding the geographical range of vectors and lengthen their

transmission seasons (WHO, 2015) with serious economic and public consequences. An increase in temperature tends to cause an upsurge in the growth rates of mosquito populations, decrease the interval between blood meals, shorten the incubation time from infection to infectiousness in mosquitoes and accelerate the virus evolution rate (Reiter, 2001; Reisen et al., 2006; Kilpatrick et al., 2008). A recent climate driven modelling of RVF risk shows high-risk of future RVF outbreaks, including in parts of eastern Africa to date unaffected by the disease such as western Kenya and south-western Uganda (David et al., 2016). In this regard, there is a clear need for MS to develop climate adaptation plans to mitigate the effects of climate change and also remain vigilant and invest not only in surveillance and early warning systems, but also in addressing the socio-economic factors that underpin social vulnerability in order to mitigate, effectively, future impacts of vector-borne diseases.

1.6 Veterinary services in the IGAD member states

The veterinary services implement animal health and welfare measures and other standards and recommendations in the *Terrestrial Animal Health Code (Terrestrial Code)* under the overall control and direction of the Veterinary Authority of a country. The veterinary services have a major responsibility in the prevention and control of epizootic animal diseases within a MS. However, many of the veterinary services in the IGAD region have over the years faced serious resource constraints thus undermining the performance of their services in disease prevention and control. Though privatization of clinical services improved service delivery in peri-urban and high potential areas with the highest concentration of dairy cattle and commercial poultry, service delivery to the majority of rural smallholder livestock owners and the pastoralist communities has suffered the most. Moreover, as a result of restructuring and decentralization, government veterinary offices in some countries have often been placed under the control of regional and local authorities within a general agricultural extension system. This has therefore weakened/ dismantled the chain of veterinary command process of reporting disease outbreaks and response to disease emergencies and management of national disease-control programs. The combination of poor financial resources and an inadequately organized national veterinary service has led to deterioration of animal health services, with epizootic diseases frequently spreading unchecked.

To address the current and future opportunities and challenges, VS should be independent and objective in their activities and make decisions based on sound policy and science and be immune from political pressure. The technical capacity of veterinary services should be strengthened through regional harmonization of training curricula and continuing professional development (CPD) programs. The MS should support the veterinary services with adequate human, physical and financial resources to enable them undertake all aspects of disease control. In addition, there should be a supportive legislative framework that underpins all the actions taken by the governments during disease prevention and control. For IGAD to continue accessing international markets for trade in livestock and livestock products, there is a need to strengthen the veterinary services to fully perform its mandate according to the OIE Terrestrial Code.

1.7 Current status of animal health services

The overall delivery of animal health services and access to affordable and effective livestock health products including veterinary drugs and vaccines remains a major challenge. The circulation and use of veterinary pharmaceuticals is poorly regulated resulting in drug resistance. To enhance disease control and prevention in these areas, new strategies and enabling legislation for improving the '*last mile delivery*' of veterinary services is needed.

Weaknesses in veterinary surveillance systems in the IGAD region have been highlighted during outbreaks of infectious diseases. Conventional passive surveillance has proven largely ineffective due to poor capacity and compliance, and many countries are not able to sustain active surveillance activities.

Consequently, public veterinary services and the livestock sector can neither detect nor respond timely to outbreaks of new disease threats, nor successfully manage the control of transboundary diseases, many of which remain enzootic in the IGAD region. Especially, the surveillance of animal diseases is poorest in the pastoralist and agro-pastoralist livestock production systems as well as in rural poultry production systems. This situation not only compromises the production, productivity and international trade of livestock, but also creates a continuing threat to public health since the majority of emerging infectious diseases are zoonotic.

The control of TADs should be addressed in a holistic manner taking into consideration the socio-economic dimensions, the farming systems and market chain information. The sustained control of epizootics and enzootic diseases is faced with several constraints including:

- Socio-political instability in some of the MS that rear high populations of livestock;
- General lack of political commitment to provide adequate financial and institutional support to develop the livestock sector and implement disease-control strategies in the event of outbreaks;
- Poor access to some livestock populations by veterinary personnel and other cadres of animal health service providers;
- Poor systems for delivering livestock health products (medicines, vaccines, diagnostics) to all areas of a country;
- Weak animal disease surveillance and reporting systems to support early detection of high-impact animal diseases;
- Inadequate capacity of veterinary laboratories to provide efficient diagnostic services;
- Inadequate number of trained manpower in veterinary services;
- Lack of effective preparedness for animal disease emergencies;
- Ineffective disease prevention and control policies;
- Poor regional coordination of disease control strategies.

The present IGAD regional animal health strategy aims to address some of these constraints. However, the primary responsibility of addressing the constraints lies with individual MS.

1.8 The role of IGAD in improvement of animal health services

The IGAD Secretariat is in a good position to lobby the Member States to increase budgetary allocations to the agricultural sector according to the AU Heads of State Maputo declaration of 2003 and the “Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods” made by the Heads of State and Government of the African Union at the Twenty Third Ordinary Session of AU Assembly in Malabo, Equatorial Guinea, 26-27 June 2014. The declaration to increase budgetary allocation to the livestock sector for prevention and control of animal diseases and livestock-related emergencies has not been effected by all IGAD MS. A renewed political commitment is needed to ensure that the animal resources in the IGAD region get the best veterinary services so that they could produce enough foods of animal origin to properly feed their people and access international markets in order to generate foreign currency. Animal health is also an important contributor to the welfare of animals and sustainable production of food of animal origin; It is therefore important that animal health delivery is improved with the aim of controlling animal diseases at the site of origin or source so that spread to other regions can be avoided. During a “Regional Policy Framework on Animal Health in the

context of trade and vulnerability” in IGAD (Djibouti, Dec 2009) ¹ the Member States recognized, *inter alia*, that:

- Animal diseases easily spread from one part of the IGAD region to another posing serious challenges to the livelihoods of the poor and the national economies;
- The challenges are shared among the MS and the solutions require a coordinated approach at the regional level;
- Timely and effective delivery of veterinary services can have a substantial impact on reducing vulnerability and increasing the economic impact from livestock production;
- Strengthened national veterinary and institutional structures can enhance the ability to respond to emergencies and to satisfy the regulatory requirements for international trade;
- Private sector actors have an important role to play in the delivery of i) private goods and ii) some public goods through sanitary mandates and public-private partnerships (PPP), thus allowing the public sector to concentrate on regulatory and policy functions;
- Harmonization of national livestock policies at the IGAD level is indispensable in order to establish effective and sustainable mechanisms of dealing with these challenges;
- If strengthened, the IGAD Secretariat has the potential to play a critical role in addressing these capacity constraints by serving as a center of excellence at the service of its member States and also as a conduit for technical input from other institutions.

2.0 IGAD ANIMAL HEALTH STRATEGY

To safeguard the livestock sector and ensure that it continues to access domestic and export markets and in line with the Regional Policy Framework on Animal Health (RPF AH) for enhancement of disease control and promotion of trade, a Regional Animal Health Strategy for priority diseases in the IGAD region is needed. This strategy is built on the basis that prevention is better than cure and that by working together in a coordinated and collaborative manner, the Member States can effectively combat the numerous trans-boundary animal diseases that are prevalent in the IGAD region. The latter is the focus of the IGAD Centre for Pastoral Areas and Livestock Development (ICPALD). The prevention and control of animal diseases and pests is a mandate of the veterinary services of the Member States (MS). The strategy is based on the assumption that all the MS will adopt it and provide the necessary human, physical, institutional and financial resources for its implementation. The IGAD secretariat shall coordinate the implementation of the strategy while the MS implement the activities at national level.

Vision: The enormous animal resources of IGAD region, supported by effective and demand-led animal health services, readily access international markets and contribute significantly to national economies and improved living standards.

Goal: Sustainable livestock production and trade that contribute to growth, poverty reduction, and improved food and nutrition security in the IGAD region.

Overall objective: To provide an animal health framework that enhances domestic food security and increases access of livestock and livestock products to national, regional and international markets.

¹Regional Policy Framework on Animal Health in the context of trade and vulnerability of the Member States of IGAD (Djibouti, Dec 2009)

The strategies for effective animal health service delivery for the prevention and control of diseases and zoonoses in the IGAD region include:

1. Strengthening national veterinary institutions to enhance the capacity for delivering effective animal health services.
2. Strengthening animal disease surveillance and reporting systems and regional sharing of data to improve disease prevention and control.
3. Identifying priority interventions and disease control measures in order to use limited resources for maximum regional impact.
4. Enhancing regional and national emergency preparedness for priority animal diseases.
5. Instituting sustainable mechanisms for regular and timely coordination between MS.

The regional animal health strategy will be implemented by MS and coordinated by IGAD. The success of the animal health strategy shall depend on the political and financial support by the individual MS. The success of this strategy shall also depend on the support it receives from international and continental organizations, such as FAO, OIE, AU-PANVAC and AU-IBAR and research institutions such as ILRI. Performance indicators to measure progress in strategy implementation and to inform priorities, target resources and focus discussion on improvement of animal health and welfare in the IGAD region will be developed by MS and harmonized by IGAD in the course of implementation. Similarly, the inputs and outputs will be defined during planning and implementation.

3.0 STRATEGIC PILLAR 1: Strengthening national veterinary institutions to enhance the capacity for delivering effective animal health services

3.1 Quality of veterinary services

The quality of the national veterinary services in the IGAD MS should depend on a set of factors, which include fundamental principles of an ethical, organizational, legislative, regulatory and technical nature. The veterinary services shall conform to these fundamental principles, regardless of the political, economic or social situation of their country. Compliance with these fundamental principles is important to the establishment and maintenance of confidence in its international veterinary certificates by the veterinary services of other countries that are members of OIE.

To be effective, the Veterinary Authority of a MS should be able to demonstrate that it has the capacity, supported by appropriate legislation, to anticipate and exercise control over all animal health and animal welfare matters. These controls should include, where appropriate, compulsory notification of prescribed animal diseases, inspection, movement controls through systems which provide adequate traceability, registration of facilities, quarantine of infected premises or areas, testing, treatment, humane killing of infected animals, disposal of carcasses, or destruction of contaminated materials, controls over the use of veterinary medicines, etc. The veterinary services should have at their disposal effective systems for animal disease surveillance in accordance with the Terrestrial Animal Health Code. Furthermore, the MS should develop Memoranda of Understandings (MoUs) with their neighbouring countries' Veterinary Authorities for the control of animal diseases across their borders. This entails establishing mechanisms for disease reporting and surveillance and regulations for trans boundary animal health activities. Within the structure of Veterinary Services, there should be appropriately qualified personnel whose responsibilities include animal welfare. The Veterinary Authority should be able to demonstrate that they have adequate capabilities and legislative support for zoosanitary control of imports and transit of animals, animal

products and other materials which may introduce animal diseases. The Veterinary Services should have the capacity to provide accurate and valid certification for exports of animals and animal products, based on Chapters 5.1 and 5.2 of the Terrestrial Animal Health Code.

The veterinary services should at all times endeavour to improve their performance in terms of animal health information systems and animal disease prevention and control. The MS should be encouraged to undertake self-evaluation using the OIE PVS Tool for Evaluation of Performance of Veterinary Services (PVS) (Terrestrial Animal Health Code 2016, Chapter 3.2) to establish their current level of performance, to identify gaps and weaknesses in their ability to comply with OIE international standards, to form a shared vision with stakeholders (including the private sector) and to establish priorities and carry out strategic initiatives. The evaluation should demonstrate that the veterinary services have the capability for effective control of the sanitary and zoosanitary status of animals and animal products. Key elements to be covered in this process include adequacy of resources, management capability, legislative and administrative infrastructures, independence in the exercise of official functions and history of performance including disease reporting.

3.2 Capacity of Veterinary Boards

The capacity of Veterinary Boards² (VB) in IGAD MS should be strengthened to enable them to oversee the quality and professional conduct of veterinarians and veterinary para-professionals, set standards for licensing and training (both initial and continuing) and take disciplinary action in cases of non-compliance with licensing requirements. It is important that all MS should have functional veterinary boards and MS without VBs should be supported to urgently establish them. To safeguard the safety of food of animal origin and also enhance the confidence of importers of livestock and livestock products, the IGAD secretariat should lobby the MS to establish and strengthen VBs using OIE guidelines (Terrestrial Code Article 3.2.12, Evaluation of Veterinary Services) and increase financial and legislative support to facilitate VBs to effectively regulate animal health services and the training of animal health service providers.

3.3 Training of animal health service providers

In each of the MS there are multiplicities of institutions that train veterinarians and veterinary para-professionals and other cadres involved in livestock production and delivery of animal health services. Their training should however meet international standards and follow OIE guidelines and recommendations including the recommendation for '*Day One Competence*' of veterinary graduates. The IGAD secretariat should lobby for use of a harmonized curriculum for training and the institution should have adequate human resources, facilities and equipment for training.

3.4 Quality of Veterinary Para-professionals

In some countries within the IGAD region community-based animal health workers (CAHWs) are part of the animal health services delivery chain and provide invaluable services particularly in the pastoralist areas. In view of the role they play in delivering basic animal health services in the pastoralist areas the veterinary services should work closely with the Veterinary Boards to determine which are the requirements for these lowest cadres in the animal health services delivery chain, their qualifications and training, the circumstances under which they should operate and their reporting requirements. Expanding the chain to include the "*last mile delivery*" will contribute to improvement in animal health services in remote or marginalised areas.

² The *World Organization for Animal Health* (OIE) refers to Veterinary Boards as *Veterinary Statutory Bodies* (VSB), in some IGAD MS, these are referred to as Veterinary Councils (e.g. Sudan).

3.5 Enabling legislation

Effective prevention and control of animal diseases and emergencies requires an enabling regulatory framework. The MS should therefore review/modernize the legal framework for delivery of animal health services in line with the OIE guidelines for veterinary services (Chapter 3.1; Terrestrial Animal Health Code 2016) and veterinary legislation (Chapter 3.4; Terrestrial Animal Health Code 2016) to support implementation of the regional animal health strategy and national disease specific control strategies. The legislative framework should ensure that national rules do not constitute a potential obstacle to internal and regional market.

The revised legislative framework should enable:

- Proper regulation and participation of community-based animal health workers (CAHWs) in improving the '*last mile delivery*' of animal health services in the ASALs. The regional animal health strategy should urge member states to consider developing legal framework for training, licensing and regulating them and providing better coordination and supervision by veterinarians. The legal framework should define their role in drug supply and use and disease reporting, as well as, their integration with NGOs, government veterinary services, the private sector and the local community.
- Veterinarians and veterinary para-professionals to have direct participation in stocking and dispensing veterinary medicines to livestock owners.
- Create an enabling environment with clear guidelines on use of acaricides and high quality veterinary medicines to enhance disease control.
- There is need for policies and regulatory framework to delineate the roles and responsibilities of the public and private sectors in delivery of animal health services and create enabling environment for their participation.

Proposed key activities will include:

- IGAD to lobby MS to increase the physical, human and financial capacity of veterinary services to enhance their capability of delivering better animal health services.
- IGAD to support review, standardization and harmonization of veterinary curricula and facilities for training of veterinarians and veterinary para-professionals in the IGAD region.
- IGAD to support MS to conduct (external and self-) regular assessment of Performance of Veterinary Services using OIE guidelines to identify gaps that need to be addressed to improve service delivery.
- IGAD to develop a guideline and minimum standards that acknowledge the role of Community-based Animal Health Workers (CAHWs) in the delivery of effective animal health services, especially to the pastoralist areas of the region and define operation modalities;
- IGAD to support establishment of functional veterinary boards in MS that currently do not have them and lobby MS to increase financial allocation to allow the existing veterinary boards deliver on their mandates more effectively.
- IGAD to support MS to review their veterinary legislation in compliance with the current OIE standards (Terrestrial Animal Health Code 2016, Chapter 3.4) to support all actions for disease prevention and control, emergency response and animal health service delivery by the public and private sectors including veterinary paraprofessionals involved in the '*last mile delivery*' of animal health services.

4.0 STRATEGIC PILLAR 2: Strengthening animal disease surveillance and reporting systems and regional sharing of data to improve disease prevention and control

4.1 Disease surveillance

Animal disease surveillance or epidemiological surveillance is an important tool for monitoring disease trends, facilitating the prevention and control of disease or infection, providing data for use in risk analysis, for animal or public health purposes and for substantiating the rationale for sanitary measures. The veterinary services of member states should have efficient surveillance systems for the timely detection and identification of an incursion or emergence of animal diseases in a country, zone or compartment as provided for under OIE standards in the Terrestrial Animal Health Code (Chapter 1.4). The core requirement for enhancing the effectiveness of control activities against trade-sensitive animal diseases is to develop surveillance systems that focus on the greatest payoff in detecting disease and demonstrating freedom from specific diseases. Such a surveillance system should use new and improved epidemiological methods and be risk-based to direct resources at disease prevention and control activities to areas of the country with the highest risk of entry and spread of the disease.

The surveillance system should also have:

- representative coverage of target animal populations including wildlife;
- a legal obligation of animal owners and private animal health service providers to report to the veterinary authority about occurrence of notifiable diseases;
- the ability to undertake effective disease investigation and reporting;
- access to laboratories that are capable of diagnosing and differentiating relevant diseases;
- a training programme for veterinarians, veterinary para-professionals, livestock owners and other relevant actors in the livestock value chains for detecting and reporting of unusual animal health incidents;
- sufficient institutional epidemiological expertise with necessary resources to undertake surveillance and rapid response.

Strategies are needed to ensure that the national surveillance systems can meet the challenges posed by emerging infectious diseases, while recognizing the context of resource limitation of IGAD member states. Identifying appropriate tools and incentives that encourage the full participation of both public and private sector actors is critical. The animal health strategy aims to initiate development of effective but affordable surveillance systems that incorporate strong partnerships between public and private sector actors engaged in animal health service delivery. A key actor in the surveillance chain is the livestock owner who is also legally mandated to report outbreaks of notifiable diseases. For the surveillance system to be effective, the benefits of prompt reporting of disease outbreak and rapid response must be clear to all the stakeholders. In turn, the livestock owner is entitled to proper and timely feedback.

Surveillance and early warning systems will only produce payoff if prompt decisions are made on how to respond to information, followed by effective implementation of actions to control the disease. This means responding quickly and decisively to imminent threats but adopting a measured approach that is appropriate to the scale and nature of the threat. There is need to strengthen the practical effectiveness of regional cooperation efforts in disease surveillance, early warning of emerging problems and coordinated response to potential disease incursions. The animal health services should ensure that their actions are acceptable to and supported by the livestock owners and other relevant stakeholders.

Application of sanitary measures arising from disease reporting should be done in a way that will not deter future disease reporting. The involvement of livestock owners in planning for disease prevention and control will help to build the necessary support to the surveillance system. For the animal resources of the IGAD region to increase their contribution to supporting livelihoods and accessing new international markets animal disease surveillance can no longer be conducted as business as usual and new initiatives that are more supportive of disease surveillance systems are needed.

4.2 Capacity of diagnostic laboratories

The veterinary laboratories are essential in the delivery of veterinary services and without the data and information supplied by them, animal disease detection, control and prevention would be significantly weakened. The management of veterinary laboratories (Chapter 1.1.1) as well as the performance of their diagnostic functions should follow several standards specified by the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2016 (<http://www.oie.int/international-standard-setting/terrestrial-manual/access-online/>). Most of the veterinary laboratories in the region cannot provide timely and reliable diagnostic services and animals are in most cases treated without confirmatory diagnosis. In addition, livestock owners have been discouraged from submitting samples for laboratory testing since the turnaround time is often too long for effective disease control at the farm. The veterinary laboratories therefore need to be improved to serve the livestock industry better and support disease control efforts.

The rapid and definitive diagnosis of diseases can only be attained in properly equipped and functional laboratories at field and national levels. This can be achieved through a mix of new diagnostic technologies such as validated pen-side tests, enzyme immunoassays such as enzyme-linked immunosorbent assay (ELISA) and molecular techniques such as real-time reverse transcriptase polymerase chain reaction (rRT-PCR) as well as rebuilding core competencies in national laboratories through training in specific diagnostic techniques. The quality of the national veterinary diagnostic laboratories of a country underpin the whole control and certification process of the zoosanitary status of exported animals and animal products. In view of this, diagnostic laboratories must be subjected to rigorous quality assurance procedures and should use international quality assurance programmes for standardizing the test methodologies and testing proficiency.

For very high-impact TADs, consideration should be given to developing capabilities for some key diagnostic tests (e.g. antigen and antibody detection tests). The laboratories should set standard operating procedures (SOP) and create linkages with international reference diagnostic laboratories. The surveillance and laboratory networks, such as those established for HPAI and PPR emergency preparedness should be strengthened to play an active role in setting standards and sharing of resources and skills within the region.

4.3 Information management

Timely and good-quality information about disease events are needed in order to understand the disease situation, support decision-making, prevent potential disease incursion and respond quickly in an emergency situation. An information management system that allows robust analysis of epidemiological data and sharing of information among relevant agencies at national, regional and international levels is of vital importance in prevention and control of animal diseases and zoonoses and should be embraced by all the MS. The information management systems should interface with existing regional and international animal health information systems such as Animal Resource Information System (ARIS) of AU-IBAR and WAHIS of OIE.

Key activities include:

- IGAD to promote development and application of effective surveillance protocols for priority TADs and zoonoses;
- Veterinary Services of MS to lobby for increased funding to support cost of surveillance;
- IGAD to strengthen existing disease surveillance and laboratory networks (developed under HPAI and rinderpest eradication);
- IGAD to organize regular refresher training on epidemio-surveillance and laboratory diagnostic techniques to enhance capacity of MS for disease control;
- IGAD and MS to support risk analysis for high-threat diseases that pose a challenge to the IGAD region;
- IGAD and MS to promote development of effective disease reporting networks for early detection of infectious diseases of poultry produced under Sector 4 (rural backyard poultry) and in the pastoralist areas;
- IGAD to provide support to a regional reference laboratory with capacity and capability to offer confirmatory diagnostic testing of selected TADs;
- IGAD to promote the recognition of OIE-accredited reference laboratories and collaborating centres in the region;
- IGAD to promote regional sharing of best practices for disease surveillance in rural areas with special emphasis on pastoral areas;
- IGAD to lobby MS and provide support to upgrade and network veterinary laboratories in the region to provide timely and reliable diagnostic services;
- MS to promote increased public awareness on disease reporting, prevention and control;
- IGAD and MS to promote better usage of animal health information systems, including the reporting systems to AU-IBAR (ARIS) and the OIE (WAHIS);
- MS to support training on communication (for public awareness on disease reporting, disease prevention and control, risk communication and crisis communication).

5.0 STRATEGIC PILLAR 3: Identify priority interventions and disease control measures in order to use limited resources for maximum regional impact

5.1 Prioritized livestock diseases for the IGAD region

Several enzootic and epizootic animal diseases constrain livestock production and trade in the IGAD region. Through technical consultations, the Standards Methods and Procedures in Animal Health (SMP-AH) and the Surveillance of Trade Sensitive Diseases (STSD) Projects co-implemented by ICPALD and the African Union Inter-african Bureau for Animal Resources (AU-IBAR) prioritized several livestock diseases in the region for prevention, control and possibly eradication (Magona *et al.*, 2016). The selected priority diseases, based on their perceived economic importance, are also in the OIE list of diseases, infections and infestations in force in 2016 (Chapter 1.3) and include:

- A: *Multiple species diseases, infections and infestations*
- Foot and Mouth Disease (FMD);
 - Rift Valley Fever (RVF);
- B: *Cattle diseases and infections*
- Lumpy Skin Disease (LSD);
 - Contagious Bovine Pleuropneumonia (CBPP);
 - Bovine Brucellosis
- C: *Sheep and goat diseases and infections*
- Peste des Petits Ruminants (PPR);
 - Sheep and Goat Pox (SGP);
 - Contagious Caprine Pleuropneumonia (CCPP)
- D: *Other diseases and infections*
- Camel Pox.
- E: *Avian diseases and infections*
- Infection with avian influenza viruses
 - Infection with Newcastle Disease Virus

Recognizing the dearth of data for informing decisions on prioritization of animal diseases IGAD should facilitate regional studies on socio-economic assessment of the impact of TADs on household and national economies. Such data when combined with surveillance data shall provide evidence to support policy actions and strategies for disease prevention and control.

A review of the OIE WAHIS data for the past 5 years shows that many of the MS have reported occurrence of listed diseases. Most of the prioritized livestock diseases (PPR, SGP, CCPP, CBPP, LSD, FMD, camel pox and occasionally RVF) occur in the ASAL areas where surveillance and disease control is weak. To safeguard food security, reduce poverty and enhance trade in livestock and livestock products, the MS should put in place official control programmes for the prioritized animal diseases based on risk analysis and the available resources. The MS will implement disease control measures in line with international standards to reduce disease and market risks and increase consumer safety for expansion of trade.

The control of TADs will enable the IGAD region to meet sanitary requirements of the WTO SPS Agreement and the OIE and, therefore, enable more trade in livestock and livestock products within the region and improve access to competitive international markets. The IGAD member states should adapt global strategies for control of trans boundary diseases such as those developed by OIE and FAO for

progressive control of FMD and PPR. The control of FMD and PPR should be combined with the control of other important diseases identified by IGAD. The Progressive Control Pathway for FMD (PCP-FMD), a tool developed by FAO and OIE (FAO, 2011) to assist countries where the disease is still endemic to progressively increase the level of FMD control remains critical to improved control of the disease in the IGAD region. Member states should accelerate implementation of PCP/FMD control strategy in the quest to reduce or eliminate FMD virus circulation by 2027. At the regional level there is need for better coordination and harmonization of national strategies and activities and on the development of strong partnerships. The epidemiology and laboratory networks developed in the IGAD region during Global Rinderpest Eradication Programme (GREP) should be strengthened to support disease prevention and control strategies. The effective prevention and control of TADs will enable the IGAD region to meet sanitary and phytosanitary requirements of the OIE and WTO and, therefore, enable smooth trade in livestock and livestock products within MSs and improve access to competitive regional and international markets.

Effective management and control of the movement of livestock and livestock products is one of the most effective ways of preventing spread of diseases within the region and beyond. It is necessary to create awareness amongst stakeholders on the hazards of unregulated movement of animals. By improving the efficiency of issuance of movement permits through use of digital platforms, the national veterinary services can contribute towards reduction of animal movements in the region thereby reducing disease spread.

5.2 Sanitary measures for disease control

Sanitary measures such as vaccination, stamping-out, livestock quarantine, movement control, closure of livestock markets and slaughter ban are perhaps the most effective ways of preventing spread of diseases within the region and beyond. However, there is often a problem in sustaining these measures for a long time in pastoralist areas where livelihoods are dependent on livestock trade. Other measures for disease control, such as vaccination, should be applied to minimize the impacts of sanitary measures on livelihoods.

5.3 Vaccination against priority animal diseases

Vaccination when combined with other disease control measures can be a very effective tool for disease control. For vaccination to be effective, it has to be done before the disease breaks out. This necessitates effective disease surveillance, strong public and private sector partnership, clear policy/legislation on disease prevention and control. Additionally, there must be registration and proper regulation of veterinary medicines, early warning with sufficient lead time to allow for vaccination. Availability of affordable, thermostable or thermotolerant, safe and efficacious vaccines is a must. To ensure efficacy of these vaccines, it is essential to store them in appropriate facilities and use efficient delivery mechanisms in the field such as cold-chain system.

The delivery of animal health services in pastoralist and agro-pastoralist livestock production areas remains a major challenge. In some of the IGAD MS, the sale and distribution of veterinary medicines is governed by legislation that precludes animal health service providers to stock and sell. In nearly all IGAD MS, only pharmacists are officially authorized to stock and sell the products to users. To enhance disease prevention in these areas, new strategies for improving distribution of veterinary medicines to remote areas are needed. In addition, there is need for sustained sensitization of livestock owners on the benefits of routine vaccination to build herd immunity and minimise disease outbreaks.

Data from OIE shows that the vaccination coverage for the priority animal diseases in the IGAD region is extremely poor (OIE WAHIS 2016). Recent evidence indicates that considerable reduction of cases of sheep and goat pox can be achieved when the goal for vaccination coverage is set between 75 and 90% coverage (FAO 2001). In designing vaccination strategies for priority target diseases there is need for IGAD

to facilitate an elaboration of a scientific opinion to determine the target vaccination coverage for each of the priority diseases. The current vaccination efforts for some of the diseases in the region are not based on any clear vaccination targets, are poorly coordinated and in most cases are not based on defined disease prevention and control strategy. The success of such vaccination activities are difficult to monitor especially when the immune response to such vaccines cannot be differentiated from immune response to infection. The global and regional strategies for prevention and control of FMD and PPR, if implemented well, are a good starting point for improving the control of other high-impact animal diseases.

Vaccines for the control of PPR, LSD, CCPP, CBPP, RVF, SGP, FMD, Newcastle disease are produced in Kenya, Ethiopia and Sudan. The vaccines are distributed throughout the IGAD region through public and private institutions. However, access to vaccines remains poor in the rural areas. In addition, the packaging of vaccines (number of doses per bottle) is usually not appropriate for smallholder livestock producers. There is need for IGAD to lobby for more effective delivery of vaccines to rural areas (including cold-chain) and to collaborate with international research institutes that are working on improved vaccines, such as the LSD/RVF combined recombinant vaccine and diagnostic kits.

The effective use of vaccines for livestock requires several complementary actions including:

- Enabling legislation;
- Effective disease surveillance;
- Investment for diagnostic proficiency and capability;
- Early response;
- Management of livestock movements;
- Effective participation of the private sector in delivery of vaccines;
- Effective public communication and collaboration with public health agencies for zoonotic diseases (One Health Approach).
- Coordination among several multi-sectoral agencies (very important for zoonotic diseases such as RVF and HPAI);

5.4 Livestock identification and traceability for disease prevention and control

It is imperative that this regional animal health strategy advocates for strengthening of animal identification through use of appropriate policy/legal framework and use of new technologies by member states. In doing so the member states should adopt the OIE guidelines for animal identification and traceability (Chapter 4.1, Terrestrial Animal Health Code 2016), the IGAD livestock identification and traceability systems (LITS) legal framework and the regional LITs guideline

5.5 Biosecurity measures for disease prevention and control

This regional animal health strategy shall reinforce awareness on the use of appropriate biosecurity measures by livestock owners as this will not only help to protect against serious TADs, but also the more common endemic infectious diseases. Improved biosecurity measures will be very important for small scale farmers who keep backyard poultry as this will reduce the burden of common infectious diseases including ND. When coupled with proper use of vaccines and surveillance, improved biosecurity measures will enhance income from free-range poultry, and also enhance detection of an incursion of a new disease such as HPAI.

5.6 Communication and awareness

The national veterinary services should develop and implement communication strategies that aim to make animal owners, livestock traders and processors and other relevant stakeholders aware of the nature and potential consequences of re-emerging transboundary and emerging animal diseases and zoonoses and of the benefits to be derived from their prevention, reporting and control. In addition, it is critical to make the animal traders aware of the benefits of complying with sanitary measures imposed by the

Veterinary Authority during disease epizootics. It is essential to monitor the outcome of public awareness efforts and make appropriate changes (in partnership with target audiences) for effective improvement in disease notification, prevention and control. The communication should also target modification of risk behaviors that increase transmission of zoonoses such as bovine tuberculosis, brucellosis and RVF especially among the pastoralists.

5.7 National strategies for prevention and control for priority animal diseases

The regional animal health strategy encourages the MS to develop prevention and control strategies for each of the identified priority animal diseases. Where possible, the disease specific strategies should adopt regional and global disease control strategies and domesticate them as appropriate. Eradication of the priority diseases is not seen as practical outcome within the timescale of the regional animal health strategy (2017-2022) and more focus should be directed at improving disease prevention and control. While developing disease specific strategies it will be important to integrate cross-border planning and harmonization of the strategies. The engagement of stakeholders and individuals in the strategy development and implementation process will increase their understanding and commitment to achieving the desired outcome.

Animal owners must understand the strategies and accept their obligations. It is unlikely that the control of all the priority animal diseases can totally depend on funds from the government and development partners. Member States should identify incentives that will make livestock owners and value chain actors contribute more to the control of many of the priority diseases that are enzootic in the region. The MS should invest more in the control of animal disease emergencies and in providing guidelines for improved prevention and control measures for enzootic diseases. In this regard, the IGAD Secretariat should lobby MS to adopt the Maputo Declaration of investing at least 10% of GDP into the agricultural sector.

Where livestock crosses national borders freely there is need for the disease control strategies to be harmonised between the affected MS. IGAD can play a crucial role in facilitating cross-border development and harmonization of measures for disease prevention and control that do not hinder formal trade in livestock and livestock products. IGAD should also facilitate inter-REC coordination and sharing of information and data on diseases and the measures used for prevention and control (with ECCAS, EAC, GCC).

Key activities include:

- IGAD should lobby MS to regularly review and update the legislative framework to support better delivery of veterinary services to control of animal diseases and to facilitate entry and use of genetically modified multivalent veterinary vaccines that have comparative advantages over conventional vaccines;
- IGAD to support livestock policy and legislative gap assessment in MS;
- IGAD to promote disease prevention and control policies and strategies for the identified TADs by MS;
- IGAD to lobby MS to implement disease control strategies in collaboration with IGAD and international agencies;
- IGAD to lobby MS to adhere to global control, elimination and eradication targets (FMD-PCP, PPR-GEP);
- IGAD to support studies to provide guidelines on rational use of vaccines including a determination of target vaccine coverage and exit strategies for the identified priority animal diseases;

- MS to promote the development of communication strategies to improve awareness amongst livestock owners and value chain actors on their legal requirements for disease reporting and on the need for preventive use of vaccines and treatments to control animal diseases;
- MS to enhance participation of the private sector actors in the '*last mile delivery*' of veterinary services to reach marginalized communities;
- IGAD to lobby MS to adopt better methods for livestock identification and traceability using regional and international guidelines;
- IGAD and MS to promote use of cost-effective biosecurity measures to enhance control of preventable animal diseases;
- IGAD to facilitate cross-border planning and harmonization of disease prevention and control;
- IGAD to strengthen linkage and exchange of information between IGAD and neighbouring RECs;
- IGAD to facilitate regular meetings of CVOs and disease surveillance, prevention and control experts to review progress towards prevention and control of priority and emerging animal health issues;
- IGAD to facilitate regional studies on socio-economic assessment of the impact of TADs on household and national economies.

6.0 STRATEGIC PILLAR 4: Enhance regional and national emergency preparedness for priority animal diseases and climate related livestock disasters

Animal disease emergencies require an immediate local and national response, so as to minimize the serious socio-economic and public health consequences that they may cause. Any delay may lead to disease outbreaks spreading over large areas, making their control and eradication much more costly and difficult, or even impossible to achieve, leading to an enzootic situation. The most likely cause of a disease emergency is an incursion into a country of a TAD. Animal disease emergencies may also be caused by a sudden resurgence of an enzootic animal pathogen, resulting from changed environmental or epidemiological conditions. In the case of vector-borne diseases, unusual climate patterns (e.g. rainfall and temperature) lead to population explosions of competent insect vector species and disease outbreaks.

Regardless of the nature or source of the animal health emergency a rapid local and national response by the animal health services is required. This should be part of contingency plans that encompass a range of prevention, preparedness, response and recovery actions that can be used for a wide range of disease situations. For contingency plans to be operational and effective the MS need to provide, in a timely manner, the resources required for effective response.

6.1 Contingency plans

IGAD should assist the MS to develop contingency plans that can be activated to respond to outbreaks of re-emerging disease (such as RVF) or an emerging disease such as the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) of camels and HPAI. The plans should be guided by principles that are applicable to emergency disease management, such as:

- 1) **Organisational** – require that functional responsibilities for preparedness and response activities be formally established and recognised in the plans;
- 2) **Command and control** – necessitate responsibility for overall control to be clearly specified in the plan prior to an emergency and not open to challenge;
- 3) **Coordination** – require that the authority and responsibility for assembling resources be clearly specified in the plan prior to an emergency;
- 4) **Information management** – the effective management of information is essential, not only to assist the handling of an emergency but to protect trade, inform food industry participants and reduce consumer concerns;
- 5) **Timely activation of actions** – made by designated decision makers;
- 6) **Effective emergency planning** – require the plan to be written, simple, regularly tested and revised.

6.2 Model framework for emergency management

In any emergency plan, there are five critical stages. These are: 1) Pre-outbreak, 2) Trigger and containment, 3) Scoping, (Correct public awareness) 4) Response and, 5) Recovery. The activities in each stage are outlined in Figure 1.

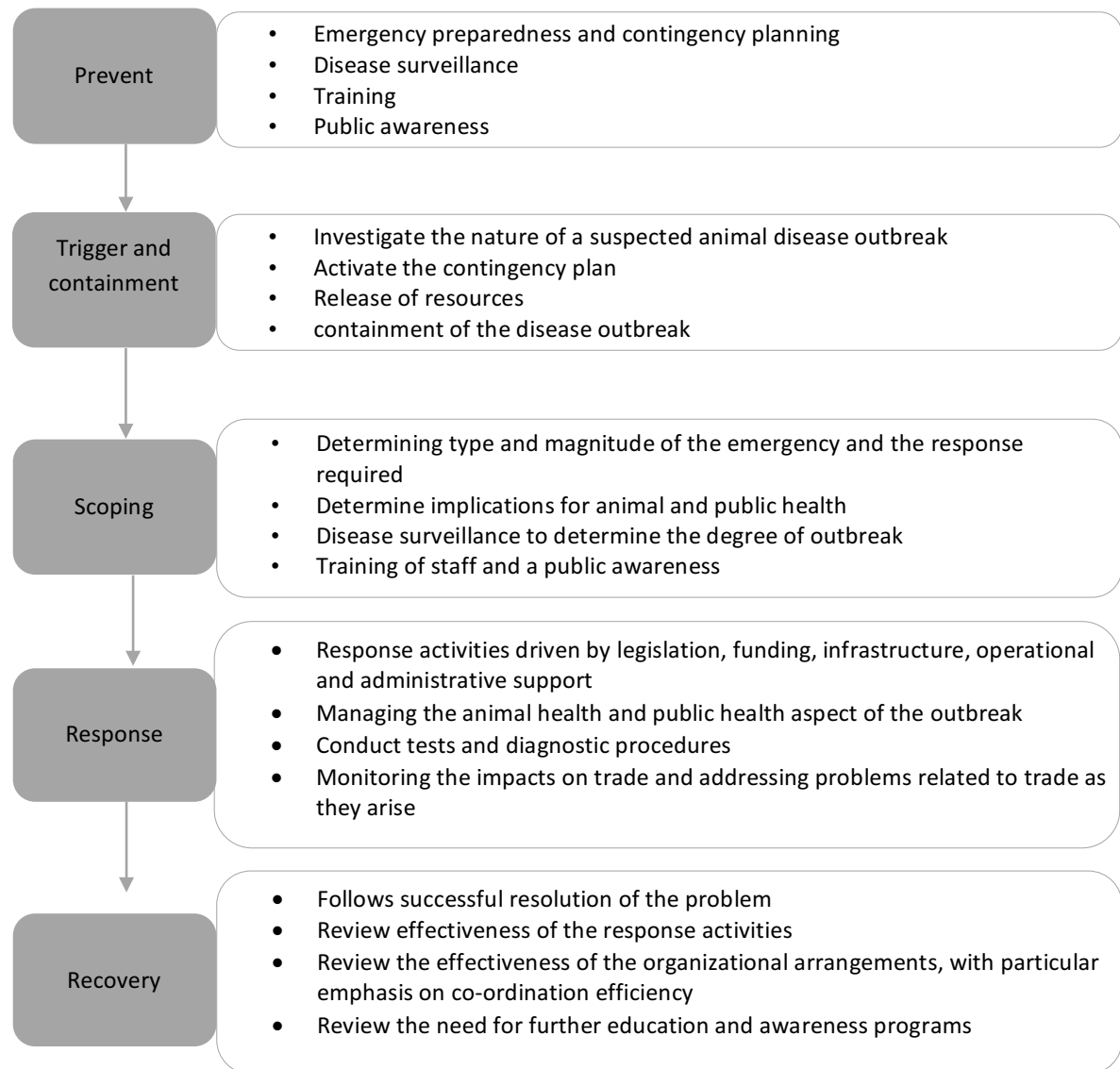


Figure 1: Model framework for animal disease emergency management.

6.3 Impact of climate change on vector-borne diseases

Climate change is associated with changing seasonal patterns leading to extreme weather events of precipitation and drought. Consequently, climate change is bound to have negative impacts on agriculture and public health. Of particular concern is the impact of climate change on vector-borne diseases such as Rift Valley fever and devastating tick-borne diseases such as east coast fever. The ecology, development, behaviour and survival of insect vectors and the transmission dynamics of the diseases they transmit are strongly influenced by climatic factors. Moreover, the life-cycle dynamics of the vector species, pathogenic organisms and the reservoir organisms are all sensitive to weather conditions, which affect the survival and reproduction rates of the vectors, their habitat suitability, geographical distribution and abundance,

and impact their seasonal intensity and temporal activity. Climate change is real and climatic conditions are most likely to alter the geographic range of vector-borne diseases and lengthen their transmission seasons (WHO, 2015). The geographic range of RVF has been expanding and a recent study shows high-risk of future RVF outbreaks that will lead to occurrence of the disease in parts of eastern Africa that to date have remained unaffected by the disease including western Kenya and southwestern Uganda (Taylor et al., 2016). Based on the results, there is a clear need to remain vigilant and to invest not only in surveillance and early warning systems, but also in addressing the socio-economic factors that underpin social vulnerability in order to mitigate, effectively, future impacts of climate change.

The expansion patterns of vector-borne diseases (VBD) know no political borders and efficient prevention of climate-induced spread of VBDs must include both national and regional actions and international cooperation. Climate change mitigation and adaptation require cross-border cooperation and regional networks. The need for regional cooperation is important in the IGAD region. The region is characterised by high socio-economic diversity between countries and by political tensions that make cooperation very challenging.

Vector management requires trans-disciplinary and inter-sectoral cooperation between health, climate, environment and development government agencies, and between government and the private sector, civil society and academia as well as regional cooperation. Vector control also needs to include all levels of government: local, national and international. Having in place trained personnel in equipped laboratories should strengthen the diagnostic capability of all the potential VBDs. Countries should conduct risk assessments and identify areas at risk, and populations at special risk for VBDs.

Key activities include:

- IGAD to support MS to develop contingency plans for high-threat animal diseases with a likelihood of being introduced into IGAD member states;
- IGAD to lobby MS to include financial provisions for emergency preparedness and response into national planning;
- IGAD to support regional simulation exercises to strengthen response to emergencies;
- IGAD to support regular regional technical consultative forums to review disease emergencies and response strategies;
- IGAD to strengthen linkage with regional and international organizations involved in animal resources (AU-IBAR, FAO, and OIE);
- IGAD to support MS to conduct regular monitoring of emergence, density and geographic distribution of competent vectors and the pathogens they transmit. Epidemiological data on VBD-related morbidity and mortality should be collected systematically and consolidated with environmental and ecological data;
- IGAD to support MS to develop harmonised legal mechanisms to improve sustainable vector management (integrated vector management);
- IGAD to support MS to develop and regularly review health system preparedness for dealing with outbreaks of vector-borne diseases;
- IGAD to support MS to strengthen public education on climate change and encourage their participation in combating and preventing vector-borne diseases through identifying, reporting and managing vector breeding sites and information about individual protection in case of an outbreak.

7.0 STRATEGIC PILLAR 5: Instituting sustainable mechanisms for regular and timely coordination between MS

The IGAD secretariat in general and ICPALD in particular have a crucial role to play in harnessing the animal resources of the region to make bigger contribution to livelihoods and national economies. A strengthened IGAD secretariat that addresses the livestock sector in a more holistic way has the potential to play a critical role in addressing capacity constraints by serving as a center of expertise at the service of its Member States and also as a conduit for technical input from other institutions involved in animal health and trade.

7.1 Funding of veterinary services and related institutions

To sustain and expand international trade in livestock and livestock products the MS must increase budgetary support to enable the veterinary services to effectively discharge their mandate. The IGAD Secretariat is in a good position to lobby the Member States to increase budgetary allocations to the agricultural sector in line with the 2003 *Maputo declaration* and 2014 *“Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods”* of AU Heads of State and in particular to increase budgetary allocation to the livestock sector for prevention and control of animal diseases and livestock-related emergencies. A renewed political commitment is needed to ensure that the animal resources in the IGAD region get the best veterinary services possible so that they can readily access regional and international markets. In particular, the weak veterinary infrastructure in Somalia, a country that annually exports millions of live animals, should be given special attention in implementation of the animal health strategy. This is more so because an epizootic of a trade-limiting animal disease in Somalia is likely to affect export of live animals from other IGAD member states.

The role of international organizations such as the World Bank, African Development Bank, OIE, FAO and AU-IBAR in mobilizing and consolidating funds for the progressive control and eradication of global TADs remains critical. The MS and IGAD must strengthen their partnerships with these organizations as well as looking for alternative sources of funding from non-traditional donors.

The prevention and control of animal diseases cannot, and should not, entirely depend on donor funds. The MS and the national veterinary services should reinforce the role of the animal owners and value chain actors in meeting the costs for the prevention and control of enzootic diseases. The public sector should partner with the private sector and create incentives to allow for better participation of the latter and to make veterinary medicines more accessible and affordable.

7.2 Harmonization across Regional Economic Commissions

The movement of animals and animal products within the IGAD region occurs freely through both legal and illegal channels. Animals move freely across borders in search of pasture in the pastoralist areas. The prevention and control of animal diseases therefore requires close cooperation between neighbouring countries and Regional Economic Commissions (RECs), respectively. Moreover, some countries such as Tanzania are not members of IGAD but are members of the East African Community. The effective prevention and control of animal diseases will therefore require harmonization of approaches within and between neighboring RECs.

Proposed key activities

- IGAD to lobby member states to implement the 2014 *“Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods”*;
- IGAD to lobby MS to establish a regional protocol for prevention and control of animal disease emergencies;
- IGAD and MS to promote the application of principles of evidence-based planning and policy development;
- IGAD and MS to strengthen national and regional institutional capacities for knowledge and data generation and management that support evidence based planning, implementation, monitoring and evaluation;
- IGAD and MS to hold regular coordination and consultative forums to review the status of animal health in the region;
- IGAD to promote harmonization of disease prevention and control approaches between neighbouring RECs;
- IGAD and MS to strengthen partnership with multilateral donor agencies and other organizations to mobilize financial resources and OIE, FAO and AU-IBAR for technical support in implementation of the regional animal health strategy.

8.0 STRATEGY IMPLEMENTATION

The mandate for delivering animal health and welfare in the IGAD region rests on the veterinary services of member states. This strategy recognizes that the MS have the primary obligation of improving the health and welfare of animal resources. Delivering on the promises of the regional animal health strategy is dependent on a strong partnership between the MS and all the relevant stakeholders involved in animal health delivery and welfare. The strategy has looked into key areas that need to be addressed in order to deal more effectively with the challenges that face the livestock sector with a major focus on the dryland areas of the IGAD region. The strategy identifies shared responsibility between IGAD and the MS.

The MS should adopt and use this regional strategy along with other regional and global strategies to develop a national strategy implementation plan for enhancing prevention and control of animal diseases in general with particular emphasis to the identified priority diseases for the region. In developing the disease strategies, each MS will need to critically assess the inadequacies of the veterinary infrastructure identified in this strategy, the livestock populations at risk, the available resources and political support in the country. It is also important to remember that the animal owners are primarily responsible for the health and welfare of their animals and are therefore best placed to deliver tangible and continual improvements in disease prevention and control. IGAD shall facilitate MS in harmonizing disease control strategies as deemed necessary while paying special attention to areas where disease control is more effective when implemented using an ecosystem approach.

The disease specific strategies at country level shall incorporate indicators and milestones for strategy delivery. The indicators should be developed in consultation with IGAD and national stakeholders and used to guide policy, inform priorities, target resources and focus discussion on strategy implementation. Progress will be measured, monitored and communicated over the lifetime of the strategy. To enable MS measure progress towards achieving the strategy goal, the states should clearly articulate and document its baseline data on animal health sector.

8.1 Managing the strategy

The strategy will be managed through a partnership between IGAD, the MS and other relevant regional and international organizations. In particular, ICPALD shall establish coordination and consultation committees such as:

- Strategy Steering Committee – representatives from across the animal health sector tasked with providing strategic guidance and direction on the prioritization, development and communication of the regional strategy. The membership shall comprise of CVOs of the MS. The Directors of Medical Services can be coopted to strengthen a One-Health approach for control of zoonotic diseases.
- Expert Committee on Animal Production and Health – a pool of experts to provide scientific inputs for consideration by the Strategy Steering Committee. The potential members include epidemiologists, virologists, public health specialists, entomologists, data analysts, livestock production specialists, environmental and climate change experts. Technical backstopping and capacity building may be provided by FAO, ILRI and OIE.

The committees should meet twice annually to review the regional animal health status and as necessary depending on emerging animal health issues.

8.2 Approval of the Strategy

In order to assure the political support and goodwill that is necessary to successfully launch and implement the strategy, ICPALD shall engage the IGAD sectoral ministers and relevant Council of Ministers to endorse the strategy. Subsequently, the strategy will be presented to the IGAD summit for a decision by the Heads of State and Government of the IGAD region.

8.3 Partnerships and strategic alliances

To implement the strategy, ICPALD will need to develop or strengthen effective partnerships and alliances to leverage the expertise and other resources needed to attain the objectives of the strategy. ICPALD will also need to partner with a large number of stakeholder organizations at different levels in the Member States, in other regions and internationally. ICPALD will foster the necessary partnerships with different institutions and organizations, such as World Bank, African Development Bank, OIE, FAO, AU-PANVAC and AU-IBAR, to mobilize the technical, financial and political support necessary for implementation of the regional animal health strategy.

8.4 Resource mobilization

To implement this regional animal health strategy, the following resource mobilization strategies and approaches will be utilized as outlined in the ICPALD Strategic Plan 2014 -2017:

- (a) Continuing resource mobilization from national resources;
- (b) Continuing resource mobilization from bilateral and multilateral development partners including non-traditional development partners;
- (c) Strengthening public-private sector partnerships for resource mobilization.

In addition, each thematic area shall innovatively develop specific local resource mobilization, marketing and fundraising strategies.

The veterinary services of member states should show the benefits of improved animal health to the national economy as they seek the incorporation of animal health strategies and emergency preparedness in national planning for allocation of financial resources. The IGAD Secretariat should provide the

necessary push for implementation of the 2014 *“Malabo Declaration on Accelerated Growth and Transformation for Shared Prosperity and Improved Livelihoods”*.

8.5 National level actions

At the national level the regional animal health strategy shall provide a framework for further action. The success of the regional strategy shall rely on the sustainable implementation of agreed actions at the national level. This calls for the development or alignment of national strategies for the progressive control of TADs within each IGAD Member State. The Ministries responsible for livestock development should adopt the regional strategy and lead the process of implementation in consultation with relevant stakeholders using appropriate mechanisms to ensure the timely development of the national strategies. Strategy implementation should be multi-sectoral, multiagency, multidisciplinary and, where deemed necessary, embrace the One-Health approach. The national animal health strategies shall establish national coordination units that will report to the regional committees at ICPALD.

8.6 Monitoring and evaluation and reporting

Appropriate monitoring and evaluation frameworks should be developed for the monitoring and evaluation of the national programme. These should draw from the IGAD framework as well as from best practices in other monitoring, evaluation and reporting frameworks available nationally, within the IGAD region and internationally. Harmonisation with the-ICPALD *Results Based Monitoring and Evaluation (RBM&E)* framework shall facilitate the comparison of the monitoring and evaluation results across all the participating Member States.

9.0 REFERENCES

- David, T., Michael, H., Anne, E.J., Stefan, K., Joseph, L. and Andrew, P.M. (2016). Environmental change and Rift Valley fever in Eastern Africa: Project beyond health futures. *Geospatial Health*, Vol 11. No. 1s (2016): Health Futures.
- Kilpatrick, A.M., Meola, M.A., Moudy, R.M. and Kramer, L.D. (2009). Temperature, viral genetics and the transmission of West Nile virus by *Culex pipiens* mosquitoes. *PLoS Pathog*, 4, doi:10.1371/journal.ppat.1000092.
- Magona, J.W., Kwai, A.M., Olaho-Mukani, W., Aziz, A.A. et al., et al (2016). Target priority transboundary animal diseases and zoonoses in the IGAD region for control interventions. *Bull. Anim. Hlth, Prod. Afr.* 64, 371-386.
- Maya, N., Shlomit, P., Alexandra, C., Noemie, G. P., Uri, S., Tamar, Y. and Manfred, S.G. (2015). Impacts of climate change on vector borne diseases in the Mediterranean basin – Implications for preparedness and adaptation policy, *Int. J. Environ Res Public Health*, 12(6): 6745-6770.
- OIE/FAO (2012). The Global Foot and mouth disease control strategy. Strengthening Animal health systems through improved control of major diseases.
- OIE/FAO (2015). Global strategy for the control and eradication of PPR.
- Reisen, W.K., Fang, Y. and, Martinez, V.M. (2006). Effects of temperature on the transmission of West Nile virus by *Culex tarsalis* (Diptera: Culicidae). *J. Med. Entomol*, 43, 309-317.
- Reiter, P. (2001). Climate change and mosquito-borne disease. *Environ. Health Perspect*, 109, 141-161.
- Semenza, J.C. and Menne, B. (2009). Climate change and infectious diseases in Europe. *Lancet*, 9, 365-375.
- Sindato C., Karimuribo E. and Mboera G. (2012). The epidemiology and socio-economic impact of Rift Valley fever epidemics in Tanzania. A review: *Onderstepoort J. Vet Res.* 79, E1.
- Soumare B., Thys S., Berkvens D., Hashi A. and van Huylenbroeck G. (2006) Effects of livestock import bans imposed by Saudi Arabia on Somaliland for sanitary reasons related Rift Valley fever. *Outlook Agric.* 35, 19-24.
- World Health Organization (WHO) (2015).. Climate change and Health: Fact Sheet No. 266