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INTERAFRICAN BUREAU
FOR ANIMAL RESOURCES



MAPPING OF THE ANIMAL HEALTH ACTORS AND THEIR INTERVENTION AREAS IN AFRICA

FINAL REPORT



DISCLAIMER

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ACRONYMS

AGASA	Agence Gabonaise de Sécurité Alimentaire
AHITIs	Animal Health and Industry Training Institutes
AHSA	Animal Health Strategy for Africa
AHTTAK	Animal Health Technicians and Technologists Association of Kenya
AMR	Antimicrobial Resistance
ANDE	Agence nationale de développement de l'élevage
ARIS	Animal Resources Information System
ASAL	Arid and Semi-Arid Land
AU	African Union
AU IBAR	African Union Inter African Bureau for Animal Resources
CAHWs	Community Based Animal Health Workers
CBOs	Community Based Organisations
CDC	Centers for Disease Control and Prevention
CEBEVIRHA	Commission Economique du Bétail, de la Viande et des Ressources Halieutiques
CECOQDA	Centre de Contrôle de Qualité des Denrées Alimentaires
CEMAC	Communauté Economique et Monétaire de l'Afrique Centrale
COMESA	Common Market for Eastern and Southern Africa
COVID-19	Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)
CTTBD	Centre for Ticks and Tick-Borne Diseases
CVO	Chief Veterinary Officer
DVSs	Directors of Veterinary Services
EAC	East African Community
ECCAS	Economic Community of Central African States
EVA	Ethiopian Veterinary Association
FAO	Food Agriculture Organisation of the United Nations
FBOs	Faith Based Organisations
FNE	Fédération National des éleveurs de Centrafrique
IBAR	African Union Interafrican Bureau for Animal Resources
ICIPE	International Centre of Insect Physiology and Ecology
ICPALD	IGAD Centre for Pastoral Areas and Livestock Development
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
KAGRC	Kenya Animal Genetic Resources Centre
KALRO	Kenya Agricultural and Livestock Research Organization
KASPA	Kenya Animal Scientists and Professionals Association
KNLPH	Kenya National Livestock Policy Hub
KVA	Kenya Veterinary Association
KEVEAPI	Kenya Veterinary Vaccine Production Institute
KVB	Kenya Veterinary Board
KVPA	Kenya Veterinary Paraprofessionals Association

LANAVET	Laboratoire National Vétérinaire
LACEVET	Laboratoire central vétérinaire
LiDeSA	Livestock Development Strategy for Africa
MOUs	Memorandum of Understanding
MRAs	Mutual Recognition Agreements
NGOs	Non-Governmental Organisations
NVI	National Veterinary Institute
OHA	One Health Approach
OIE	World Organization for Animal Health
ONVT	Ordre National des Vétérinaires du Tchad
OVECA	Ordre des vétérinaires du Cameroun
PANVAC	Pan African Veterinary Vaccine Centre
PATTEC	Pan-African Tsetse and Trypanosomiasis Eradication Campaign
PPG	Pastoralist Parliamentary Group Kenya
RAHN	Eastern Africa Regional Animal Health Network
RECs	Regional Economic Communities
REPIMAT	Réseau d'Epidémiosurveillance des maladies Animales du Tchad
REMAGA	Réseau d'Epidémiosurveillance des maladies Animales du Gabon
SADC	Southern African Development Community
SECADEV	Secours Catholique pour le Développement
SISAC	Système d'Information sur la Santé Animale en Centrafrique
TADs	Transboundary Animal Diseases
TUNADO	Uganda National Apiculture Development Organisation
UVA	Uganda Veterinary Association
VCT	Veterinary Council of Tanzania
WHO	World Health Organisation

EXECUTIVE SUMMARY

Africa is endowed with variety and diversity of animal resources which play pivotal role in African society. These animal resources, comprising livestock, aquatic animals and wildlife, are critical incomes, livelihoods, nutrition, food security, and resilience in much of the continent. Indeed, on average, livestock alone contributes 35% of the national agricultural GDP. Despite abundant animal resources, Africa remains the world's poorest and most underdeveloped continent due to various causes including, but not limited to, the spread of deadly diseases, poor governance and insufficient compliance with international health regulations (IHR) and legislation, climate change and the vulnerability of actors in the sector. It has been observed that there are various actors intervening on animal health issues in Africa. Profiling these actors and their areas of activities will be critical to ensure complementarity and synergy of actions for better impact in AH sector. It is therefore imperative to map the different animal health sector stakeholders and their intervention areas for better coordination, role and accountability for better impacts on the sector. Recognizing the important role stakeholders play in animal health service delivery and the need for a more structured continental mechanism of engaging these stakeholders, the African Union Commission through AU-IBAR created the Continental Animal Health Actors Platform (CAHP) in Africa. CAHP-Africa is therefore the serves as governance body of AHSA and benefits from the guiding group (GG) which serves as an advisory group for CAHP-Africa.

Following the successful development of the Animal Health Strategy for Africa (AHSA) and the establishment of the Continental Animal Health Platform for Africa (CAHP-Africa) and its endorsement by AU Head of States summit, it was critical to map the AH actors and their intervention areas across the continent to support the operationalization of CAHP-Africa. To this effect a continental study was conducted in the five geographical regions in Africa.

The report highlighted on the followings:

- On the global state of animal health and priority diseases,
- On the characterization of public and parapublic structures in national animal health systems;
- Characterisation of private sector in national AH systems;
- An overview of key animal health actors and their intervention areas;
- On the critical analysis of coordination mechanisms on AH related issues;
- Global perception of the relationship between DSVs and decentralized animal health services;
- Global perception of coordination mechanisms for disease control and surveillance;
- Policy directions for better coordination of animal health stakeholders.

The key recommendations at national, regional and continental levels include:

- Priority actions for harmonization and coordination of national animal health stakeholders/stakeholders for better impact;
- Coordinate and harmonize disease intervention measures at regional and continental level;
- Strengthen national, regional and continental platforms i.e RAHN, CAHP-Africa for for better coordination of animal health actors/stakeholders for synergy of action for better impact.

Finally, to ensure the best conditions for success, certain fundamental factors must be brought together at regional and national levels, including the adoption of a participatory, collaborative, multi-sector and transdisciplinary approach in an inclusive process that integrates key stakeholders to enable stakeholder ownership associated with the establishment of an institutional framework that delineates interactions between actors and regional and continental structures.

INTRODUCTION

Africa's animal resources, comprising livestock, aquatic animals and wildlife, play a crucial role in food and nutritional security, livelihoods, tourism, national economies and provision of environmental services. However, the potential of the animal resources sector has not been realized given the status of animal health and welfare in the continent. Animal diseases are key determinants of animal health and welfare and are prevalent in Africa. The animal disease burden in Africa is responsible for annual losses of over US\$4 billion in Sub-Saharan Africa alone, equivalent to 25% of the total value of livestock production in the continent. Moreover, Africa's animal production systems are characterized by close contact between humans, domestic animals and wildlife, factors that are associated with increasing incidence of emerging and re-emerging diseases, many of which are zoonotic. Zoonotic diseases, as evidenced by the 2013-2016 Ebola epidemic in Western Africa, can have widespread ramifications with long-term devastating impacts on the economies of countries and the continent. Moreover, Africa's animal health service delivery systems are generally weak, and the majority of the African veterinary services assessed based on global standards for the performance of veterinary services have medium to low capacity in the critical competences. In a bid to fill this gap, AU-IBAR in close partnership with key stakeholders has developed and validated the Animal Health strategy for Africa (AHSA).

The Animal Health Strategy for Africa (2019-2035) provides a framework for delivering a sustainable animal health system in Africa that meets World Organization for Animal Health (OIE) and other relevant global standards. It provides a common vision and goals for the African continent for the improvement of animal health delivery systems. It is aligned to global, continental and regional frameworks including the Agenda 2063, Sustainable Development Goals (SDGs), Malabo/ Comprehensive African Agricultural Development Program (CAADP), Global Action Plan on Antimicrobial Resistance and the Livestock Development Strategy (LiDeSA). It is a call for African Union institutions, Regional Economic Communities (RECs) Member States and partners to adopt an integrated and holistic approach for the improvement of animal health systems in Africa, given the impact of animal diseases on the competitiveness of animal resources value chains, the increasing risk of emerging and re-emerging zoonotic diseases, climate change, inadequate environmental management and civil strife and conflict.

In addressing itself to the challenges and opportunities, the implementation of this strategy will lead to improved capacity to anticipate and mitigate the negative impacts of animal diseases, zoonosis, climate change, and disasters, with the ultimate goal of improving animal and public health, food safety, food and nutrition security, animal-dependent livelihoods, protection of the environment and sustainable economic growth.

It has been observed that there are various actors intervening on animal health issues in Africa. Profiling these actors and their areas of activities will be critical to ensure complementarity and synergy of actions for better impact in AH sector. It is therefore imperative to map the different animal health sector stakeholders and their intervention areas for better coordination, role and accountability for better impacts on the sector. Recognizing the important role stakeholders play in animal health service delivery and the need for a more structured continental mechanism of engaging these stakeholders, the African Union Commission

through AU-IBAR created the Continental Animal Health Actors Platform (CAHP) in Africa. CAHP-Africa is therefore the serves as governance body of AHSA and benefits from the guiding group (GG) which serves as an advisory group for CAHP-Africa.

In order to operationalize the CAHP-Africa, AU-IBAR contracted a consortium/firm to comprehensively map the animal health actors and their intervention areas across the African continent in order to support the operationalization of the continental platform for AH actors for Africa.

METHODOLOGY

To perform the assignment, a methodology based on a participative approach and a work plan were proposed. The methodology approach for the assignment include desk review, individual interviews and group discussions/meetings with key stakeholders and strategic actors of animal health (AH) across the continent. Interviews and group discussions/meetings sessions will use the participatory approach that allows the ideas of individuals/groups to be tested, argued, amplified and refined through constructive discussions. Given the current restrictions due to Covid-19 pandemic, all individual interviews and group discussion meetings will be in the form of online-conferences. Before the final report, an online workshop facilitated by AU-IBAR and bringing together regional key stakeholders and strategic actors will be organized to validate the outcomes of the assignment. This validation workshop will also help to reinforce participative and inclusive approaches in the mapping of AH actors and their areas of intervention, as well as in the proposition of a mechanism for their better coordination at national, regional and continental levels. Therefore, a brainstorming and constructive discussions will be used to comment, amend and validate the results of the assignment. In order to achieve the objectives of the assignment, the methodology approach was based on the six main steps such as (i) 3.2. Documentation and literature review on animal health actors, (ii) key animal health stakeholders and institutions consultations, (iii) development and administration of a comprehensive questionnaire on mapping of the animal health actors and their areas of intervention to MSs and RECs, (iv) propose a mechanism for better coordination of AH actors.

I. GLOBAL SITUATION OF ANIMAL HEALTH IN AND PRIORITIES DISEASES

The need for a comprehensive and responsive animal health surveillance system is particularly important given today's increasingly complex risk environment. Factors such as the increased movement of people, animals, goods and commodities, the intensification of animal production, and climate change, inter alia, mean that disease transmission progresses more rapidly and in more varied ways than in the past. The COVID-19 pandemic has demonstrated the need for transparent and rapid reporting of important animal and public health events. Supporting effective disease surveillance systems, linking veterinary and human surveillance, improving diagnostic capacity and general knowledge about zoonotic diseases has never been more important. A large part of the burden of foodborne disease falls on the poor in low-and middle-income countries who mainly obtain their animal source foods from informal, traditional markets which may lack high standards of hygiene and food safety.

The analysis of the animal health situation and priority diseases has clearly shown that the animal health situation in Africa in general is at the crossroad. Indeed, Africa presents a number of unique challenges in the field of animal health, which distinguishes the continent from many other regions of the world. Africa is known as home to a diverse range of agro-ecological and production systems, with significant interactions between them that are mediated by several elements: the movements of wildlife and pastoralist cattle; the endemic presence of disease vectors such as ticks, flies, and mosquitoes; the variability in climate that can accentuate conditions favourable for disease spread; and the contrasting market relationships and interactions between smallholder and commercial systems alike. Furthermore, there is a significant heterogeneity in the capacity, resources, and incentives of actors within the different livestock value chains, including producers, traders, market agents, processors, retailers, and support services (including government), to mitigate disease which, given these ecological and market interactions, further complicates effective disease control efforts by the public and private sectors. In addition, declining in public budgets allocated to animal health, and often erratic donor priorities toward specific diseases, muddle the situation even more.

An analysis of the disease reports submitted by African countries to AU-IBAR/ARIS and OIE/WAHIS in the recent five years (2016 to 2020) has clearly indicated the trend of the state of animal health across the continent and regions as shown in table I. A total of 15 diseases have been the most present and recurrent over the past five years in Africa. All of these diseases are endemic in Africa.

Table 1: Most present and recurrent animal diseases in Africa (2016 to 2020)

	Diseases	Number of Affected regions	Total incidences ¹
1	African swine fever	4	153
2	Foot and mouth disease	5	1244
3	Highly path. avian influenza	5	209
4	Peste des petits ruminants	3	155
5	Rift Valley fever	4	47
6	Lumpy skin disease	3	341
7	Highly pathogenic influenza A viruses (infection with) (non-poultry including wild birds)	3	108
8	Anthrax	3	38
9	Bluetongue	3	26
10	Low pathogenic avian influenza (poultry)	2	34
11	Contagious bov. Pleuropneumonia	2	5
12	African horse sickness	2	20
13	Brucellosis (Brucella abortus)	2	6
14	Rabies	5	??/
15	Sheep and goat pox	4	????

It is important to note that, over the same past five years, the recurrence of animal diseases, as well as their incidence rates across the continent vary greatly according to the geographic region.

In conclusion, the transboundary animal diseases surveillance and control/eradication are key functions of national veterinary services. In designing animal diseases surveillance, the national veterinary services are dealing with major constraints including lack of cooperation of the livestock owners, inadequate resources to control the compliance of established regulations, inadequate communication among national stakeholder institutions and control of livestock movements. The transboundary animal diseases are controlled using one of the two ways in which the chain of transmission of the disease agent can be broken: prevent the infected animals to perform their role of donor of pathogen and the immunisation of susceptible hosts or the combination of the two ways. The immunisation of animals is the most affordable method in the majority of countries in Africa.

The national veterinary services should support from the main global and regional initiatives (GF-TAD, EMPRESS, GLEWS, OFFLU, EMC-AH, etc.) and the regional (AU-IBAR, AU-PANVAC) and international organisations (OIE, FAO, IAEA) in their efforts to develop strategies for the control and eradication of transboundary animal diseases.

1.1. Central Africa region/ECCAS

1.1.1. Animal Health policies and frameworks

Animal resource is a very important source of income for most African countries, especially those in Central Africa, and thus contributes to food security and socio-economic development in countries. Unfortunately, this subsector is under great pressure from animal diseases. The latter sometimes have very important social and economic consequences for livestock producers and all actors in the animal sectors.

¹ Total incidence here is determined as the accrued of incidences in the 5 geographic areas over 5 years.

Reducing the impact of socio-economic constraints on populations necessarily requires effective control of these diseases.

According to the Food and Agriculture Organization of the United Nations (FAO), demand for animal products will double by 2050, mainly due to the growing needs of countries.

As a result, animal resources remain a priority to ensure the supply of animal protein, particularly vulnerable groups, and thus a path out of poverty by contributing to the sustainable livelihoods of about 80% of households classified as poor in sub-Saharan Africa. Hence the imperative to take appropriate action and create appropriate framework conditions.

Animal diseases are still a major toll and a serious obstacle to the development of animal resource in most African countries but also a threat to human health, especially with regard to zoonotic diseases. Given the emergence of these diseases, the situation is likely to worsen if appropriate measures are not taken in time.

With forest ecosystems and wetlands rich in wildlife biodiversity (particularly mammalian species) where “Human-Wildlife” interactions are increasing (hunting, logging, conversion to agricultural land, urbanization, etc.), Central Africa is a breeding ground for the emergence of infectious diseases of zoonotic origins. Their appearance and spread are likely to be greatly underestimated, especially in remote areas where human populations, at the forefront of the “Human-Wildlife” interface, have limited access to health care.

With the emergence of important animal diseases such as highly pathogenic avian influenza, Ebola virus disease, monkey pox etc., regular surveillance has become an essential tool for early detection and rapid response to these diseases.

It is becoming increasingly clear that the public veterinary sector alone in Central Africa is not able to carry out this mission alone, and that private veterinarians, veterinary para-professionals (technicians), animal keepers and owners; and many other private actors will be called upon to play an important role in the provision of veterinary services.

In the ECCAS member states (MSs), and particularly in the space covered by Central Africa Economic and Monetary Commission (CEMAC), animal health activities are fully coordinated by Economic Commission for Livestock, Meat and Fisheries Resources (CEBEVIRHA). Following the campaign against avian influenza, the six member countries of this commission were able to draw up national response plans that integrate communication and information exchange. Some countries have also been able to establish animal disease epidemiology-surveillance networks with the participation of multiple stakeholders.

The ECCAS does not have an institutional or organisational framework, a specific animal health policy, or an appropriate coordination mechanism dedicated to the surveillance, control and eradication of animal diseases. The concepts of animal welfare, One Health and AMR are still poorly taken into account, although some initiatives remain to be implemented as part of its programme to transform agriculture, including animal resource in Central Africa and the fight against animal diseases with public health threat.

1.1.2. Priority animal diseases

The ECCAS zone does not have a specific policy or institutional framework for animal health.

However, the Heads of State and Government had decided to create within the institution (decision N°41/CEEAC/XVI/CCEG/15 of 25 May 2015), a regional animal health centre (CRSA) whose mission is to facilitate veterinary governance in terms of the vaccination calendar, the early warning system in order to improve epidemiological surveillance in the sub-region. This centre based in Chad is not operational despite the headquarters agreement for the operationalisation of the centre.

The regional priority diseases listed in this document are among the diseases of high economic and health impact for livestock, but are also of major public health importance. These diseases are regularly listed in the different countries and are sometimes linked to the epidemiological context of the region, the dominant livestock farming system (extensive system and transhumance), the climate of the region and the dynamics of animal movements.

Among these diseases, the most prominent are the followings:

- Highly pathogenic avian influenza (HPAI);
- Foot-and-mouth disease (FMD);
- The Peste des petits ruminants (PPR);
- Contagious Bovine Peripneumonia (CBPP);
- Trypanosomiasis;
- Anthrax
- Black quarter/Pasteurellosis;
- Newcastle disease;
- Helminthiasis;
- Ectoparasitos (ticks, fleas, myases..);
- Rabies;
- Tilapia haemorrhagic syndrome;
- Brood diseases;
- Bovine Tuberculosis (BT);
- Ebola virus disease and haemorrhagic fevers.

These diseases are immediately reported on the OIE WAHIS and AU-IBAR-ARIS notification systems and some are the subject of sub-regional and regional initiatives.

1.2. Eastern African Region

1.2.1. Animal health policies and frameworks

RECs	Policies / Strategies	Thrust of the policy
IGAD	Regional Policy Framework on Animal Health in the context of trade and vulnerability of the member states of IGAD, 10th December 2009	<ol style="list-style-type: none"> 1. Transboundary animal diseases, diseases of production, animal welfare and livestock related emergencies. 2. IGAD representation and participation in international standard setting institutions. 3. Regional and national capacity building & provision of livestock services. 4. Intra-regional trade in livestock and livestock related products, inputs and services. 5. Institutional provisions (arrangements).
	IGAD Regional Animal Welfare Strategy and Action Plan, 2017 - 2021	<p>Contribute to the OIE Mandate of improving animal health and welfare (compliance with OIE animal welfare standards).</p> <ol style="list-style-type: none"> a. Institutional reforms. b. Strengthen legal frameworks. c. Carry out training and capacity development. d. Undertake communication, advocacy and awareness campaigns. e. Coordinate the implementation and form partnerships to enhance synergy.
	IGAD Animal Health Strategy 2017-2022	<p>Strategies for effective animal health service delivery for the prevention and control of diseases and zoonoses in the IGAD region:</p> <ol style="list-style-type: none"> a. Institutional Strengthening b. animal disease surveillance c. information sharing in the region d. Identifying priority interventions and disease control measures e. Emergency preparedness for priority animal diseases. f. Regular and timely coordination between member states.
COMESA	No specific policy on animal health but endorses the Animal Health Strategy for Africa (AHSA) which was formulated by the African Union -Inter-African Bureau for Animal Resources (AU-IBAR), September 20, 2019	The strategy aims at enhancing the effectiveness and efficiency of the livestock sector and to promote investments, coordination of efforts, partnerships and multi-sectoral/multidisciplinary approaches to addressing animal health issues on the continent.
EAC	EAC Livestock Policy Adopted by 34th Council of Ministers on 5th September, 2016	Not specific for animal health but focuses generally on livestock sector
AU-IBAR	Animal Health Strategy for Africa (AHSA) 2019 – 2035. A framework for delivering a sustainable animal health system that meets global standards.	<p>Strategic Objectives and Key Strategies</p> <p>The aim of this strategy is to provide a framework for managing the challenges related to animal health in Africa. These challenges are addressed through the following strategic objectives:</p> <ol style="list-style-type: none"> 1. Strengthen animal health policy and institutional frameworks; 2. Reduce disease risks and impacts on animals, humans and environment; 3. Strengthen animal health interventions to address current and emerging issues of public health concern at the human-animal-environment interfaces 4. Improve capacities, access to inputs, markets and trade in animal resources 5. Strengthen science, innovation, research and knowledge management; 6. Enhance partnerships, investment and resourcing of the animal health sector.

RECs	Policies / Strategies	Thrust of the policy
AU-IBAR	Livestock Development Strategy for Africa (LiDeSA) 2015 – 2035. The Roadmap to a Successful Livestock Sector	<ol style="list-style-type: none"> 1. Public and private investments along the different livestock values chains. 2. Animal health and increase the production, productivity and resilience of livestock production systems. 3. Innovation, generation and utilization of technologies, capacities and entrepreneurship skills of livestock value chain actors 4. Access to markets, services and value addition.

Note: The AU-IBAR policies and strategies mentioned are not limited to the eastern Africa region but covers the entire African continent.

Country specific animal health policies in the member states

Examples of country specific animal health policies:

1. Kenya Veterinary Policy 2020 (Sessional Paper No. 2 of 2020).
2. Animal health strategy and vision for Tanzania, 2016.
<https://core.ac.uk/download/pdf/132690319.pdf>
3. Animal health strategy and vision for Ethiopia, 2013.
https://cgspace.cgiar.org/bitstream/handle/10568/67247/LMP_animalhealth_2013.pdf?sequence=1
4. Uganda One Health Strategic Plan 2018-2022.

Quite a number of countries in the region do not have specific animal health / veterinary policies but animal health policy issues are covered under broad agricultural and livestock policies and legislation.

General animal health situation

The region is endowed with enormous animal resources whose production and productivity largely depend on animal health status. Animal health, which is an integral part of animal welfare, promotes high productivity and production, better use of animal resources, efficient use of natural resources, and is an important safeguard for consumer protection. Animal health in the region is characterised by strengths and weaknesses.

Strengths:

- Existence of animal health service delivery systems (their status notwithstanding) in all member states in the entire region. All the countries have a Chief Veterinary Officer (CVO) who is the permanent OIE Delegate.
- Existence of international and regional organisations and institutions that provide technical guidance, coordination of regional programmes, and facilitation of collaboration amongst the member states and funding among other interventions. Examples of these bodies include Food Agriculture Organisation of the United Nations (FAO), OIE, World Health Organisation (WHO), African Union Pan-African Tsetse and Trypanosomiasis Eradication Campaign (AU-PATTEC), AU-IBAR, African Union Pan African Veterinary Vaccine Centre (AU-PANVAC), Centers for Disease Control and Prevention (CDC), International Centre of Insect Physiology and Ecology (ICIPE), and International Livestock Research Institute (ILRI).

- Existence of RECs i.e. Common Market for Eastern and Southern Africa (COMESA). Intergovernmental Authority on Development (IGAD) and East African Community (EAC) that facilitate harmonisation and cooperation amongst the member states in animal health delivery thus facilitation access to livestock and livestock products markets.
- Stable political environment in most of the member states conducive to animal health service delivery.

Weaknesses:

- Poor implementation of animal health policies & strategies.
- Poor enforcement of laws and regulations.
- Weak animal health service delivery, especially in under resourced remote areas (commonly referred to as arid and semi-arid land - ASAL areas). In these areas animal health service delivery by unqualified persons is a common feature.
- Unconducive political environment in a few countries (conflicts) e.g. Somalia and South Sudan.
- Weak, and to some extent ineffective animal disease surveillance systems – inadequate data collection, weak databases and poor disease reporting.
- Inadequate animal disease diagnostic tools, equipment and facilities especially in the field. In particular diagnostic laboratories are lacking and/or are poorly equipped.
- As a result of inadequate surveillance early disease detection and responses are jeopardized.
- Accredited animal health / veterinary diagnostic laboratories are not within easy reach.
- Participation of the private sector is limited (unfavourable policy and legal environments, lack of private/public partnership framework, and lack of incentives for the private sector to collaborate).
- Weak linkage between private and public animal health service providers in terms of referral system.
- Animal health service delivery strategies have been developed but implementation is generally weak.
- Dependency syndrome where citizens are still relying on government or external projects to provide free services which is not sustainable.

The impact of these constraints includes upsurge of animal diseases, low production and productivity, limited marketing opportunities and limited contribution (unexploited potential) of animal resources to livelihoods and national economies.

1.2.2. Priority animal diseases

Prioritisation of animal diseases in the eastern Africa region varies from one country to another but is to a large extent based on the following criteria:

- Trade sensitive diseases.
- Transboundary nature of the diseases.
- Public health importance.
- Food safety.

The food safety mechanisms are well in place in most countries (certification, meat inspection, milk inspection) thus not high priority criteria. The animal diseases of high priority based on the other three criteria, which are all OIE listed diseases for the year 2021, are indicated in table below:

	Priority Disease	Prioritisation criteria		
		Trade sensitivity	TADs	Public health importance
1.	Peste des petits ruminants (PPR)	<input type="checkbox"/>	<input type="checkbox"/>	
2.	Foot-and-mouth disease (FMD)	<input type="checkbox"/>	<input type="checkbox"/>	
3.	Contagious bovine pleuropneumonia (CBPP)	<input type="checkbox"/>	<input type="checkbox"/>	
4.	Contagious caprine pleuropneumonia (CCPP)	<input type="checkbox"/>	<input type="checkbox"/>	
5.	Highly pathogenic avian influenza (HPAI)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.	African swine fever (ASF)	<input type="checkbox"/>	<input type="checkbox"/>	
7.	Newcastle disease (ND)	<input type="checkbox"/>		
8.	Sheep and Goat Pox (SP, GP)	<input type="checkbox"/>	<input type="checkbox"/>	
9.	Lumpy skin disease (LSD)	<input type="checkbox"/>	<input type="checkbox"/>	
10.	Brucellosis	<input type="checkbox"/>		<input type="checkbox"/>
11.	Rift Valley Fever (RVF)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12.	Trypanosomiasis		<input type="checkbox"/>	<input type="checkbox"/>
13.	Rabies		<input type="checkbox"/>	
14.	Rinderpest*	<input type="checkbox"/>	<input type="checkbox"/>	
15.	Tick borne diseases e.g. East Coast fever (ECF), Babesiosis, Anaplasmosis and heartwater.	<input type="checkbox"/>		
16.	Anthrax		<input type="checkbox"/>	
17.	Camel pox	<input type="checkbox"/>	<input type="checkbox"/>	
18.	Middle East Respiratory Syndrome Corona Virus (MERS - CoV)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Rinderpest was eradicated globally in 2011 but the fear of its re-emergence gives it a priority.

The OIE listed diseases are notifiable terrestrial and aquatic animal diseases which are trade sensitive.

Despite the above challenges or weaknesses, the existence of enormous animal resources and potential presents opportunities for investment in animal health.

1.3. Northern African Region

Animal health is a constant concern for the agriculture sector in general and for animal resources in particular in the Mediterranean region. The economic and social repercussions are as important in the countries affected as those threatened by animal diseases such as avian influenza, zoonoses and other transboundary animal diseases (TADs). These impacts are all the more important as the livestock sector is a sector of great national and international importance for the countries of the North African region, hence the importance of combating TADs.

Livestock plays an important role in food security and nutrition in the North African region by contributing to employment and rural livelihoods and by ensuring access to animal-based foods.

From 1993 to 2013, the livestock population in the region increased by 25 percent, from 77 million to 96 million, compared to a 16 percent increase globally. The various production patterns adopted in the region (pastoral, agropastoral, mixed extensive and landless) are rapidly evolving (with a shift from traditional livestock systems to commercial production) in response to the growing demand for animal-based foods. The remarkable contribution of livestock to the gross value of agricultural production, which ranges from 24 to 45 percent depending on the country, reflects the importance of the sector in many countries. In

the region, smallholder farmers predominate in both agricultural production and livestock production, and most of the rural poor keep animals: 60 percent of smallholders in Egypt, 70 percent in Tunisia, and the majority of the rural population in Mauritania and Sudan. Morocco, Algeria and Tunisia (Maghreb) form a homogenous entity, in which livestock production plays a role and makes a major contribution to agricultural GDP. More than 43 million sheep and 5 million cattle are raised in this region, which also has a modern and extensive poultry industry with an estimated turnover of €1.5 billion and an annual production of almost 600 million broiler chicks.

Despite its crucial role in Africa's economy and livelihood services, the livestock sector has remained underdeveloped due to a number of constraints, the main one being the huge burden of animal diseases. In order to mitigate this problem, national veterinary services in Africa must play a leading role in the prevention and control of emerging and re-emerging diseases. Their role should even go beyond improving animal production by reducing losses caused by animal diseases. They should also aim to safeguard public health by controlling animal diseases that are transmissible to humans and protecting consumers from food-related health risks, and by improving market access.

1.3.1. Animal health policies and frameworks

The different countries of the region have each developed their national health policy based on the accumulated experience over the years in the fight against animal diseases and also on an assessment of the risks of introducing or re-emergence of animal pathological entities. Global and regional organizations and development partners have made significant contributions through various national and regional projects to the evaluation and consolidation of animal health policies.

Policies adopted by countries in the region focus on the following objectives: reducing disease risks and impacts on animals, humans and the environment; strengthening animal health interventions; and building close links with research and innovation and strengthening partnerships with the private sector through a PPP.

Animal health service delivery systems in North Africa are generally weak despite some differences between countries, and the majority of veterinary services assessed under the WPV have medium or low capacity in essential skills. This also results in losses in animal production, the inability to meet market standards for animals and animal products, particularly with the European Union, given its proximity and a high burden of health risks associated with interactions between humans, animals and the environment.

The results of the evaluations conducted under the OIE PVS programme led to the conclusion that this situation is the result of a series of factors, which vary by country and represented by insufficient resources in animal health service delivery systems, poor advocacy, weak veterinary governance, inadequate coordination and cross-border collaboration among key stakeholders.

Despite these multiple constraints, public veterinary authorities in the countries of the region have implemented animal health policies based on two key interventions: vaccination campaigns against animal diseases associated with epidemiological surveillance.

One of the most visible actions of the control system is the implementation of free vaccination campaigns against priority diseases in the country. Vaccination campaigns are conducted either directly by the public authority or through free practice veterinarians as part of the health mandate to compensate for the growing shortage of veterinary and para-veterinary personnel (PPVs).

National vaccination campaigns mainly concern cattle and secondary to small ruminants to immunize them against priority diseases such as foot-and-mouth disease and sheep and goats pox (SGP). Depending on the country, other diseases are targeted such as brucellosis, PPR, rabies or Bluetongue.

Changes in the way livestock are conducted and in the animal environment, which are increasingly intensive and therefore increasingly sensitive, have led to an increasing demand for health supervision of livestock and individual veterinary care by livestock producers and livestock professionals, which existing public sector structures can no longer meet.

The sanitary mandate is a special authorization granted to private veterinarians to practice legally contagious animal diseases in the particular field. This mandate also gives private veterinarians, who are equipped with them, the opportunity to carry out, on behalf of the State, in previously demarcated areas, the prophylaxis programmes of legally contagious animal diseases for a fee paid to them by the State, set in agreement with trade unions and OSVs.

In countries where the health mandate is in place, its objectives are:

- Encourage the installation of veterinarians in the private sector;
- To provide farmers with close health care supervision;
- To contribute to the effective fight against contagious animal diseases (especially those of an epizootic nature);
- To ensure closer monitoring of the health status of the herd.

The second pillar of veterinary services' interventions is represented by the epidemiological surveillance of animal diseases which aims either to maintain vigilance with regard to pathological entities for which the country is free (avian influenza, equine plague, bovine spongiform encephalopathy, etc.), or to monitor the evolution of the epidemiological situation of diseases present in the country (bluetongue, clavel, tuberculosis, tuberculosis, brucellosis, etc.).

Epidemiology surveillance is an important component of the fight against these epizootic diseases, whether for early warning of an eradicated or never-introduced disease (epidemiology) or for monitoring and guiding an ongoing control plan.

The countries of the UMA have set up in their own country, a National Network of Epidemiology surveillance of animal diseases, this surveillance is carried out at the border posts, points of concentration of animals (cattle farms, cattle markets, gathering points, water points,...) and at the level of slaughterhouses. Epidemiological data collected in the field are used to develop maps of the geographic distribution of reported diseases and key epidemiological indicators for them to establish appropriate control strategies.

In parallel, sero-epidemiological surveys are regularly carried out to monitor the incidences of animal diseases present in the national territory, to evaluate control programmes and to detect early the appearance of any exotic or new diseases.

In fact, a country's isolated effort to monitor and then eradicate a priority disease can therefore be quickly ruined if a comprehensive and coherent approach has not been implemented by all countries in the region. A regional approach to epidemiological surveillance is therefore essential to coordinate countries' objectives and activities, exchange health information and activity outcomes in order to effectively combat animal diseases. It is in this spirit that the first regionalization actions in animal health developed in the 1990s, such as the RADISCON/FAO project, a regional network for surveillance and control of animal diseases, which comprises four sub-regions and which, for the Maghreb sub-region, coordinates, among other things, national surveillance efforts for the eradication of clavae.

In the same vein, the North African states have created, in collaboration with the countries of Southern Europe, the Mediterranean Animal Health Network (REMESA) which includes four sub-networks created to harmonize, energize and facilitate the operation and activities of REMESA: the Animal Health Laboratories Network (RELABSA); the Veterinary Epidemiology-Surveillance Network (REPIVET), the Animal Health Communication Network (RECOMSA) and the Network of Socio-Economy and Production Systems for Animal Health (RESEPSA).

- ***Animal health status in Northern Region***

Major epizootic diseases are characterized by significant diffusion power beyond the national borders of the affected countries. Maghreb countries are regularly confronted with this type of situation, and recent examples of foot-and-mouth disease or catarrhal sheep fever are unfortunately there to remind you. This ability of diseases to cross borders is due to several factors, including traditional animal movements linked to pastoralism, trade and the agro-ecological unit that allows the spread of disease vectors (insects transmitting catarrhal sheep fever, for example).

The region has a major advantage in coordinating and harmonizing animal disease control programmes represented by REMESA. In 2009, the heads of veterinary services from 10 countries in the western Mediterranean region (Algeria, Egypt, Spain, France, Italy, Libya, Morocco, Mauritania, Portugal and Tunisia) created a common framework for work and cooperation, with the capacity to supervise and facilitate the development and implementation of animal health projects and regional programmes: the MEsiterEdranen Animal Health Network (REMESA). In 2013, the heads of veterinary services from Malta, Cyprus and Greece joined the network. Jordan and Lebanon joined the network in 2014.

The heads of veterinary services in THE REMASA countries meet regularly every 6 months to discuss and deliberate on the health situation in their country.

RemESA deliberations have identified diseases of priority interest in the countries of Northern Africa, which are: rabies, small ruminant plague (PPR), brucellosis, sheep catarrhal fever (FCO), claval, tuberculosis, foot-and-mouth disease, avian influenza (AI), leishmaniasis, Rift Valley fever and equine plague.

- **Key challenges**

Animal health in the countries of northern Africa faces countless challenges, including the extent of the territory of the countries of the region with a large part of the desert difficult to control, a tense geopolitical situation, insecurity with as a corollary a porous border that makes cross-border movements of livestock difficult to control especially since there is no system for identifying small ruminants. These informal animal movements pose a threat to the health of the local herd. Indeed, the geographical location predisposes the region to the risks of introducing many cross-border animal diseases linked to illegal livestock movements between the different Maghreb countries and sub-Saharan areas. These movements relate to the illegal trade in live animals, transhumance and insecurity caused by hotbeds of tension in the region, which sometimes result in massive displacement of livestock and animals.

1.3.2. Priority animal diseases

North African countries have been affected by political transitions for a decade. For the most part, they have experienced revolutions with regime change. The region is undergoing an evolutionary democratic transition, at the same time the economic situation is considered critical with social and political movements. State budgets are mainly geared towards social sectors.

At the regional level, the region has been suffering the consequences of geopolitical changes since 2011. Among the repercussions, the health and economic impact of cross-border pathologies not only on national livestock but also on the entire Mediterranean region. The pathologies that threaten the food security of the population in the region.

Health risks are derived from cross-border movements of people and goods including animals. Borders with neighbouring countries are only virtual and movements across these borders are almost continuous, as human populations on both sides are virtually the same and are linked by historical relationships.

Zoo-health threats are becoming increasingly serious in the region for multiple reasons, namely: (i) massive and uncontrolled movements of animals, (ii) operational capabilities available for surveillance and health control are weakened (iii) veterinary intervention in rapid response is affected (iv) significant decrease in human and material resources for veterinary services (v) climate change perceived in recent years has disrupted behaviour pathologies on breeding.

In addition to these elements, remarkable flows of uncontrolled movements of domestic animals have been observed in recent years.

The occurrence of threatening pathologies such as foot-and-mouth disease (FMD), rift valley fever (FVR), lumpy skin disease (LSD) and others can occur at any time. Increased notifications of pathologies to the OIE prove the threats and risk of introducing these pathologies to the national territory. In the South and the sub-Saharan region, the risk of pathogens being introduced is alarmingly increased. Pressures on demand for cheap animal protein have only increased the flow of animals from sub-Saharan regions, yet the authorities' efforts to reduce and prevent these illegal movements.

Thus several animal diseases therefore some of which have a zoonotic character are rampant in the region, some of which are endemic. The health situation in the region for major animal diseases as published on the OIE information system is as follows:

Foot-and-mouth disease infection is one of the priority diseases identified in the Regional Strategy for Priority Cross-Border Animal Diseases 2021-2025. Foot-and-mouth disease is endemic in Africa. It is one of the most contagious livestock diseases, with significant economic implications. The Global Strategy to Combat Foot-and-Mouth Disease, approved in 2012, was jointly developed by the OIE and the Food and Agriculture Organization of the United Nations (FAO), in line with the Global Framework Plan for Progressive Control of Cross-Border Animal Diseases (GF-TADs). Currently, nearly 80 countries around the world, including 49 countries in Africa, are implementing this approach with a view to reducing or eliminating the circulation of the virus by 2027.

1.4. Southern African Region

1.4.1. Animal health policies and frameworks

Animal health policies and frameworks at the Southern African Development Community (SADC) and country levels are influenced and guided by global and continental animal health policies although there could be some slight differences at country level. Responses from National Directors of Animal health in SADC countries participating in this survey indicated that levels of close collaboration with global actors/stakeholders in standard setting and policy development, harmonization and standardization of animal health surveillance strategies and interventions were as follows: FAO -13%, OIE – 20%, AU-BIRA – 16%, WHO – 11% and the Private Sector – 8%. This therefore shows that international organizations and development partners play a crucial role in animal health policy development, harmonization, standardisation and implementation.

Regional (SADC) animal health policies are expected to be derived from continental policies like the Animal Health Strategy for Africa (AHSA) which in-turn is influenced by the global Organization for Animal Health (OIE).

Some of the major animal health policies and their areas of intervention in selected SADC countries are listed in Table 2 below:

Table 2: Some major animal health policies and interventions in selected SADC countries

Country	Major Policy Documents	Intervention Area
Botswana	1. Botswana Meat Commission Act, Law 22 of 1965 [as amended]	Regulates the Botswana meat industry, especially the beef value chain from production, value addition to marketing in local, regional and international markets
	2. Veterinary Surgeons Act 35 of 1971 [as amended]	Regulates veterinary practices to ensure compliance to ethics and animal welfare guidelines.
	3. Wildlife Conservation and National Parks Act 28 of 1992 [as amended]	An enforcement tool for wildlife conservation and sustainable use of wildlife resources and tourism
	4. Diseases of Animals Act 9 of 1977 [as amended]	Legislation for disease surveillance, prevention and control. Enforces animal health standards on live animals and their products for local, regional and international trade in animals and animal products
	5. Cattle Export and Slaughter Levy Act 10 of 2005	A levy on cattle exporters, cattle slaughter houses and meat processors for government export facilitation
Namibia	1. Animal Diseases and Parasites Amendment Act No 10 of 2005	Instrument for Disease surveillance and control
	2. Animal Diseases and Parasites Act: Animal Identification Regulations Government Notice No 29 of 2009	Instrument for Disease surveillance and control
	3. Meat Industry Act No. 12 of 1981 as amended	Regulates the Namibian meat industry, especially the beef value chain from production, value addition to marketing in local, regional and international markets
	4. Policy for the eradication of transboundary animal diseases in the Northern Communal Areas of Namibia. 2010.	Instrument for Disease surveillance and control focusing on CBPP control in the Northern Communal Areas
Zimbabwe	1. Agricultural Products Marketing (Livestock) (Carcass Classification and Grading) Regulations, Statutory Instrument 182. 2000 3.	Regulates the Zimbabwean meat industry, especially the beef value chain from production, value addition to marketing in local, regional and international markets
	2. Animal Health Act No 5 of 1960 [as amended]	Legislation for disease surveillance, prevention and control. Enforces animal health standards on live animals and their products for local, regional and international trade in animals and animal products
	3. Dairy Act 28. 1937 [as amended]	Regulates the Zimbabwean dairy industry, especially the dairy value chain from production, value addition to marketing in local, regional and international markets
	4. Public Health (Abattoir, Animal and Bird Slaughter and Meat Hygiene) Regulations 1995	Regulates the Zimbabwean meat industry, enforces inspection and certification of animal products for food safety and facilitation of national, regional and international trade in animals and animal products.
	5. Veterinary Surgeons Act 36 of 1973	Regulates national veterinary practices ensuring compliance to veterinary ethics and animal welfare issues

Southern African countries selected to participate in this animal health actors mapping survey are members of the World Organisation for Animal Health (OIE), UA-IBAR and the Southern African Development Community (SADC) regional grouping. These include Botswana, Lesotho, Namibia, South Africa, Eswatini/ Swaziland and Zimbabwe. Veterinary services at both SADC and country levels work closely with global standard setting bodies and international players/stakeholders in animal health to ensure standardization and harmonization of animal health policies and interventions with international standards.

1.4.2. Priority animal diseases

As members of the OIE, the 5 countries derive their animal health standards from this world standard setting body. In addition to the OIE, these SADC countries also comply and are guided by CODEX Alimentarius and Sanitary and Phytosanitary (SPS) standards in order access regional and international markets for their animals and animal products. In order to effectively control diseases of economic (Transboundary animal diseases–TADs) and zoonotic importance so as to participate in regional and international trade, the SADC Livestock Technical Committee (LTC) identified and prioritized regional transboundary diseases of economic importance and zoonoses through the SADC TADS project (2005 -2010).

The SADC TADS project through its Pretoria I and Pretoria II consultative workshops, prioritized diseases listed in table 3 as the major diseases of zoonotic and economic importance in the SADC region (ARC-OVI Annual Report, 2014) These regional priority diseases automatically become priorities of SADC member states although they may have a few more priorities at country level. Strategic and contingency plans for some of the SADC priority diseases have already been developed, harmonized and standardized through AU-IBAR Veterinary Governance project funding (2013 – 2017). These plans are currently being implemented at both regional and country levels.

Table 3: Disease prioritization in the SADC Region using the ARC-OVI Tool (July 2014)

Diseases	Impact on national & food security	Impact on animal health	Impact on animal production	Impact on public health (zoonotic)	Impact on national & regional trade
African swine fever	1	1	0.5	0	1
African horse sickness	0	1	1	0	1
Foot-and-mouth disease	1	2	1	0	1.5
New castle disease	3	2.5	2	0	1.5
Salmonella	0.5	1	1	2	1.5
EIA	0	0.5	1.5	0	1
Tsetse and trypanosome	1	1	2	0.5	0
Anthrax	1.5	2	1.5	2.5	0.5
Avian influenza	0.5	0.2	0.1	0	1.5
American Foul Brood: Bee diseases	0.25	0.25	1	0	0.5
Contagious bovine pleuropneumonia	0	0	0	0	1.5
Rift Valley fever	1.5	1	2	1	1
Tick borne diseases: Theileria parva	1	2	1	0	0.5
Rabies	0.5	2	0.5	2.5	1
Johne's diseases	0.2	0.5	0.5	0.1	0
Brucellosis	2	2	2	1.5	1

In summary, the region's state veterinary services name the highest priority epidemic diseases in southern Africa as foot and mouth disease followed by contagious bovine pleuropneumonia in cattle, peste des petits ruminants in goats and sheep, Newcastle disease in chickens and lumpy skin disease in cattle.

The endemic diseases, which though less dramatic may have even greater negative impacts than epidemic diseases, that are important in southern Africa are clostridial diseases, ticks and tick-borne diseases, helminth infections and African animal trypanosomiasis (known as sleeping sickness when it occurs in people).

The highest priority zoonotic diseases—those shared by animals and people—in southern Africa are rabies, brucellosis and anthrax. Other zoonoses are emerging and while human infection is still currently rare, as these pathogens evolve they may become better adapted to humans.

Highest-priority emerging infectious diseases are highly pathogenic avian influenza and Rift Valley fever. Animal-source foods (milk, meat, offal, eggs), along with zoonoses, are an important source of food-borne diseases in the region. Unknown by most, the human health impact of food-borne disease is huge—comparable to that of HIV/AIDS, malaria or tuberculosis. The economic costs for low- and middle-income countries are at least USD 115 billion a year. And food-borne diseases are likely to worsen in southern Africa over the next decades.

The highest priority wildlife diseases in southern Africa are foot and mouth and anthrax, which are also diseases of livestock; the highest priority aquatic disease is epizootic ulcerative syndrome. Lastly, most of the priority animal diseases in Southern Africa are 'climate-sensitive'.

1.5. Western Africa Region

Animal health service delivery systems in Africa are generally weak, and the majority of African veterinary services, when assessed against global veterinary service performance standards, reported average or low capacity in core competencies. The strategy of the African Union Inter-African Bureau for Animal Resources (AU-IBAR) calls on African Union Institutions, Member States of Regional Economic Communities (RECs) and partners to adopt an integrated and holistic approach to improving animal health systems in Africa, in view of the impact of animal diseases on the competitiveness of animal resource value chains, the increasing risk of outbreaks and re-emergence of zoonotic diseases, climate change, inadequate environmental management and conflict and civil unrest.

1.5.1. Animal health policies and frameworks

The Economic Community for West African States (ECOWAS) region has developed and adopted the strategy for animal health and welfare 2021-2025 to combat these challenges to assure food and nutrition security, improve livelihoods, public health and help achieve some sustainable development Goals (SDGs) for her populations. The strategy aims to provide a framework for cost benefit analysis that will support cost sharing for achieving sustainable animal health and welfare initiative in region.

In addition a regional mechanism for the prevention and control of transboundary animal disease (TADs) in West Africa was also developed and validated in September 2020. The Regional Coordination Mechanism for the Prevention and Control of Transboundary Animal Diseases and Zoonoses consists of a Ministerial Committee and a Technical Secretariat.

The regional has also adopted a regional strategy for the control and elimination of dog-mediated rabies.

The Regional Animal Health Centre for West Africa: The ECOWAS Heads of States and Government declared the Regional Animal Health Center (RAHC) the ECOWAS Specialized Center on animal health through the Supplementary Act A/SA.20/02/12. Prior to this declaration, the Center was a collaborating Center between the African Union Interafrican Bureau for Animal Resources (AU-IBAR), Food and Agriculture Organization Emergency Centre for Transboundary Animal Diseases (FAO-ECTAD) and World Organization for Animal Health (OIE) at the onset of the Highly Pathogenic Avian Influenza (HPAI) in Africa. The RAHC was in operation with a limited number of initiatives, until the ECOWAS Commission fully operationalized the Center in 2018.

The RAHC has the mandate to coordinate actions that contribute to food security and nutrition, and improved livelihoods by improving animal health and welfare, and developing animal resources by ensuring the formulation of relevant text for the coordination of actions on the prevention and control of TADs and zoonoses. To achieve the animal health and welfare mandate, the RAHC works by coordinating actions in ECOWAS Member States that are the main stakeholders, and by building relevant partnerships and mobilizing resources for effective delivery of its mandate. The regional Animal Health Networks including the epidemiological surveillance (RESEPI), the veterinary laboratories (RESOLAB) and the Regional Veterinary Committee (RVC), as well as other regional organizations including West Africa Health Organization (WAHO), Union Economique et Monetaire Ouest Africaine (UEMOA), Interstate Committee for Drought Control in the Sahel (CILSS) and others are strategic stakeholders. Technical and development partners such as the Africa Union Interafrican Bureau of Animal Resources (AU-IBAR), Food and Agriculture Organization of the United Nations (FAO), World Organization for Animal Health (OIE), European Union (EU), World Bank (WB), Swiss Agency for Development and Cooperation (SDC) and others remain relevant partners.

1.5.2. Priority animal diseases

The ECOWAS region is beset with high prevalence of endemic animal diseases including Peste des Petits Ruminants (PPR), Contagious Bovine Pleuro-Pneumonia (CBPP), Foot and Mouth Disease (FMD), Anthrax, rabies, Highly Pathogenic Avian Influenza (HPAI), and others that are transboundary in nature. The traditional pastoral production system necessitates movement of animals across borders with potential for disease transmission even in territories that are hitherto free of certain diseases. These diseases impact public health, trade, livelihoods and socio-economic circumstances of individuals, communities and nations. Assessment of veterinary services in ECOWAS Member States (MSs) have consistently highlighted gaps in regulatory policies, budgetary allocation, inadequate human resources and infrastructural gaps for animal disease prevention and control, as well as response to other animal health emergencies.

The absence of a dedicated Ministry for livestock and the frequent policy changes are other challenges in the sector. These have resulted in poor funding and the stunting of livestock programs. It is pertinent to note that livestock programs and research have long gestation periods.

The prevailing insecurity in the region has also created a special challenge for both livestock production and disease control. Unfortunately, this challenge is viewed strictly as a security challenge requiring military solution instead of a developmental problem that is associated with neglect and policy failures.

To attain the goal of food and nutrition security, the region requires an animal health and welfare system that can:

- Address management risks of farmed animals
- Contain the consequences of animal disease outbreaks and
- Alter undesirable cultural practices.

This requires regular funding and sustained investments in the veterinary services to enable it attain international quality standards in disease prevention, detection, early warning and response and reporting. Through collaboration and building of sustainable partnerships, such Veterinary Services (VSs) would utilize regional approaches in handling issues relating to public health, One Health (OH), anti-microbial resistance (AMR), emerging and re-emerging diseases. This will serve to restore public confidence in the efficiency of delivery of veterinary services in MSs.

In Western Africa, the most present and recurrent diseases (reported at least two years of the past five years) are presented in the Table 3, with their total incidences. With a total of 7 most present and recurrent diseases in the past five years, the Western Africa appears to be the second region with a higher number of reported diseases.

Table 4: Most present and recurrent animal diseases in Western Africa (2016 to 2020)

	Diseases	Recurrence over 5 years	Total incidences ²
1	African swine fever	4	41
2	Highly path. avian influenza	4	23
3	Rift Valley fever	3	18
4	Anthrax	3	7
5	Foot and mouth disease	2	278
6	Rabbit haemorrhagic disease	2	95
7	Contagious bov. Pleuropneumonia	2	2
8	Lumpy skin disease (LSD)	5	90
9	PPR	5	200
10	Rabies	5	195

In summary, in Western Africa, the priority animal diseases comprised the followings: CBPP, Blackquarter, FMD, Anthrax, lumpy skin disease, tuberculosis, babesiosis, trypanosomiasis, Hemorrhagic septicaemia, RVF, Brucellosis, PPR, Rift Valley fever, Sheep and Goat pox, Equine Influenza, African horse sickness, Newcastle disease, Highly path. Avian influenza, Fowlpox, Marek's Disease, Infectious bursal disease, African swine fever, Rabies, Rabbit viral hemorrhagic disease and recently equine influenza.

² Total incidence here is determined as the accrued of incidences in the 5 geographic areas over 5 years.

2. CHARACTERIZATION OF PUBLIC AND PARAPUBLIC STRUCTURES IN THE ANIMAL HEALTH SYSTEM OF COUNTRIES

2.1. Central African region

2.1.1. Structures in charge of policies, regulation and communication

In all the Central Africa countries the structures in charge of animal resource development policies, strategies, legislation, programs and projects including animal health systems exclusively depend on public service mainly the Ministry in charge of animal resources and its centralized and decentralized services. Efforts are being made to involve private sectors and external actors such as NGOs and international actors in the process of decision making in the domain of animal resource development.

2.1.2. Focus in countries

i) **IN ANGOLA**

» **Institutional framework**

The Ministry of Agriculture and Rural Development (MINADER) is responsible for the development and regulation of agricultural sector activities, including crops, livestock, forestry and irrigation. MINADER's primary mission is to develop sound agricultural policies, plan, monitor and evaluate in the context of overall national development.

Livestock farming in Angola is mainly extensive and agropastoral. It contrasts with some large modern farms in search of performance. In short, Angola has animal health, food and genetic improvement needs to develop its livestock sector.

» **Control structure**

Food security and animal health in Angola is one of the major challenges for the country. Initiatives such as the "Strengthening Livestock Support Services in Angola" (SANGA) project, led by FAO and co-funded by the European Union (EU) and the Angolan Institute for Veterinary Services, are working to address the shortcomings of the livestock service delivery system through action on animal production and health.

As part of this project, a network of veterinary services will be set up to increase livestock productivity and the resilience of pastoralist communities through an animal health services system based on a public-private partnership between the Institute of Veterinary Services (public) and animal health workers (private). This project represents the first attempt at implementation.

In Angola, animal health workers (Tratadores de Gado in Portuguese) tend livestock at the municipal level and have developed a network with producers. They perform their duties under the supervision of veterinary technicians who are public officials reporting to districts.

This veterinary services system is based on the professional and commercial skills of producers. Auxiliary workers may carry out their own veterinary activities, including providing advice to producers on the treatment to be administered and selling veterinary products.

The export of meat and other products from cattle necessarily involves the control of the main diseases that still affect herds in the region, the most important of which are bovine contagious peripneumonia (PPCB), hematic and symptomatic coals, as well as nodular dermatitis.

Veterinarians are gathered in the Order of Veterinary Physicians of Angola (OMVA) whose objectives are to improve outreach services to the population, serve as a legal framework for the practice of the profession, but also achieve excellence and professional ethics in the promotion of veterinary medicine in Angola.

ii) IN BURUNDI

» Institutional framework

Burundi is a net importer of animals and animal products, with very low consumption of animal protein (the protein intake of human food is based on legumes). The country has no possible export vocation in the medium term. Burundi is gradually moving towards the intensification of animal production. This requires stricter control of its health status; including import controls.

As an importing country, the strategy is to gradually develop the control of the risks associated with importation through the gradual and effective implementation of import procedures (authorizations, health certificates, crossing points, destination controls) and traceability of animals and products.

In the current context of available information, the national herd appears to be under little experience with major epizootic waves, with the exception of the PPP. A limited number of outbreaks (a few units) of foot-and-mouth disease (FA) and anthrax are reported sporadically. On the other hand, many endemic diseases are present and limit animal production and their intensification, without it being possible to claim to eradicate them. These diseases are subject to erratic vaccinations or preventive treatments that would be desirable to organize systematically, while maintaining their paid and voluntary nature. As a result, it is proposed that the following programs be established:

- passive surveillance of PPCB at the level of all controlled cullings (to avoid a gradual resurgence), as well as tuberculosis and cysticercosis;
- active monitoring with scientific sampling of the Fièvre de the Rift Valley;
- early detection and rapid response for FA, anthrax, HPI, PPCB and PPA;
- voluntary and paid joint vaccination programs for symptomatic anthrax, bovine nodular dermatosis, Newcastle disease (with injectable inactivated vaccines available in the commercial pharmaceutical sector as well as internal and external deworming (tick control).

iii) IN CAMEROON

» The institutional framework:

The Ministry of Livestock, Fisheries and Animal Industries (MINEPIA) is the main institution of this subsector.

Following Decree No. 2005/152 of 04 May 2005 organising the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA), the ministry's mission is to "develop, implement and evaluate the Government's policy on livestock, fisheries and the harmonious development of animal industries." It is therefore loaded:

- The application of all measures aimed at the conservation, development and exploitation of domestic animals and their products;
- the safety of animal foodstuffs;
- training and technical supervision in livestock farming;
- training fishermen, protecting maritime and river resources, improving production, health control and statistics on marine, river and fish fisheries;
- studies and research for the renewal of fisheries and fish resources, in conjunction with the Ministry of Scientific Research.

Cameroon has benefited on several occasions from external assistance to combat outbreaks.

This assistance has been provided in most cases through regional programmes run by several countries. These include:

- Joint 15 Programme (PC15) for coordinated control of bovine plague (vaccination and immunization of livestock);
- the program called PARC (Panafrican Rinderpest Control) or The Bovine Plague Control Programme was set up to monitor the new progression of the epidemic with its eradication (aimed at extinguishing the last outbreaks of the disease);
- of the Pan-African Epidemic Control Program (PACE), which has recently resulted in the total eradication of bovine plague in Cameroon and Africa.

All three programmes were funded by multilateral donors with the European Union as their leader.

In order to develop intensive beef production, Cameroon launched the "Meat Plans I" and "Meat Plans II" projects in the 1970s with funding from the European Union. Cameroon has benefited from a Special Mission of Eradication of Glossines (MSEG) to clean up grazing areas infested with tsetse fly, vector of trypanosomose.

FAO has supported the Government of Cameroon in implementing the project to strengthen the capacity to diagnose and control the African Swine Plague. This project has helped to establish the map illustrating the distribution of African swine fever in the territory by strengthening the diagnostic capacity of the Mvog Betsi laboratory in Yaounde, improving the technical capacity of veterinary services on this disease and also strengthening the capacity of the National Veterinary Laboratory (LANAVET) in the production of thermostable vaccines against Newcastle disease and plague of small ruminants.

Finally, the AU/BIRA-coordinated project to strengthen the governance of veterinary services in Africa has improved the institutional environment at the national and regional level to provide effective and efficient animal health services.

Control and monitoring structures

» **Control and surveillance of animal diseases**

Animal diseases are one of the main obstacles to the development of animal production. They account for 30% of livestock losses.

The diseases commonly encountered are: bovine contagious peripneumonia (PPCB), foot-and-mouth disease (FA), small ruminant plague (PPR), Newcastle disease (MNC), African Swine Plague (PPA), telluric diseases (bacterial and symptomatic coals), pasteurellosis, tuberculosis, Strongyloides, Coccidiosis, Cysticercosis, larval Echinococcosis. These diseases include Doves and diseases caused by Protozoans (Piroplasmosis, Anaplasmosis, Babesiosis, Trichomonosis, Trypanosomosis) and rabies, thus completing the epidemiological picture.

MINEPIA's Directorate of Veterinary Services (DSV) organizes annual vaccination campaigns against some of these diseases.

In 2014, the Ministry of Livestock, Fisheries and Animal Industries (MINEPIA) created Cameroon's Animal Disease Epidemiology Surveillance Network (RESCAM). The mandate of this entity is to provide "good quality, reliable and comprehensive information, reaching users in a timely manner that provides real utility" through "data collection and production of zoo health information"

Cameroon's animal disease surveillance network participates in passive and active surveillance of pathological events. It has contributed significantly to the effective control of avian influenza that has plagued Cameroon from May 2016 to March 2017.

The passive epidemiological surveillance system remains weak despite the creation within the veterinary services of the Epidemiology Surveillance Network (RESCAM), due to: (i) lack of means of travel, (ii) the low participation of agents (who are not sufficiently paid for this activity) and, (iii) a general need for capacity building. Health inspection posts (in charge of effective health control and vaccination of herds in cross-border transhumance) and the glossine control campaign (MSEG) are not adequately equipped.

» **Product supplier**

Breeders have access to veterinary medicines, usually imported, and vaccines, some of which are produced at the National Veterinary Laboratory (LANAVET). Counterfeiting of veterinary medicines is common limiting the effectiveness of animal disease control actions.

» **Research and training**

The LANAVET laboratory is now the only veterinary laboratory in the country with sufficient capacity to diagnose animal diseases; it takes part in epidemiological investigations and collects samples from farms for analysis.

The National Veterinary Laboratory (LANAVET) was reorganized by Decree No. 90/1460 of 08 November 1990. It is a publicly-capitalised company whose missions are:

- production and supply of biological products (vaccines, serums and others), chemotherapy, health and hygiene for veterinary and human use;
- epizootiological study and surveillance of communicable or non-communicable animal diseases in Cameroon;
- analysis of animal samples, pathological or not, from all points of the country or abroad, with a view to making a diagnosis and to participate, if possible, in the taking of adequate therapeutic and prophylactic measures;
- Training and retraining of livestock managers and technicians;
- technical and scientific cooperation with national or international organizations dealing with human or animal health problems, with a view to creating and developing laboratory services for clinical purposes.

» **Non-state actors**

The private sector is part of veterinary services under Law 90/033 of 10 August 1990 relating to the exercise and organisation of the veterinary profession.

In Cameroon, there is a National Veterinary Order of Cameroon (ONVC); it is instituted by Article I of Act 78/21 of 29 December 1978. The Order's activities revolve around animal health, the sale of veterinary medicines and advice to breeders. No private veterinarian has a health mandate. The legislation prescribes the conditions for granting and exercising the Health Mandate applicable to the fight against outbreaks and the inspection of Food foods of animal and fish origin but is not operational due to lack of application text.

» **Other non-state actors:**

- often organized smallholders, private actors and the entire population living in rural areas. In addition, consumers represented by advocacy associations, training schools and universities.
- The national umbrellas of producers who are key players in the subsector: they are called upon to support the state in the search for funding, the development, implementation and participatory monitoring of projects and programmes for the people at the base.

iv) IN THE REPUBLIC OF CENTRAL AFRICAN REPUBLIC

» **Institutional framework**

The Ministry of Rural Development has a General Directorate of Livestock and Animal Industries, in which there is a Directorate of Animal Health; the peculiarity lies in the fact that the breeders administer "breeding communes" and are organized into a National Association of Central African Breeders (ANEC), to which are delegated some of the usual prerogatives of veterinary services (purchase and distribution of products and medicines).

The country has a national livestock development policy, many codes including hygiene, water and the environment. Numerous texts governing the detention, distribution and sale of medicines in animal and human health. Despite all these commitments, the country does not currently have a National Action Plan to combat RAM. There is also a lack of a multi-sector coordination structure.

Veterinary Services in Central Africa (RCA) is managed by the National Agency for Livestock Development (ANDE), established in 1989 which is a structure for implementing the Government's livestock policy. It is attached to the cabinet of the Ministry of Rural Development and Agriculture (Delegate Ministry for Livestock and Animal Health).

The ANDE, which enjoys a certain autonomy of operation, is responsible for carrying out the long-term technical and administrative functions relating to livestock.

» **Disease control and surveillance**

An animal disease surveillance network was set up in 1999 and officially validated in 2000 by the Order officially establishing the SISAC Network.

SISAC is an animal health information network called the Central African Animal Health Information System (SISAC).

The main diseases investigated by ANDE agents:

- in cattle: endemic classical pathologies: trypanosomose and bovine babesiosis that develop when animals sink into forest galleries including deep areas with high glossy pressure; piroplasmosis (canine babesiosis); gastrointestinal parasites (strongles) and bovine anaplasmosis. In coprology, at the laCEVET level, the main gastrointestinal verminoses strongyloses predominate over coccidiosis;
- For small ruminants, PPR, which causes a mortality of 15-50%; intestinal parasites account for 40% of the diseases cited, scabies and infections 20%;
- In pigs, African swine fever and red muller are the most important threat, followed by parasitosis (70%), mastitis and pneumonia;
- In poultry, Newcastle disease in chickens of all ages, coccidiosis, avian smallpox and other timely infections also occur on farms.

In terms of animal health, the country has experienced surveillance of 5 diseases, the list of which is as follows (contagious peripneumonia of bovids, pasteurellosis, symptomatic anthrax, New Castle disease, small ruminant plague, African swine fever).

» **Research and training**

The CAR has a central functional laboratory whose technicians have received additional diagnostic training as part of the projects.

At the institutional level, the ANDE was once responsible for applied veterinary research, but this task was subsequently entrusted to the Central African Institute for Agricultural Research (ICRA).

The Pasteur Institute in Bangui is also involved in veterinary research for zoonotics. As part of the partnership with the Pasteur Institute in Bangui on epidemiological surveillance of HPPI, studies have mainly highlighted viral chicken anaemia, but also infectious bronchitis and infectious laryngo-tracheitis.

The Animal Health laboratories are: LACEVET (Central Veterinary Laboratory of Bangui) currently functional and 03 non-functional regional laboratories.

» **Non-state actors**

The majority of cattle producers and pastoralists treat the animals themselves. Over the years, breeders have developed techniques to control certain diseases. They have identified remedies that can mitigate or cure certain diseases at a lower cost, usually evaluated by the time it takes to find the product in the wild.

Socio-professional organizations have a strong presence in the Central African Republic, where cattle producers have formed pastoral interest groups (PIGs). Some IPG breeders have been trained in knowledge of major diseases, their treatments and drug dosages.

The legal framework for the practice of the veterinary profession is absent. There is no formalized private sector.

Central African veterinarians are gathered in a national order, the OVECA, established in 2001. The OVECA remains limited due to a lack of financial means.

There is an organized structure of breeders' and butchers' associations at the central level (the Federation of Central African Breeders (FNEC and ANBC), according to the administrative divisions and up to the community level, allowing an effective relay for the implementation of animal health programmes.

v) **IN CONGO**

» **Institutional framework**

In the Republic of Congo, the Ministry of Agriculture, Livestock and Fisheries (MAEP) is responsible for the definition and implementation of policy in the agricultural field (including livestock and fishing).

Livestock farming has never been particularly successful because of the low propensity of the rural population to engage in this activity on a permanent basis. The rural environment is mainly agricultural, and livestock farming is a complementary activity, which remains secondary, even if each household has a self-consumption farm with a few heads of goats, sheep, pigs or poultry. Cattle farming is located mainly in the Plateau regions. The state had attempted to develop a modern livestock farm within the framework of the five state ranches with the introduction of Ndama and Lagoon cattle breeds, adapted to the country's climatic conditions, but the toll proved disastrous.

Poultry farming is the most common livestock industry, although its productivity remains low. Pig farming is on the rise and small ruminant farming is also widespread, and can grow significantly if appropriate policies for farmer support and supervision are implemented.

» ***Disease control and surveillance***

On animal health:

Decree 9191 of 22 November 2010 establishing, assigning and organising the National Centre for the Control of Epidemics.

This national epizooty control centre, under the control of the Ministry of Agriculture and Livestock, serves as a framework for securing the health of livestock farms, establishes a national network of animal disease epidemiology and ensures its operation while ensuring the continuous training of field and laboratory workers.

The surveillance of zoonotic diseases is still done in a sectoral way. Each sector has its own surveillance system and list of zoonotic diseases under surveillance according to its priorities. The joint prioritization of zoonotic diseases involving the human and animal health sector has not yet been carried out.

Congo has remained on the margins of major African outbreaks: bovine plague, bovine peripneumonia (PPCB). Among the most common diseases: hemoparasitosis (Trypanosomose, babesiosis, piroplasmosis) in the bovine species; African swine fever, Newcastle disease in poultry and digestive tract parasitosis, in general, are limiting factors for Congolese breeding.

» ***Veterinary inputs service providers***

The supply and distribution of veterinary products is under the control of the private sector.

PRODIVET CONGO (Promotion and Distribution of Veterinary Products in Congo) imports and distributes a full range of veterinary medicines and products developed for intensive breeding by major European laboratories.

There is no food safety legislation Food safety.

vi) IN THE DEMOCRATIC REPUBLIC OF CONGO

» ***Institutional framework***

In the Democratic Republic of Congo (DRC), the Ministry of Agriculture and Livestock (MAE) is in charge of the government's livestock policy. The Directorate of Production and Animal Health (DPSA) is the operational body for the country's animal health and production activities.

Breeding is dominated by the traditional extensive system. It is mainly the Ndama and Lagoon breeds that are concerned with cattle farming. The animal herd consists of: cattle, goats and sheep, pigs, rabbits, aulacodes and assimilated.

Poultry farming is the largest, followed by goat/sheep and pigs.

» ***Disease control and surveillance***

From an animal health perspective, priority diseases are represented by hemoparasitosis (trypanosomosis,

babesiosis, piroplasmosis) in cattle; small ruminant plague (PPR), African swine fever, Newcastle disease in poultry and parasitosis of the digestive tract, in general are the dominant pathologies. bovine contagious pleuropneumonia, symptomatic anthrax and foot-and-mouth disease in ruminants.

The Emergency Centre for the Control of Cross-Border Animal Diseases (ECTAD) is implementing the Global Health System Agenda (GHSA).

As part of the One Health approach, the centre is helping to monitor five priority zoonotic diseases: Ebola virus disease, avian influenza, monkey smallpox, rabies and salmonellosis.

Veterinary services suffer from a lack of human, material and financial resources. In remote areas, community animal health workers make a significant contribution by providing health care.

» **Veterinary inputs service providers**

The DRC has a National Essential Medicines Procurement System (SNAME), coordinated by the National Essential Medicines Procurement Programme (PNAM).

This system aims to centralize the acquisition of medicines through the central procurement coordination offices and the decentralisation of distribution through regional drug distribution centres (CDRs).

Veterinarians are grouped in the DRC's National College of Veterinary Physicians, which has been in the works since November 16, 2018.

This FAO programme, which builds laboratory capacity in disease surveillance, will certainly contribute to the more effective fight against five priority zoonotic diseases in the DRC, namely avian influenza, rabies, Ebola virus disease, monkey smallpox and salmonellosis.

The DRC also has veterinary laboratories for animal disease diagnosis and biosecurity.

vii) IN GABON

» **Institutional framework**

In Gabon, veterinary services are under the responsibility of the Directorate General of Livestock at the Ministry of Agriculture, Livestock, Fisheries and Food.

The institutional framework is marked by a series of reforms and policies to develop livestock and agriculture more generally within the framework of the Government's sectoral policy defined in 2004-2005 in the Agricultural Orientation Act and Policy Letter for Agropastoral and Rural Development.

Gabon has benefited from many programmes supported in the multilateral framework:

- The PACE program for the eradication of bovine plague, the control of tsetse fly infestations;
- FAO has provided equipment to strengthen the veterinary diagnostic laboratory, which remains non-operational today;
- OIE support in assessing the performance of veterinary services;

- The AU/BIRA as part of the Strengthening of The Governance of Veterinary Services (VET-GOV).

The institutional reform of the General Directorate of Livestock has led to the creation of a veterinary division between the DGE for Animal Health and the Gabonese Food Safety Agency (AGASA) for risk analysis and food inspection.

To cope with the outbreaks, the country has:

- Veterinary services have already been the subject of the OIE PVS assessment but whose performance remains weak due to the lack of technical and financial resources, an appropriate legal framework.
- An epidemiological monitoring network was created during the first threat of avian influenza, the Gabon Animal Disease Surveillance Network (REMAGA). This information and awareness tool was extended throughout the territory and targeted all livestock diseases. The lack of financial resources and technical equipment have not made this network sustainable.

» **Veterinary Diagnostic Laboratory**

- A non-functional veterinary diagnostic laboratory. However, the veterinary services work very well with the Interdisciplinary Medical Research Centre of Franceville (CIRMF), which has state-of-the-art laboratories for the diagnosis of diseases.

The main priority diseases of concern to veterinary services are the followings:

- Trypanosomiasis;
- Contagious Bovine Peripneumonia (CBPP);
- PPR;
- Coccidiosis;
- Newcastle disease;
- The mastitis;
- The trampled;
- Babesiosis;
- Internal parasitism;
- Ectoparasites (Ticks, fleas, mites, myases.);
- The Canine Rage;
- Canine parvovirus;
- The classical swine fever.
- Highly pathogenic avian influenza has been the subject of a contingency plan.

Other diseases that compromise livestock are taken into account: Newcastle disease, Trypanosomiasis.

Livestock farms do not benefit from sustained supervision of veterinary services due to weak operational and financial resources.

The veterinary diagnostic laboratory is not functional which limits investigations to the symptomatic level systematically.

Nature being the horror of the void, veterinary services are sometimes performed by unskilled people who improvise veterinarians, and sometimes by themselves breeders even though they do not have training.

Suppliers of veterinary inputs

In terms of the distribution of veterinary inputs, the Gabonese Chemistry (GCIAE) distributes French veterinary specialties and in particular a range adapted to village poultry farming. These products, used as a preventive or curative measure, improve the biological and economic efficiency of both industrial and traditional farms.

GCIAE has been able to create close proximity to its breeding customers through a strong distribution network and technical service combining scientific knowledge and field experience.

viii) EQUATORIAL GUINEA

» Institutional framework

The livestock sector is under the tutelage of the Ministry of Agriculture, Livestock, Forestry and the Environment. The policy of the livestock sector in Equatorial Guinea is based on Law 4/1990, “Animal Health and Livestock Development”, promulgated on 15 May 1990. It refers to the Agreement on the Harmonization of Animal Health Legislation and Regulations in the Central African Customs and Economic Union (UDEAC) which became CEMAC.

Breeding has remained in the embryonic stage of development. Large livestock farms, particularly cattle farming, are severely handicapped by the climate and epidemics. Only short-cycle farms retain development potential.

Meat production systems are still to be improved, these are traditional and extensive systems, lowly productive and based on small ruminants, poultry and pigs, family production units have small numbers.

» Institutional and regulatory framework:

- Act No.006/ 16 April 2001 on the nomenclature and zoo-health regulations of diseases deemed legally contagious by mandatory declaration (title IV: “from health police to borders”);
- Law 2000/017 of 19 December 2000 regulating the Veterinary Health Inspectorate;
- Act 96/012 of 05 August 1996, which set out the framework law on environmental management;
- Decree 75/527 of 16 July 1975 regulating livestock and animal industries;
- Decree No.99/818/PM of 09 November 1999 setting out the modalities for the establishment and operation of establishments classified as dangerous, unsanitary and inconvenient;
- Decree 86/711 of 14 June 1986 setting out the modalities for veterinary health inspection.

ix) IN CHAD

» Institutional framework

The livestock sector is under the tutelage of the Ministry of Livestock and Animal Production (MEPA).

MEPA is responsible for developing the regulation, coordination and monitoring of the implementation of national policy on pastoral development and animal production, animal health, public health and animal safety. Within THE MEPA, the General Directorate of Livestock, the General Directorate of Planning and Capacity Building and the Veterinary Services Directorate are most involved.

Reforms led to the creation of a General Directorate of Veterinary Services, DGSV (while the former Directorate of Veterinary Services, DSV, was placed in the General Directorate of Animal Productions), and the hierarchical attachment of the Regional Delegations of Livestock (DRE) to the DGSV, thus creating a direct chain of command.

The DGSV's mission is to coordinate, facilitate and monitor animal health. As such, it is responsible for:

- Coordinating, supervising and animate the activities of the technical directorates and the Livestock Delegations under his authority;
- Follow up on national veterinary health and public health policy and zoo health regulations;
- Represent the Ministry to national, regional and international health and veterinary authorities.

In Chad, livestock farming has two facets: There are:

- transhumant farming;
- sedentary farming by local farmers who are increasingly owning animals in their livestock. As a result, we are witnessing an agro-pastoralism that has been in place for several generations. However, this situation does not facilitate cohabitation between farmers and herders.

Control and surveillance of animal diseases

In terms of disease surveillance, the country has set up since 1995 a network of animal disease epidemiology-surveillance in Chad called REPIMAT to enable early warning of livestock organisms in the event of an outbreak, an increase in the incidence of an existing disease or the recurrence of an exotic disease, and to collect information on the pathological dominance of the herd. It is a communication tool between the field and the laboratory. It collects standardized information, trains field workers and formalizes an internal organization in the laboratory.

The REPIMAT, Chad's animal disease epidemiological surveillance network, is virtually out of operation, in connection with the breakdown of OAS resources, particularly for field visits. The database is obsolete and no one knows how to use it correctly. The REPIMAT Bulletin is published when a project funds it.

This network covers 131 positions in the country's 18 regional livestock delegations and currently monitors 12 diseases considered priority. The main players in THE REPIMAT are the field workers (investigators, livestock sector leaders and regional livestock delegates). To materialize collaboration between the institutions involved, REPIMAT has a steering committee, a technical committee and an animation cell.

Priority animal diseases taken into account in the Gap Analysis in 2014 are:

- Contagious Bovine Pleuropneumonia
- Peste des Petits Ruminants (PPR)

- Anthrax,
- Black Quarter
- Pasteurellosis
- TB
- LSD
- Bovine brucellosis
- African Swine Fever (ASF)
- Rabies
- Newcastle disease.

Data collected from different slaughterhouses and slaughter areas also frequently cite the following diseases: foot-and-mouth disease; babesiosis; bovine cysticercosis; dermatophilosis; contagious nodular dermatosis distomatosis; echinococcosis; epizootic lymphangitis of equines; Surra; bovine trypanosomose; bovine tuberculosis; avian smallpox.

» **Non-state actors**

On the ground, ONGs support the livestock sector:

- SECADEV (Catholic Relief for Development) is a denominational NGO born from the initiative of the Diocese of N'Djamena to provide Christian assistance to the people of the central region. SECADEV later began turning assistance into development support.
- INDAES Training: It is a network of pan-African associations under Ivorian law that works for equitable and sustainable development in Africa. Recognized as a public utility, he advocates for a more egalitarian and supportive society, through the promotion of the common good.

Veterinarians organized in the National Order of Veterinarians of Chad (ONVT).

» **Veterinary laboratories:**

The country has virtually no reliable diagnostic capacity to cover all priority diseases targeted by surveillance.

The IRED is the only animal health laboratory in the country, has good foundations and competent staff, but it lacks regular investment, equipment and especially reagents.

In terms of food safety, the risk analysis is carried out by the CECOQDA in charge of food and drug analyses.

» **Veterinary drug suppliers**

Access to quality veterinary medicines is a strong demand from breeders. The veterinary drug market is completely unchecked. Illegal or adulterated drugs occupy the market, especially in provinces where they are sometimes the only ones accessible via street vendors.

In an attempt to control distribution, the DSV is attempting to withdraw authorizations to open pharmacies or depots that are not effective, and has increased the cost of filing applications. In the face of illegal sellers,

wholesalers have recently organized themselves in association. However, breeders complain about the quality of the drugs, but generally prefer the price. They often don't respect dosages.

The situation is marked by a highly developed illegal market:

- official distribution channels not covering the entire territory;
- in many areas, no outlets, yet relatively close to the capital;
- Illegal sellers are present throughout the country, including in N'Djamena, in markets (cattle markets, other markets), along roadsides, etc.
- auxiliaries trained over time sell themselves medicines purchased from wholesalers, or illegally imported (excluding taxes), or most often counterfeits.

x) SAO TOMÉ AND PRINCIPLE

» Institutional framework

The Ministry of Agriculture, Fisheries and Rural Development is the institution responsible for the agricultural sector. He leads the policy of modernization of the agricultural and rural sector.

The rural environment is very unstructured and producer organizations are fragile. In general, rural producers are little or no concerned or involved in debates around agricultural and rural development policy and strategies issues.

» Non-state actors

Emerging civil society is working to develop non-governmental organizations (NGOs) and build capacity to better participate in development policy debates. These national and international non-governmental organizations are involved in agriculture, food security and rural development. In the livestock sector, one can note: FENAPA (National Federation of Small Family Farmers); ADAPA (agriculture development, environment, livestock); REDE DE Segurança Alimentar (food security); ZOOVET (Breeding) and CMA (animal health service).

» Disease control and surveillance

Sao Tomé and Príncipe does not have a specific tool for disease surveillance. A project under way "Livestock Development Support Project (PADE) in Sao Tomé and Príncipe will help improve the livestock health environment to achieve a significant reduction in animal mortality, improve the productivity level of livestock at least through raising the technical level of small-scale farmers and improving their production conditions.

This project should contribute to: (i) the creation of an epidemiological monitoring unit for programmes to combat major outbreaks, (ii) the training of managers, technicians and field officers to organize and operate an extension/training and research/development unit, (iii) the promotion of livestock activities including financial support to family-sector breeders, rationalization of the use of agricultural by-products, importation of pig, sheep and goat breeders, rehabilitation and construction of meat slaughter and marketing infrastructure, and (iv) rehabilitation and equipment of the Livestock Directorate, decentralisation of its services and strengthening of the veterinary laboratory and health inspection services.

2.2. *Eastern Africa*

2.2.1. Structures in charge of policies, regulation and communication

Public and para-public structures upon which animal health systems are anchored differ from one country to another and from time to time depending on political and institutional reforms that may be taking place. At the Ministry level, the Chief Veterinary Officer (CVO) is the OIE Delegate and attends OIE Meetings as the official Country representation. Further, the CVO heads of various technical units at the central level, relevant statutory bodies (para-public bodies) and international organizations, form the core team for initiation and steering the policy and legislative agenda before inviting other stakeholders to participate.

Nomenclature of government ministries may change from time to time but in essence the Ministry responsible for animal resources is normally the home to animal health systems.

International organizations include FAO, OIE, WHO, ILRI, ICIPE, and CDC among others. They formally link with Ministry headquarters while on the other hand link directly with the CVOs on technical matters.

Para-public organizations include vaccine production and supply institutes, regulatory bodies, research organizations, animal breeding institutes etc. They link directly with Ministry headquarters on administrative matters but also link with CVOs on technical matters.

2.2.2. Control and monitoring structures

Control and monitoring structures are conspicuously absent apart from donor funded projects that factor in project monitoring units or provide a mechanism for control and monitoring. However, the CVO exercises full control over technical units under them at the central level but has little control over middle, lower and ground levels especially where political and constitutional arrangement of government structures gives these levels governance autonomy / semi-autonomy.

2.2.3. Research and training structures

Public and para-public research and training structures are available in most of the countries but with inadequate resources for operations. In Kenya for instance animal health research is under the mandate of Kenya Agricultural and Livestock Research Organizations (KALRO) which is a para-public institution. Training structures include public universities (offering mainly degree courses) and middle level colleges (Animal Health and Industry Training Institutes -AHITIs) offering animal health courses at certificate and diploma levels. In addition to training, public universities also carry out animal-health related research as a back up to teaching portfolio.

2.2.4. Product suppliers

Products suppliers are mainly para-public institutes and are financially supported by government. They are part of strategic institutions that supply essential inputs for the livestock sub-sector and animal health in particular. They include vaccine production institutes (e.g. Kenya Veterinary Vaccine Production Institute - KEVEVAPI), Semen production institutes (e.g. Kenya Animal Genetic Resources Centre - KAGRC) and East Coast Fever vaccine production Institute in Malawi (Centre for ticks and tick-borne diseases - CTTBD).

Ethiopia has a National Vaccine Production institute (NVI) and hosts AU- Vaccine production centre (Pan African Veterinary Vaccine Centre - PANVAC).

2.2.5. Characterization of private structures in the animal health system of countries

2.2.5.1. Veterinary and para-veterinary offices

Veterinary and para veterinary entities comprise of the veterinary professional associations and veterinary paraprofessional associations.

1. Veterinary Professional Associations:

- These are associations of veterinarians/veterinary surgeons
- Examples include Ethiopian Veterinary Association (EVA), Kenya Veterinary Association (KVA), and Uganda Veterinary Associations (UVA).
- Similar associations are in the other member states.
- The associations are legal entities whose operations and activities are controlled by their constitution.
- Membership of the association comprises of the registered / licensed veterinarians, both from private and public sectors.

2. Veterinary Para Professional Associations:

- These are associations of the paraprofessionals who have undergone training in animal health, either at certificate or diploma levels. In some member states they include bachelor's degree holders in animal science/health.
- Examples are the Kenya Veterinary Paraprofessionals Association (KVPA), Kenya Animal Scientists and Professionals Association (KASPA) and Animal Health Technicians and Technologists Association of Kenya (AHTTAK).
- Like the professional associations they operate within the precincts of law.
- Their operations and activities are also governed by their respective constitutions.
- Membership of the association comprises of the registered / licensed veterinary paraprofessionals, both from private and public sectors.
- In some member states the community based animal health workers (CAHWs) are included in the cadre of veterinary paraprofessionals.

Both Veterinary Professional and Veterinary Para Professional Associations are represented in the Kenya Veterinary Board (KVB) which is regulatory Board. Other countries with similar arrangements include Tanzania, Malawi, and Zambia. (Source of information Mr Benson Ameda, President of Africa Veterinary Technicians Association AVTA).

2.2.5.2. Private practitioners

These include veterinarians and the veterinary paraprofessionals.

- Private practitioners are registered and/or licensed by their respective veterinary statutory bodies (regulatory authorities) in their countries e.g. Kenya Veterinary Board (KVB) and the Veterinary Council of Tanzania (VCT).
- Activities of private practitioners are mainly clinical services, animal vaccinations, provision of artificial

insemination (AI) services, sell of animal health inputs, disease reporting and advisory services. They are expected to report animal diseases to the veterinary authorities but this linkage is usually weak.

2.2.5.3. Control and monitoring structures

Control mechanisms for the private structures are generally in place in nearly all member states. Some of these mechanisms are:

1. Control by the regulatory bodies:
 - Regulatory bodies legally exercise control over the private practices.
 - Veterinary professionals and veterinary paraprofessionals are registered or licensed by the regulatory authorities who also monitor their operations and activities.
 - Additionally the regulatory bodies develop Code of Conduct to which the professionals must comply with.
2. Quality control of the veterinary profession:
 - Regulatory bodies require veterinary professionals and veterinary paraprofessionals to undergo approved continuous professional development (CPD) training.
3. Internal control mechanisms:
 - Veterinary professionals and veterinary paraprofessionals associations have governance tools such as constitution, bylaws that guide and control their operations.
4. Other national laws:
 - There are general laws that are relevant to animal health operations which the private animal health practitioners must comply with (are bound) e.g. national constitution, environmental laws, public health laws.

2.2.5.4. Training structures

Historically the governments were the sole providers of training for animal health service professionals. However, with the advent of liberalisation the private sector came in to provide services commonly referred to as private goods. Despite this the private sector involvement in training of animal health service providers has been relatively low. However in the recent times private universities have come up with a few of them offering animal health courses at certificate and diploma levels. The compliance with the standards for animal health training has been a challenge to private colleges and universities that are interested in offering the courses.

Private animal health training structures are not a common feature in most of the countries in the region.

2.2.5.5. Suppliers of products and other services

Private suppliers of various animal health inputs and other services are major players in animal health sub sector as illustrated in the table below.

Input	Suppliers	Use / relevant services
Veterinary drugs	Manufacturers Importers/ distributors Pharmacies Agrovets Private animal health practitioners	Treatment and management of animal diseases
Veterinary vaccines	Importers/ distributors Pharmacies Agrovets Private animal health practitioners	Prevention of animal diseases
Semen	Importers/ distributors Agrovets Private animal health practitioners Dairy Cooperative societies	Artificial insemination service and breed improvement
Equipment & materials	Manufacturers Importers/ distributors Pharmacies Agrovets Private animal health practitioners Private veterinary laboratories	Animal husbandry practices, animal health procedures, and disease diagnosis
Animal feeds	Importers/ distributors Agrovets Private animal health practitioners Dairy Cooperative societies Farmers	Animal health improvement, animal nutrition & improvement of animal welfare
Animal pest control products	Manufacturers Importers/ distributors Pharmacies Agrovets Private animal health practitioners	Control of pests and disease vectors.

Notes:

1. The non-governmental organisations (NGOs), community based organisations (CBOs) & faith based organisations (FBOs) are involved in animal health and welfare in several ways e.g. funding, livestock emergency interventions, distribution of the inputs.
2. As shown above private sector plays a major role in the provision of animal health inputs, thus contributing significantly to improved animal production and productivity, livelihoods, food and nutrition security as well socio economic development.

2.3. Northern Africa

2.3.1. Structures in charge of policies, regulation and communication

» National public structures:

All countries in the region have centralized government institutions with regional representations. The legal status of these structures differs from country to country, it is an autonomous public establishment (Morocco, Libya, Egypt) or a central administration directly attached to the Ministry in charge of livestock with always regional representations.

For Egypt, the General Organisation for Veterinary Services was established in 1984. It is a public institution with administrative and financial autonomy with a central administration located in Cairo and regional representations at the prefecture level.

It is responsible for implementing livestock development plans, implementing mechanisms to control the spread of epidemic diseases through a regular system of vaccination and surveillance of cross-border epidemic diseases, and protection against zoonoses.

In Morocco, it is a public institution with administrative and financial autonomy with a central administration in Rabat and regional representations at the prefecture level, it is the Food Safety Office whose missions concern both animal and plant health, are defined by Article 2 of Law 25-08 bearing its creation, which states:

- Apply the government's policy on the safety of plants, animals and food products from raw materials to the end consumer, including food for animal feed;
- Ensure the health protection of the national plant and animal heritage and control plant and animal products or plant or animal products, including fishing products, for import, domestic and export;
- Ensure health monitoring of animals and control their identification and movement;
- Apply current regulations for veterinary and plant health police;

In Libya, it is the National Centre of Animal Health NCAH, which is under the Ministry of Agriculture. The headquarters of the NCAH is based on the outskirts of Tripoli and headed by a Director-General who is also the CVO. The NCAH has four divisions at the central level: Animal Health, Laboratories, Quarantine and Drugs and Vaccines, as well as a Control and Support Services Department. The NCAH has 7 regional representations: Jebel Lakhdar, Benghazi, Central Zone, Zawia, Tripoli, Western Mountains and Sabha. On a sub-regional scale, the NCAH has 50 local offices and 300 public veterinary clinics.

In Algeria, the directorate of veterinary services, under the supervision of the ministry in charge of livestock, is responsible for exercising the national veterinary authority and defining the veterinary health strategy; to prepare, monitor, monitor and evaluate legislation and regulations relating to animal and zoonotic health, animal welfare and identification, and the safety of animal and animal products for human consumption and animal feed; control veterinary professional practice and veterinary pharmacy; define and implement policies to support and support the development and protection of animal health; collaborate and participate with national and international veterinary organizations and ensure the promotion and monitoring of good veterinary practices.

It comprises four (4) under direction: The Animal Health and Welfare Branch - the Food Safety and Border Health Control Branch, the Veterinary Pharmacy and Input Branch, and the Veterinary Performance Improvement and Services Branch.

At the regional level (Wilaya), the DSV is represented in the 48 Directorates of Agricultural Services (DSA) of Wilaya.

In Tunisia, the Directorate General of Veterinary Services, under the Ministry of Agriculture, represents the competent authority on animal health. It is responsible for the definition of veterinary health policy, the evaluation of the implementation of animal disease control programmes, the drafting of veterinary legislation and the monitoring of the safety and safety of animal products for consumption. It comprises three central

directions: Animal Health; Animal product safety control and border control and standardization. At the regional level, 24 animal production districts under the Regional Agricultural Development Commissioners (CRDA) represent the DGSV.

» **Veterinary Statutory Bodies (VSB)**

The General Veterinary Organization (GVO), better known in French-speaking countries as Veterinary Statutory Bodies, is defined by the World Organization for Animal Health (OIE), as an autonomous regulatory body for veterinarians and veterinary para-professionals (PPV), with a legal mandate to regulate quality and competence.

The functional and legislative framework within which VSOs carry out their mandate is defined by Article 3.2.12 of the OIE Land Code (Code) and covers three main objectives: Regulating and accrediting veterinarians and veterinary paraprofessionals (PPV); Set minimum standards for the training (initial and continuing) required for diplomas and certificates that allow holders to be registered and certified as veterinarians and PPVs, and normalize the professional conduct and skills of veterinarians and PPVs and ensure that these standards are met.

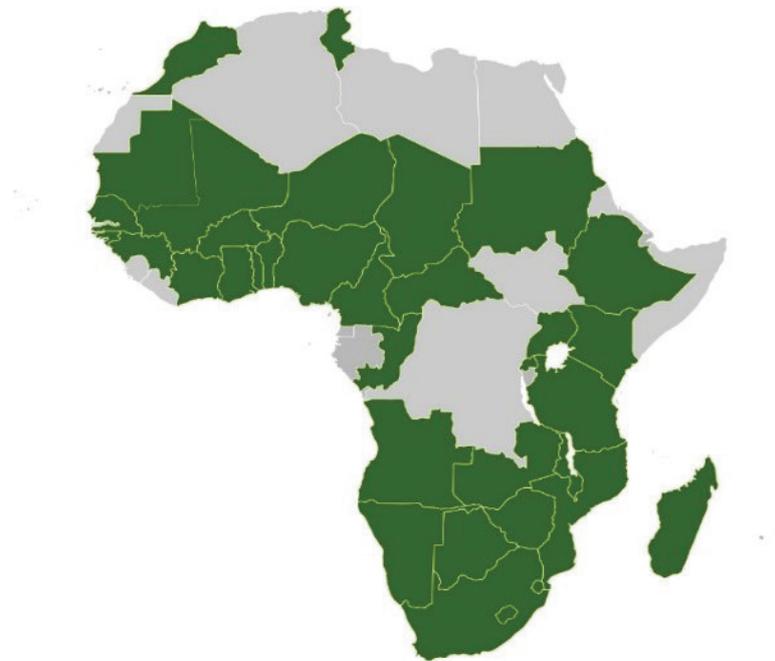
On the basis of the above, an effective VSB is the strong factor in the good governance of veterinary services worldwide and in the specific country in particular.

The OIE and other international agencies, including the AU-BIRA and regional organizations, appreciate the importance of VSBs as a driving force in the process of improving and upgrading veterinary services and thus contribute significantly to the improvement of human, animal and environmental health.

In this context, and on the recommendations of the OIE Regional Commission convened in Bamako, Mali, in 2011, the African Union Inter-African Office of Animal Resources (AU-BIRA), as part of its regional veterinary governance programme (Vet-Gov), took the initiative to conduct a study on osV Capacity Mapping in Africa.

The data available to date suggest that the oldest VSOs in Africa include the South African Veterinary Council established in 1933 and the Council of the Order of Veterinary Physicians of Tunisia, established in 1947

It appears that of the 8 countries surveyed, only four (4) have a VSB, namely Mauritania, Morocco, Tunisia and Sudan. In these countries, VSBs only register veterinarians, PPVs are not allowed for registration by OSVs in Maghreb countries.



Map 1: African countries with a VSO (in green)

Trade union organisations:

Trade unions are associations of people whose objective is the defence of common professional interests. Trade unions or professional associations include persons in the same profession, similar or related occupations, and their exclusive purpose is the study and defence of rights, as well as the material and moral, collective and individual interests of the persons covered by their statutes. So it's a completely different concept from VSOs. Veterinarians in the public and private sectors are grouped into trade unions in most countries in the region and participate effectively in health policies, particularly in the implementation and monitoring of the health mandate (PPP).

Breeders in the Maghreb region are also grouped in union, this is the UMAGRI. It is a regional agricultural organisation of a professional, economic and social nature. It was created on May 21, 1989 and reactivated on July 4, 2007 after a few years of lethargy. At the initiative of its creation are five national peasant organizations from Algeria, Libya, Morocco, Mauritania and Tunisia. Recently, the organization registered memberships of the Central Union of Egyptian Agricultural Cooperatives and the Sudanese Farmers and Pastoralists Union, bringing its membership to seven. UMAGRI's permanent headquarters are in Tunis, Tunisia.

International organizations:

The main international organizations involved in the animal health sector have regional or sub-regional representations.

For the Food and Agriculture Organization of the United Nations (FAO), a Regional Office for the Near East and North Africa is open in Cairo and a sub-regional office for North Africa in Tunis.

For FAO, the main function of the Regional Offices is to identify, plan and implement all of FAO's priority activities in the region concerned. They enable a multidisciplinary approach to programmes, define the Organization's priority areas of action in the region and make recommendations, in collaboration with the

departments and divisions of Headquarters, on the integration of these priorities into the Organization's Work programme and budget. The Regional Offices are also responsible for implementing approved programs in the region, monitoring implementation and reporting potential problems and weaknesses.

The World Organisation for Animal Health (OIE) has a representation in Tunis. The OIE Sub-Regional Representation for North Africa was established in Tunis, Tunisia, following an agreement signed on 13 January 2009 between the OIE and the Tunisian Government.

The OIE Sub-Regional Representation for North Africa was established to cover the five OIE member countries in the region (Algeria, Libya, Morocco, Mauritania, Tunisia) in connection with the OIE Regional Representation for Africa based in Bamako (Mali) and the Arab Maghreb Union (UMA) based in Rabat, Morocco. For certain activities related to GF-TADs and REMESA, Egypt is also associated.

The specific objective of this Representation is to provide members of the region with close and appropriate services to strengthen surveillance and control of animal diseases. This Representation aims to contribute to improving the quality of information on animal diseases and to work towards harmonizing methods of combating these diseases, in close collaboration with national or international animal health services established in the region. It will participate for the North Africa region in the implementation of recommendations, strategies and action plans validated by the OIE Regional Commission for Africa.

WHO in the African Region: The WHO Regional Office for Africa is one of six WHO regional offices worldwide. It serves the WHO African Region, which includes 47 member states, with the Regional Office in Brazzaville, Republic of Congo. As the leading health authority within the United Nations (UN) system, the office works with African Region Member States and development partners to improve people's health and well-being. For North African countries, a sub-regional office is stationed in Tunis.

The Office's mission is to translate global health initiatives into regional plans that address the specific needs and challenges of countries in the region. Assistance is provided to countries to achieve better health outcomes through technical and policy advice, the development of standards and standards, production and knowledge sharing with health partners.

Key areas of action include health sector development, disease control - infectious diseases such as tuberculosis and HIV, and non-infectious diseases such as cancer, diabetes and heart disease.

The Inter-African Office of the African Union for Animal Resources (UA-IBAR) is a specialized technical office of the Department of Rural Economy and Agriculture (DREA) of the African Union Commission (AUC). AU-BIRA's mandate is to support and coordinate sustainable development and the use of animal resources (livestock, fishing and wildlife) to improve nutrition and food security and contribute to the well-being and prosperity of the people of the African Union. The AU-BIRA fulfills its mandate by supporting and empowering African Union member states and regional economic communities (RECs). The African Union's vision is of an Africa where animal resources make a significant contribution to reducing poverty and hunger. Founded in 1951 to study the epidemiological situation and control the pest in Africa, the

IBAR mandate now covers all aspects of animal resources across the African continent and fills a unique and strategic niche by working at continental and regional levels, with RECs being key partners. The AU-IBAR is a key partner with all countries in the North African region. Indeed, the AU-BIRA supported the secretariat of the Arab Maghreb Union (UMA) as well as member states to develop national and regional strategies and actively contributed to capacity building programmes.

International networks and initiatives:

The Global Framework for The Progressive Control of Cross-Border Animal Diseases (better known as GF-TADs) was launched on 24 May 2004, when the GENERAL FAO-OIE GF-TADs Agreement was signed. The GF-TADs is a joint initiative of FAO and the OIE, with the participation of WHO for zoonoses, to achieve the prevention, detection and control of cross-border animal diseases (TADs) and in particular to address their regional and global dimensions.

The GF-TADs is a facilitation mechanism that seeks to strengthen regional alliances in the fight against cross-border animal diseases, to provide capacity building and to help establish specific control programmes for certain cross-border animal diseases in line with regional priorities.

At the global level, the GF-TADs Global Steering Committee provides strategic guidance to regional steering committees for the definition of their annual or multi-year action plans and facilitates collaboration and cooperation between the global and regional levels.

For Africa, the Regional Steering Committee (RTC) serves as regional stakeholder platforms, bringing together the OIE Regional Commission, FAO Regional Representation and THE WHO Regional Office with key technical and, if applicable, regional economic organizations, country representatives and regional and international development partners. The Chair of the Steering Committee should be held by the AU-BIRA.

REMESA is part of the overall context of the initiatives of the Barcelona Process for a Mediterranean Partnership, and more recently, the project to create the Union for the Mediterranean launched in Paris on 13 July 2008. This initiative is also in line with the European Neighbourhood Policy (ENP) developed in 2004, with the aim of strengthening prosperity, stability and security. The ENP, which goes beyond existing relations to offer a political relationship and economic integration, applies to the EU's immediate neighbours. In addition, the countries of North Africa (except Egypt) are grouped within the framework of the Arab Maghreb Union (UMA), whose main objective is to prepare the conditions for progressive economic integration throughout the Maghreb.

The concept of a regional animal health network is based on the consolidation of several countries, and aims to harmonize surveillance and control methods, and strengthen national systems, without replacing their functioning.

The Mediterranean Animal Health Network is based on the veterinary services of each of the countries adhering to its objectives, and is a structure in which regional programmes and projects can find their

roots. The regional level does not replace the essential substantive work that must be carried out in each country, which will remain sovereign in their decisions on epidemiological surveillance, control or sharing of health information outside its borders.

As part of the Mediterranean Animal Health Network, four other sub-networks have been created to harmonize, energize and facilitate the operation and activities of REMESA: the Network of Animal Health Laboratories (RELABSA); the Veterinary Epidemiology-Surveillance Network (REPIVET), the Animal Health Communication Network (RECOMSA) and the Social Economy Network and The Social Economy Systems

The REMESA network is a new structure, a framework for working and mutual cooperation, with the capacity to supervise and facilitate the development of future animal health projects and programmes on both sides of the Mediterranean. Its overall objective is to improve the prevention and control of animal diseases in the Mediterranean region.

The specific objective of REMESA is to improve prevention and control of major cross-border animal diseases and zoonoses by strengthening national and regional skills and capacities, harmonizing and coordinating surveillance and control activities.

The European Commission for the Control of Foot-and-Mouth Disease (EuFMD), one of FAO's oldest commissions, was established on 12 June 1954 with the aim of promoting coordinated and common action against foot-and-mouth disease

EuFMD operates in more than 100 countries in Africa, the Middle East and much of Eurasia. The three pillars of the EuFMD strategy to counter the threat of the disease are working with European member countries and European neighbours to establish sustainable control programmes, and to support and promote progressive control of foot-and-mouth disease in all regions as part of FAO's and the OIE's global foot-and-mouth strategy.

EuFMD provides support for capacity building of veterinary services in the form of training and laboratory equipment for the countries of UMA-Egypt engaged in the progressive control programme against foot-and-mouth disease

2.3.2. Control and monitoring structures

Several public structures contribute to animal health activities in the area of control and surveillance. We can mention the specialized services of the Ministry of Health (for zoonoses), the Directorate (Office) of forestry for the wildlife aspect, the services of fisheries and aquaculture, the plant protection services for vector control, the services of the Ministry of the Interior (Gendarmerie) and Customs and possibly the army for border controls and the implementation of binding measures.

2.3.3. Research and training structures

Veterinary schools are widely present in the countries of the region (32 in total) but are unevenly distributed with 15 institutions in Egypt, 7 in Sudan and 6 in Algeria.

Table 4: List of Veterinary Education Institutions in the Survey Area

Country	Number	Faculty/Higher School/Institute
Algeria	6	<ul style="list-style-type: none"> Higher National Veterinary School Saad Dahlab University of Blida Department of Veterinary Sciences University of Batna Veterinary Department University of Ibn Khaldoun, Tiaret University of Mentouri - Constantine Faculty of Natural and Life Sciences[8] University of Taref Veterinary Department
Morocco	1	<ul style="list-style-type: none"> Hassen II Agricultural and Veterinary Institute
Tunisia	1	<ul style="list-style-type: none"> National School of Veterinary Medicine
Libya	2	<ul style="list-style-type: none"> Omar Al-Mukhtar University Faculty of Veterinary Medicine University of Tripoli Faculty of Veterinary Medicine
Egypt	15	<ul style="list-style-type: none"> Alexandria University Faculty of Veterinary Medicine Assiut University Faculty of Veterinary Medicine Benha University Faculty of Veterinary Medicine Beni-Suef University Faculty of Veterinary Medicine Cairo University Faculty of Veterinary Medicine Damanhour University Faculty of Veterinary Medicine Kafr El-Sheikh University Faculty of Veterinary Medicine] Mansoura University Mansoura University Faculty of Veterinary Medicine Menoufia University Faculty of Veterinary Medicine Minia University Faculty of Veterinary Medicine Sohag University Faculty of Veterinary Medicine South Valley University Faculty of Veterinary Medicine Suez Canal University Faculty of Veterinary Medicine Zagazig University Faculty of Veterinary Medicine] Badr University Faculty of Veterinary Medicine
Sudan	7	<ul style="list-style-type: none"> Sudan University of Science and Technology College of Veterinary Medicine University of Albutana Faculty of Veterinary Medicine University of Bahri Faculty of Veterinary Medicine University of Gezira Faculty of Veterinary Medicine University of Khartoum Faculty of Veterinary Medicine University of Nyala Faculty of Veterinary Medicine University of West Kordofan Faculty of Veterinary Medicine
Total	32	

Veterinary education institutions (EEVs) based in the Countries of the Mediterranean Basin (Albania, Algeria, Turkey, France, Bosnia and Herzegovina, Jordan, Italy, Greece, Morocco, Libya, Tunisia and Egypt) are grouped into an association of veterinary education institutions, the REEV-Med whose main objectives are:

- Promote a process of evaluation, harmonization and standardization of the veterinary curriculum among the Association's member EVEs, in line with international standards including the OIE's recommendations on minimum competencies ("Day 1' graduates"),
- To improve the quality of veterinary education provided by those of its members not yet recognised by international accreditation,
- To assist the members of the Association's EEV to prepare for the international assessment in relation to veterinary education,

The North Africa region also has several Veterinary Research and Diagnostic Institutes.

For Tunisia, it is the Pasteur Institute of Tunis and the Institute of Veterinary Research of Tunisia (IRVT) which is under the tutelage of the Ministry of Agriculture and represents the official laboratory of veterinary services. The IRVT's mission is to participate in the development of veterinary research-training

and publications; the development of new techniques; to participate in the epidemiology and protection of human and animal health; diagnosis and screening of various animal diseases and control of food quality and safety.

For Algeria, it is the National Institute of Veterinary Medicine (El Harrach-Algiers) and the Pasteur Institute of Algiers. In Morocco, animal disease diagnostic laboratories report directly to the ONSSA.

It is also worth noting the role of the institutions in charge of vocational training and extension in the animal health sector by providing training and retraining of PPPs and by implementing extension campaigns in the field of animal health. All countries in the region have institutions dedicated to extension and are one of the main players in animal health.

In Tunisia, the veterinary health system has a specialized public structure that supports veterinary services, particularly in the field of epidemiological data analysis and training.

The National Centre for Zoosanitaire Watch (CNVZ) was established in 2007. It is responsible for collecting and analysing epidemiological data, information, publications, national and international regulations on animal and veterinary public health and disseminating relevant and reliable information to relevant agencies and ministries for appropriate decision-making, all with strategic intelligence covering the areas of its competence. The CNVZ has two directions: the animal health watch directorate, the training and skills development, and the directorate of animal health monitoring and evaluation.

The centre is relayed on the ground by 6 regional observation units, each of which provides the coordination of surveillance and epidemiological monitoring operations and related field studies and research.

Since June 2020, the CNVZ has been the OIE Reference Centre for Veterinary Training and Capacity Building.

2.3.4. Veterinary Product suppliers

In the region, several suppliers of products related to the veterinary sector, including public establishments marketing biologics, mainly vaccines. In Morocco, the national company BIOPHARMA is a company of Organic, Pharmaceutical and Veterinary Productions specializing in the production and marketing of veterinary vaccines in Morocco and several African countries.

Public feed and input companies are very important players in animal health in the countries of the region.

2.3.5. Characterization of countries private structures in the animal health system

2.3.5.1. Veterinary and para-veterinary practices

Changes in the past decades, in the way livestock are managed and in the animal environment, which are increasingly intensive and therefore increasingly sensitive, have led to an increasing demand for health supervision of livestock and individual veterinary care on the part of breeders and livestock professionals, which existing public sector structures can no longer meet.

To accompany these changes in health care, countries have been working in Morocco, Algeria and Tunisia since the 1980s to encourage the private sector of veterinary medicine, surgery and pharmacy, through the establishment of a necessary legislative mechanism to promote the development of this sector. To this end, the legal basis for private practice of veterinary medicine, surgery and pharmacy has been developed and adopted. This legislative framework, thus put in place, has enabled the growing development of the private veterinary sector and a gradual disengagement of state veterinary services in terms of individual care. While the installation of veterinarians in the private sector was initially slow between 1980 and 1985, it has started to take off much faster thanks to the implementation of the “health mandate”.

Free practice veterinarians and PPVs are among the main players in animal health in all the countries under investigation. In fact, almost 80% of the number of veterinarians working in the field in the countries of the study region belongs to the private sector (63405), while the public sector, all areas included (Veterinary Authority, research/diagnostic laboratories; teachers etc...) account for only about 20% of the total workforce.

Table 5: Number of public and private sector veterinarians and PPVs in North African and Sudan countries

Country	Nbr Veterinarians Public	Private veterinarians	Total Eriterns	PPV Nbr
Mauritania	46	80	126	-
Morocco	514	985	1 499	2 368
Algeria	2 712	10 683	13 395	13 527
Tunisia	521	1 401	1 922	2 144
Egypt	9 500	45 000	54 500	55 145
Sudan	2 601	5 256	7 857	-
Total	15 894	63 405	79 299	73 184

2.3.5.2. Control and monitoring structures

Several non-public structures contribute to animal health activities in the area of control and surveillance and represent key partners in the area of control and surveillance. These include non-governmental organisations (NGOs) and producer/breeder associations.

2.3.5.3. Training structures

In the region, there are no private veterinary institutions, all institutions in the region fall under the authority of the states.

However, the private sector is involved in a small proportion of the training of PPVs and in the organization of continuous training cycles for veterinarians.

2.3.5.4. Suppliers of products and other services

In the region, several suppliers of products related to the veterinary sector, including veterinary biologics, mainly vaccines, are marketed. Private feed and input companies are very important players in animal health in the countries of the region.

2.4. Southern Africa

2.4.1. Structures in charge of policies, regulation and communication

At global level, most animal health policies, regulations and disease status communications are spearheaded by the OIE, and then AU-IBAR at continental level. All members of the OIE are expected to report to OIE all confirmed cases or rumours of diseases on the OIE list of notifiable diseases for centralised global reporting. In addition to the OIE, compliance to CODEX Alimentarius and SPS policies and regulations are key to ensure safety of animal derived foods and for member states to effectively participate in regional and international markets for their animals and animal products.

At SADC regional level, the major animal health and production platform is the Livestock Technical Committee (LTC) composed of national directors of animal health and production. The LTC also operates through its 4 sub-committees (Laboratory Diagnostics, Epidemiology and Infomatics, Animal Production and Veterinary Public Health sub-committees) although only the Laboratory Diagnostics and the Epidemiology and Infomatics sub-committees are currently operational.

At national level, structures in charge of animal health policies include the respective Ministries of Agriculture, Livestock, Wildlife and Fisheries although the Ministry names differ in the 5 selected SADC countries. Under the respective Ministries are the respective departments of Veterinary Services (DVS) with smaller structures at provincial and district levels.

The parastatals and private sector farmer organizations also play important roles in animal health. In most of the SADC countries are partially Government run organizations and enterprises (Parastatals) and private sector run farmer organizations. In Zimbabwe parastatals include the Pig Industry Board, Agriculture Marketing Authority and the Cold Storage Commission which is currently being re-vitalised. Among the farmer organisations are commodity-based associations/organizations which include dairy, beef, small ruminants, poultry and wildlife associations/organisations. These livestock commodity organisations also exist in almost all SADC countries.

2.4.2. Control and monitoring structures

The main structures responsible for coordinating the implementation of global disease control programs, monitoring and evaluation activities at global level include the OIE, WHO, FAO, AU-IBAR, CODEX and SPS. The implementation and monitoring of disease control and food safety standards are then adapted and adopted at continental, regional and country levels.

The SADC LTC and its two (2) functional subcommittees are the main structures responsible for coordinating the implementation of regional disease control programs, monitoring and evaluation activities at SADC level. At country level, the Ministries responsible for livestock, Wildlife and fisheries, together with their respective departments of veterinary services are responsible for coordinating the implementation of regional disease control programs, monitoring and evaluation activities.

In Zimbabwe under the national DVS are Provincial Veterinary Directors (PVDs) who head District Veterinary Officers (DVOs). Under the national DVS, PVDs and DVOs are para-veterinary officers namely Animal Health Inspectors and Veterinary Extension Technicians. Under the veterinary extension technicians are community animal health workers (CAHW) who are managed through private sector's farmer organizations which include unions and associations. The management structures of national DVS, regional or provincial and district veterinary structures exist in all selected SADC countries.

At country level, besides structures within the Ministries and respective DVSs are the national Medicine Control Authorities and Councils of Veterinary Surgeons. Among the 5 selected SADC countries, Zimbabwe, S. Africa and Namibia have established Medical Control Authority structures while Lesotho and Eswatini rely on the S. African Medicines Control Authorities. All the 5 countries have their councils of Veterinary Surgeons. The Medicines Control Authorities regulate the use of veterinary drugs including vaccines in their respective countries. Currently there are efforts to harmonise all the individual national Medicines Control Authorities to form the SADC Medicines Control Authority.

2.4.3. Research and training structures

There are the SADC regional reference laboratories and research institutions together with institutions of higher learning which are responsible for human resource capacity building and carrying out animal health research. National Central Veterinary Laboratories are also mandated to carry out research and training. The SADC regional reference laboratories include Botswana Veterinary Institute (BVI) for FMD diagnosis and production of vaccines against FMD, PPR, Anthrax, Blackleg and other viral and bacterial vaccines and S. Africa's Onderstepoort Biological Products (OBP) produces Brucellosis, PPR, Anthrax, Blackleg and other viral and bacterial vaccines, Onderstepoort Veterinary Institute (OVI) for disease diagnostic confirmation and research. Among the national central veterinary laboratories of selected SADC countries involved in training and research include Namibia, Botswana and Zimbabwe's Central veterinary laboratories.

Institutions of higher learning involved in training and animal health research in the selected SADC intervention area include University of Pretoria and other S. African universities, Universities of Botswana, Namibia and Zimbabwe with smaller institutions in Lesotho and Eswatini. There are also a lot of in-service trainings and field research activities in the SADC DVS structures which include disease surveillance, clinical disease recognition, sampling, sample packaging and shipment.

2.4.4. Product suppliers

Animal health products which include animal vaccines, equipment, laboratory testing reagents for the SADC region and member states are supplied mainly by International reference Centres and development partners like IAEA, OIE, FAO and AU-IBAR, the SADC regional reference laboratories (OBP, OVI, Botswana CBPP Reference Centre and BVI) and to a lesser extent by the National Central Veterinary Laboratories and smaller animal health centres in districts which also supply non-prescription drugs, dips, dewormers and vaccines.

Some of the animal health products for research and laboratory diagnosis are supplied through national, regional and international animal health research projects. It is through these projects that modern

equipment and reagents are supplied to the SADC regions. Some of the major regional projects which capacitated most SADC countries include the SADC TADS project, the AU-IBAR SPINAP project for HPAI, SADC FMD project, the AU-IBAR supported Veterinary Governance project and the one health AMR/AMU Fleming fund supported project.

2.4.5. Characterization of private structures in the animal health system of countries

2.4.5.1. Veterinary and para-veterinary Offices

At country level, the private structures addressing animal health systems provide animal feed, clinical health services, and animal vaccines, treatment drugs including deworming remedies, dips, shampoos and general advice on animal health issues. The major private and para-veterinary structures include the following:

- National veterinary surgeon councils,
- Private veterinary laboratories
- National Veterinary Associations
- Private Veterinary Surgeries
- Para-veterinary associations
- Animal welfare organisations,
- Livestock farmer organisations,
- Animal product processing industry
- Commodity based organisations/associations

It is common practice in most SADC countries that private veterinary surgeries and private laboratories focus on small animal practices as opposed to Government and Para-veterinary institutions which focus mainly on livestock health products and animal feeds.

2.4.5.2. Control and monitoring structures

The main structures which control and monitor animal health systems in the private sector are the Medicine Control Authorities, Councils of Veterinary Surgeons and National Veterinary Associations although the animal industry can also use their constitutions of livestock commodity based or wildlife organizations/associations to control or regulate some practices and use of specific veterinary products to protect their industry and for trade facilitation.

National Veterinary councils and Veterinary Associations exist in almost all SADC countries although the Medicines Control Authorities may not exist in other SADC countries like Lesotho and Swaziland/Eswatini. National Veterinary councils regulate and monitor veterinary practices and ensure compliance to veterinary ethics and animal welfare issues while the Veterinary Associations and commodity-based organisations which are governed by their respective constitutions. The national Medicines Control Authorities are mainly concerned about registration of drugs and vaccines in SADC member states including their distribution and ethical use.

2.4.5.3. Training structures

Training is mainly done by government and para-statal institutions at country level, as compared to the private sector. Trainings in the private sector organizations are normally carried out as in-service training

of their staff to address specific training needs as dictated by their industry or sector needs. International capacity building organisations like IAEA, OIE, FAO and UA-IBAR also support training in the private sector through funding and provision of experts of different fields of animal health.

Major players involved in training in the private sector include Medicine Control Authorities, Councils of Veterinary Surgeons and National Veterinary Associations although the livestock commodity based, or wildlife organizations/associations are also involved to a lesser extent. The trainings being offered by these institutions include clinical practice and use of drugs, marketing of animal health products, laboratory testing, disease surveillance and reporting.

2.4.5.4. Suppliers of products and other services

Private suppliers of animal health products and related services include medicines control authorities, private veterinary laboratories, private veterinary Surgeries, livestock farmer organisations, animal health product processing industry and commodity-based organisations/associations.

The medical control authorities provide services which include registration of veterinary medicines, facilitation of drug importation and registration of drug manufacturing plants. The private veterinary laboratories complement government efforts to test and conform disease syndromes while private veterinary surgeries provide clinical services. Livestock farmer organisations, animal health product processing industry and commodity-based organisations/associations are more interested in supplying products they produce together with animal feeds and vaccines.

2.5. Western Africa

2.5.1. Structures in charge of policies, regulation and communication

Animal health policy is the work of the Direction of Veterinary Services (DVS), which draws up strategies, legislation, programs and project documents for animal disease control.

Professional livestock organisations participate in the programme by attending drafting meetings and validation workshops.

The Order of Veterinarians acts as an advisory body and gives its opinion on the installation of a veterinarian in private practice.

2.5.2. Control and monitoring structures

An epidemiosurveillance network has existed in all countries since the Pan-African Epizootics Control Project (PACE). These networks have been transferred to the missions of the veterinary services.

Epidemiological surveillance of animal diseases is carried out by the Direction des Services Vétérinaires (DSV) of the Member States. In the national systems, samples are sent to the laboratory for analysis.

With the advent of avian influenza in 2006, the FAO Centre for Transboundary Disease Control set up three networks for disease surveillance and control:

- Epidemiosurveillance Network (RESEPI)
- Laboratory Network (RESOLAB)
- Communicators Network (RESOCOM)

2.5.3. Research and training structures

The research institutes collaborate perfectly with the veterinary services:

- Côte d'Ivoire we have the CNRA, the Centre Suisse de Recherche Scientifique, the Institut Pasteur, the Université Félix Houphouët-Boigny
- The National Veterinary Research Institute (NVI) of Vom in Nigeria is the regional support laboratory for ECOWAS region accredited by FAO and AU-IBAR/AU-PANVAC
- Benin has INRAB
- The LANADA laboratories in Côte d'Ivoire is also a research body.

Training structures with a detailed animal health programme exist in all countries of the sub-region. The schools of Dakar in Senegal and Dalaba in Guinea train graduates in veterinary medicine. In Côte d'Ivoire, the Ecole Supérieure d'Agronomie trains agricultural engineers and livestock engineers.

The NANGUI Abrogoua University in Abidjan has opened a course in animal production.

2.5.4. Product suppliers

In West Africa, the services providers and product suppliers are mainly dominated by the private sector which is well organized for veterinary drugs and biological products as well as animal feeds.

2.5.5. Characterization of private structures in the animal health system of countries

2.5.5.1. Veterinary and para-veterinary offices

With the privatisation of income-generating veterinary services, some people with different backgrounds have set up private practice to provide animal care and advisory support to farmers. At the time of the vaccination campaign against epizootic diseases, these private individuals intervene within the framework of the health mandate and carry out the vaccination. These practices are run by veterinary doctors or livestock engineers. They employ animal health workers.

2.5.5.2. Control and monitoring structures

Surveillance in the field is carried out by the Sanitary Defence Group (SDG), these SDGs are run by the farmers themselves. After the avian flu and African swine fever episodes, the SDGs were created for poultry and pig farms among others.

2.5.5.3. Training structures

In addition to the public schools of agronomy, veterinary schools some national animal health institutions offer engineering degrees in animal husbandry and health.

2.5.5.4. Suppliers of products and other services

The input suppliers are the wholesaler-distributors and retailers. Within this group of operators, some import veterinary drugs and rearing equipment, others import day-old chicks and feeds.

3. CRITICAL ANALYSIS OF COORDINATION MECHANISMS

Coordination, collaboration and cooperation are critical in controlling any sanitary events. Indeed, the establishment of multi-sectoral coordination mechanisms at national, regional and continental levels to facilitate collective action, information sharing, capacity enhancement, resource sharing, surveillance and response to disease threats from TADs and zoonoses, emerging and re-emerging pathogens. The Continental Coordination Mechanism namely the Continental Animal Health Platform (CAHP-Africa) led by AU-IBAR will play the major role. The Regional Coordination Mechanisms namely the Regional AH Network within RECs will be strengthened to serve as a regional hub for monitoring of infectious threats, served by a regional virtual emergency response team. Further, these will be linked to a continental hub designed to serve as the Africa Centre for Disease Prevention and Control (ACDC) established within the African Union and also interlinked with other RECs. This set up enable AU-IBAR and partners, donors and member states to work in a coordinated and harmonized manner by sharing information, infrastructure, capacity building, networking, and harmonization of strategy and coordinated emergency response systems. The coordination mechanism will also act as an important lobby for political and material support at national and regional level. Operationalization of the mechanism will involve establishment of technical, sectoral and cross-sectoral coordination forums, supporting networks, expert working groups/committees, and virtual emergency response systems among others, operating in the context of Africa.

3.1. Global perception of the relationship between DSVs and decentralized animal health services

3.1.1. Central Africa

The overview of this mechanism shows the multiplicity and diversity of stakeholders, their role and their responsibility in implementing this mechanism.

The mechanism will have to rely on these stakeholders, taken not as isolated links but as actors interacting with each other in order to create synergies that can ensure the sustainability of this coordination mechanism.

The diversity of concerns at the country level must lead to priorities that will play a key role in implementing this mechanism.

We must also emphasize the concepts of animal welfare which includes several factors to minimize the impact of diseases and the concept of a single health that allows a coherence in the vision embodying the fight against diseases and animal health related threats.

Most countries in the region have not established their own coordination mechanism at the national level but have received support in the form of an outbreak control programme in the bilateral or multilateral framework. These programmes have also helped build countries' capacity in disease diagnosis and surveillance.

In the ECCAS region, countries are engaged with multilateral partners, including: OIE, WHO, UA-BIRA, and FAO. However, THE DSVs, due to the lack of a public-private partnership, are working poorly with private livestock professionals.

In conclusion on the global perception of the relationship between DSVs and decentralized animal health services, veterinary services in most ECCAS countries have been audited and evaluated under the OIE PVS programme.

This situation highlights the poor performance of both structural and organizational DSV. These underperformances prevent Veterinary Services from deploying to decentralized services, leaving room for the development of informal, un competent structures that interfere in the value chain of animal health to do business where state services are not present. In some countries, such as Chad, Cameroon and Central Africa, the informal sector is so organized that it competes against formal structures by boosting the market.

3.1.2. Eastern Africa

Directors of Veterinary Services (DVSs) and decentralised animal health services have collaborative links with various international organisations including FAO, OIE, WHO and African Union Commission (AU) technical institutions such as AU-IBAR, AU-PANVAC and AU-PATTEC. It is important to note that the One Health Approach (OHA) has enormous potential for enhanced collaboration between the DVSs and these bodies. The OHA agenda is particularly promoted by FAO, OIE and WHO.

Within each member state the collaboration between the DVS and animal health professional associations is relatively strong due to the fact that some members of these associations are also within the DVS establishment. The DVSs also links and collaborates with the universities and relevant research organisations.

Decentralised animal health services are invariably under the overall supervision of the CVOs.

3.1.3. Northern Africa

An analysis of countries' responses to the questionnaire on the mapping of animal health actors and their areas of intervention in the North African region identifies the multitude of actors in the animal health sector at both the international, regional and national levels of the public and private sectors. There are very intimate relationships and close collaboration with animal health partners and decentralised services in all countries.

For the public sector, these are other services of the Ministry of Agriculture (forests, financing...), other government departments (health, customs, gendarmerie...), laboratories and training establishments and extension at the national level.

We also note a strong presence of international organizations among the main players in animal health in the region. These are organizations that have sub-regional representations located in the sub-region thus guaranteeing a proximity that facilitates a great involvement of these organizations through regional

projects in the implementation of animal health policies. Some of the most committed organizations include FAO, OIE and WHO.

The strong presence of regional and international partners/donors is noted in regional initiatives and networks, as well as a significant contribution to the financing and operation of regional coordination mechanisms and a significant investment in building the capacity of animal health actors. Among the most committed partners in the region are the AU-IBAR through projects such as VET GOV and Alive2Africa and the European Union through interventions under the EuFMD Action Plan and the BTSF programme, for example.

The private sector is very dynamic and prolific in the region. It is represented in addition to free practice veterinarians (80% of the total population of the region) by PPVs, NGOs and associations of producers and suppliers of veterinary products. The most formalized relationships concern the relationships that bind public veterinary services with free practice veterinarians within the framework of the health mandate.

The second finding concerns the wide variability of areas of intervention ranging from surveillance and disease control to analytical support, to research/training; awareness/communication/vulgarization and capacity building.

3.1.4. Southern Africa

All SADC countries are members of the OIE, FAO and AU-IBAR although some of them also belong to other development partners like the IAEA and to their respective regional economic groupings like SADC. The global one-health initiative has resulted in the participation of WHO in most of the global one-health programs including the Anticicrobial Resistance and Use project and other projects addressing the control and prevention of zoonotic diseases. Some of the global projects include the OIE coordinated PVS assessment of veterinary services and the AU-IBAR coordinated Veterinary Governance project in the SADC region.

The SADC regional livestock health strategy resulted in the establishment of the SADC Livestock Technical committee (LTC) composed of animal health and production country directors. The LTC has functional Diagnostic and Epidemiology subcommittees which are instrumental in the production and implementation of regional animal health strategies and policies being implemented at country level at different stages in the SADC region.

In order to implement regional animal health policies and strategies, SADC member states carry out coordination mechanisms at national levels for disease surveillance and reporting, laboratory diagnosis, deworming, dipping and vaccination programs for priority transboundary and zoonotic diseases. Dipping, especially plunge dipping is common and widely used in the region for tick control in southern Africa though some other methods like pour-on and spraying are also used. Dip tanks and cattle race handling facilities are therefore widespread in the member states for cattle dipping and vaccination programs for FMD and other priority TADs and zoonoses.

The other coordination mechanism in SADC countries is the harmonisation and standardization of strategies and contingency plans for prioritised regional transboundary and zoonotic diseases. This harmonization and production of SADC disease surveillance and control strategies and policies is key for ensuring that all SADC member states use the same documents for implementing the diseases strategy action plans resulting in buy-in and recognition of outcomes of surveillance and control activities by member states.

The diagnostic and surveillance standard operating procedures (SOPs) and protocols also need to be harmonised and standardized in line with the OIE standards to ensure consistence and reliability of results both at national and regional levels. Some of the laboratory diagnostic SOPs include those of FMD, Rabies, CBPP, HPAI Newcastle and ASF.

3.1.5. Western Africa

Directors of Veterinary Services (DVSs) and decentralised animal health services have collaborative links with various international organisations including FAO, OIE, WHO and African Union Commission (AU) technical institutions such as AU-IBAR, AU-PANVAC and AU-PATTEC and NGOs such as Brooke Hospitals for Animals, World Horse Welfare (WHW), Donkey Sanctuary among others. It is important to note that the One Health Approach (OHA) has enormous potential for enhanced collaboration between the DVSs and these bodies. The OHA agenda is particularly promoted by FAO, OIE and WHO.

Within each member state the collaboration between the DVS and animal health professional associations is relatively strong due to the fact that some members of these associations are also within the DVS establishment. The DVSs also link and collaborates with the universities and relevant research organisations. Decentralised animal health services are invariably under the overall supervision of the CVOs.

At regional level, West Africa has a functional Regional Animal Health Center (RAHC) under ECOWAS Commission coordinating animal health and disease surveillance control, diagnosis initiative.

3.2. Global perception of coordination mechanisms for disease control and surveillance

3.2.1. Central Africa

Overview of coordination mechanism for disease control and surveillance in Central Africa

Table 6: An overview of the various stakeholders in the animal health coordination mechanism

Level of intervention	Parties Identified	Status	Responsibility	Comments
International	FAO	International Technical Partner	Technical support and expertise	Technical coaching: capacity building
	Goose	International Normative Organization	Technical support and expertise/standards	Technical coaching: capacity building
	WHO	Prescriptive organization	Technical support/expertise	Technical supervision
	EU	TFP	Fundraiser	Program funding/ capacity building
Continental	UA-BIRA Commission Agriculture	Continental organization	Promoting regional policies for the continent's development	Capacity building/ governance
Subregional	CEEAC-CEMAC-CEBEVIRHA-CRSA	Regional organization	Interface role of the region	Harmonizing policies and initiatives at the sub-regional level
State actors				
National	Sectoral ministries, DSV, Laboratory, training structures, Research Centre, Surveillance network	Public	Political development Coordination Risk assessment Diagnostic establishment	Sector promotion
	OP, Order, parapublic structures	Private	Private/public	Statutory organization
Non-state actors				
	Suppliers/distributors of inputs, financing structures	Private	Private	Intra distribution Funding for control operations
	Traders, importers, licensed sellers	Private	Private	Sales- supplies
	Breeders, herd owners, butchers	Private	Private	Industry operators
	Informal sector		Private	
Other basics				
	The herd	Cash, numbers, configuration		Cash (bov, ov, cap, pig, poultry, fish, beekeeping, aquaculture) Pets and leisure Animals for research Game and unconventional species Wildlife
	Priority diseases	Endemic status, epizootic status		Immediate statement Mandatory reporting.
	Other things to consider	recycling/destroying packaging; destruction of expired products		

The overview of this mechanism shows the multiplicity and diversity of stakeholders, their role and their responsibility in implementing this mechanism.

The mechanism will have to rely on these stakeholders, taken not as isolated links but as actors interacting with each other in order to create synergies that can ensure the sustainability of this coordination mechanism.

The diversity of concerns at the country level must lead to priorities that will play a key role in implementing this mechanism.

We must also emphasize the concepts of animal welfare which includes several factors to minimize the impact of diseases and the concept of a single health that allows a coherence in the vision embodying the fight against diseases and animal health related threats.

It should be noted that most countries in the region have not established their own coordination mechanism at the national level but have received support in the form of an outbreak control programme in the bilateral or multilateral framework. These programmes have also helped build countries' capacity in disease diagnosis and surveillance. FAO, because of its expertise, has invested a great deal in supporting these initiatives. The stakeholders in this mechanism are not necessarily part of the actor platforms.

In the CEEAC region, countries are engaged with multilateral partners, including: OIE, WHO, UA-BIRA, and FAO. However, THE DSVs, due to the lack of a public-private partnership, are working poorly with private livestock professionals.

In conclusion on the global perception of the relationship between DSVs and decentralized animal health services, it is important to note that veterinary services in most CEEAC countries have been audited and evaluated under the OIE PVS programme.

The findings of these evaluations highlighted the poor performance of both structural and organizational DSV. These underperformances prevent Veterinary Services from deploying to decentralized services, leaving room for the development of informal, un competent structures that interfere in the value chain of animal health to do business where state services are not present. In some countries, such as Chad, Cameroon and Central Africa, the informal sector is so organized that it competes against formal structures by boosting the market.

3.2.2. Eastern Africa

Table 7: Overview of animal health actors in East Africa

Actor	Category	Key areas of intervention
Chief Veterinary Officers (National Government Veterinary Service)	Public Sector lead player	Provision of legal and policy guidelines; disease control and surveillance; pest control, veterinary public health, coordination of various actors in the country; disease reporting to OIE and AU-IBAR;
Vaccines production Institutes	Public or para-public	Production and supply of vaccines
Veterinary Regulatory bodies (e.g. Veterinary Council of Tanzania)	para-public	Quality control of animal health services (sets ethical standards through registration and licensing of animal health private practitioners)
Genetics Resource Centres (e.g. Kenya Animal Genetic Resources Centre)	para-public	Production and quality control of semen; distribution of semen
Training Institutions including Universities and middle level colleges	Para-public (government supported) and private	Training of animal health service providers at various levels (certificate, diploma (middle level colleges) and degree levels, post graduate training including Masters and PhD Programmes (Universities)
Research Institutions (e.g. KALRO of Kenya)	Para-public	Research activities; packaging and dissemination of research findings and technologies
Veterinary Medicines Board	para-public (regulatory body)	Registration, approvals and control of veterinary medicines –
Veterinary professional and para-professional Associations	private	Support and collaborate with Chief Veterinary Officer in disease control and surveillance; animal welfare advocacy; participate in animal health legal and policy formulation processes; provide continuous professional development training with the approval of Regulatory bodies
Private Animal Health Service Providers, e.v Veterinarians and para-veterinarians	Private	Clinical services,; artificial insemination service; disease reporting; supply of animal health inputs; advisory service (carried out in the course of other interventions)
Non-Governmental Organizations, Community-based Organizations and Faith-based Organizations	Non-profit making Organizations	Short-term livestock based programmes (emergency and non-emergency programmes); facilitate capacity building for CVOs, and facilitate distribution of inputs.
Pharmaceutical firms	Private	Manufacture and distribution of veterinary drugs /medicines
Pharmacies and Agro-Vets	Private enterprises	Supply of animal health inputs including drugs, tools, materials and equipment
Dairy cooperative societies and Unions	Private	Provision of clinical and artificial insemination services to members; supply of inputs
Livestock keepers	Private	Supply of inputs; animal medication, disease reporting , and animal welfare in general

Actor	Category	Key areas of intervention
International and Regional Bodies		
International Livestock Research Institute (ILRI)	International Research Body	Research in animal diseases
ICIFE	Research	Research in animal disease transmitting insects.
World Organization for Animal Health (OIE) Regional Office	International Body mandated to set animal health and welfare standards	Sets animal health and welfare standards; Technical support to member states in adopting animal health and welfare standards; provision of data and information related to animal health and welfare standards; and facilitates member states to acquire quality vaccines.
Food and Agriculture Organization of the United Nations (FAO)	UN Body	Technical support in animal disease control; Livestock based interventions through programmes; Acquisition of quality vaccines; Facilitates capacity building in animal health
World Health Organisation (WHO)	UN Body	Control of zoonotic diseases; one health approach
IGAD - ICPALD	Regional body	Development of regional animal health and welfare policies, strategies and systems with a view to facilitating trade in livestock and livestock products; cross border coordination and harmonization of policies. Disease control and surveillance.
EAC and COMESA	Regional Economic Communities	Facilitates approval and endorsement of policies, strategies and mutual recognition agreements by respective member States
AU-IBAR	Continental body – established and owned by Member States	Has the mandate of member states to improve animal resources; Animal health interventions include capacity building (especially in technology); facilitate acquisition of animal health inputs; facilitate development of national policies, strategies, systems and disease testing standards and procedures; Support member states in disease control and surveillance;
Development partners and Agencies (e.g. EU, USAID)	donors	Funding through various actors and programmes

Coordination at regional or sub regional level:

At this level international and regional bodies together with the respective CVOs play a major role in the coordination of disease control and surveillance.

- FAO, AU-IBAR, AU-PATTEC & AU-PANVAC, IGAD/ICPALD and EAC are the main players in coordination.
- Coordination mechanisms put in place include :
 - Cross border harmonisation meetings.
 - Mutual recognition agreements (MRAs) on veterinary professional services.
 - Information sharing platforms such as the eastern Africa regional animal health network (RAHN).
- Other coordination tools are:

- Memorandum of understanding (MoUs) – between two or more neighbouring member states.
- Animal resources information system (ARIS) – every member state submits monthly reports to AU-IBAR that provides feedback during its coordination meeting.
- Annual Chief Veterinary Officers (CVOs) meeting facilitated by AU-IBAR on African common position in international animal health standards setting.
- Regional animal health policies and strategies.

Some of the tools are not direct coordination mechanisms but facilitate better understanding of disease control and surveillance situations in different countries.

Coordination at national level:

The CVOs are the main coordinators at this level. They link and coordinate disease control and surveillance activities throughout their countries. However, coordination linkages are weak especially with the private sector, NGOs / CBOs / FBOs and farmers organisations.

3.2.3. Northern Africa

All countries have coordinated mechanisms for various areas of intervention, the name of which may change depending on the country

(Commission/Network/Committee/platform...) but which are based on the following mechanisms:

- Mechanism for the epidemiology of animal diseases, facilitated by the DSV and linking the central services to regional representatives and laboratories
- Mechanism for diagnostic/research laboratories led by the national reference laboratory
- Wildlife Health Monitoring Mechanisms, led by the Forestry Department and including hunters, NGOs and veterinary services
- Mechanism to control zoonoses, led by the services of the Ministry of Health.

We note a variety of coordination mechanisms that cover various areas related to the animal health sector, but there is no consultation or harmonization between these different mechanisms.

3.2.4. Southern Africa

The OIE, FAO, IAEA and AU-IBAR are the major global partners in supporting coordination mechanisms for disease control and surveillance at continental, regional and national levels. The Directors of Veterinary Services in the 5 SADC countries in this survey rated the following interventions to improve the impacts of effective coordination of disease control and surveillance at national, regional, continental and global levels: epidemiological disease surveillance–33%, regulation and information–20%, participation of animal health veterinarians-16% and achievements on animal vaccinations-29%. It is due to strong collaboration and communication mechanisms between government animal health institutions, parastatals and the private sector that effective coordination mechanisms for national, regional and continental disease control and surveillance can be achieved.

In the SADC intervention area, the impact of epidemiological disease surveillance is indicated by records of clinical examinations and animal health data collected at dip tanks, abattoirs and other slaughterhouses,

at cattle auction yards, during sampling for laboratory disease screening and confirmation at the respective national and regional reference laboratories. Impact indicators for participation of animal health veterinarians include reporting of notifiable TADs and zoonotic diseases to national veterinary authorities, establishment of national veterinary laboratory networks in Zimbabwe and in other SADC countries, collaboration with national university veterinary faculties in animal health research and training. Objectively verifiable indicators for regulation and information include reviewing of veterinary legislative documents which include national animal health acts and their respective statutory instruments and compliance to international standards and regulations for better trade in animals and animal products.

Evidence or impact indicators of national and regional achievements in implementing animal vaccinations in Eswatini, Botswana, Namibia and S. Africa include being able to export their animals and animal products regionally and internationally. Zimbabwe is currently vaccinating along national parks and conservencies with bullafo and raising movement barrier fences along the Gonarezhou national park to reduce or stop buffalo-cattle contacts. African swine fever outbreaks were effectively controlled in Zimbabwe, S. Africa and in Namibia through vaccinations and Newcastle is being controlled in the SADC region using the I2 vaccine. CBPP was eradicated in Botswana and is under control in Zambia and Namibia through effective vaccination programs.

The use of harmonised and OIE standardised SOPs for disease surveillance and laboratory testing at both regional and national levels together with observing and being compliance to international standards resulted in accessing national, regional and international markets for animals and animal products.

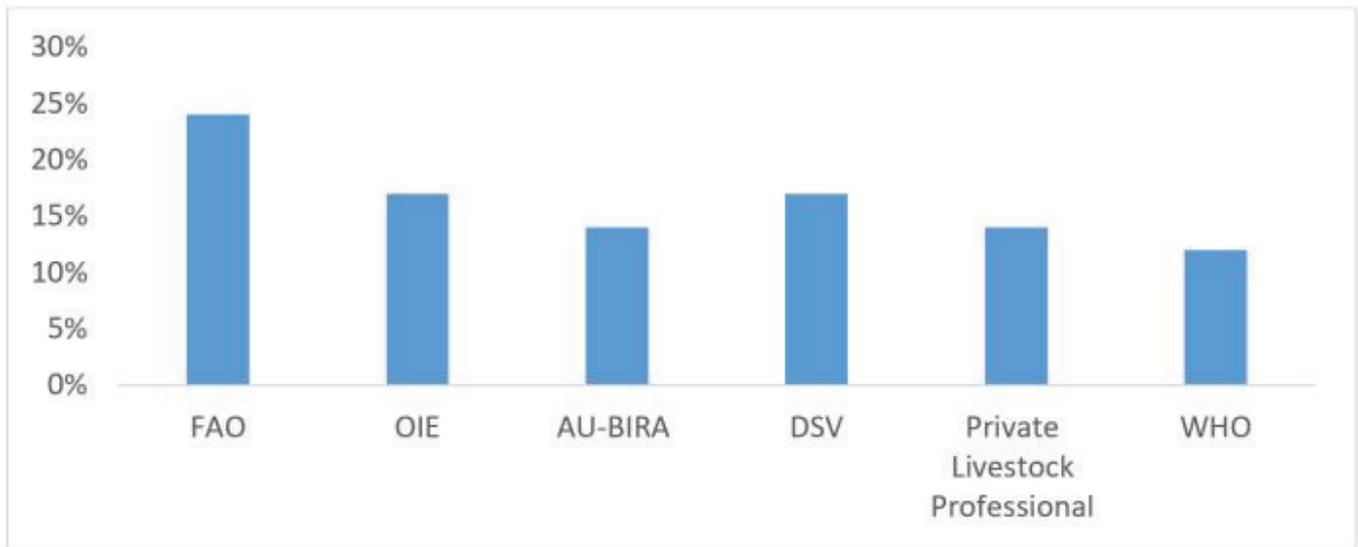
3.2.5. Western Africa

- Support the national focal point for advocacy and lobbying of institutions
- Strengthen regional coordinators
- Organise a circular mission to the RECs to remind them of the objectives and missions of the platforms
- Animal disease surveillance is coordinated by the central DSV.A reporting mechanism allows information to be passed on to the DSV, which then launches investigation operations.

3.3. Result of survey

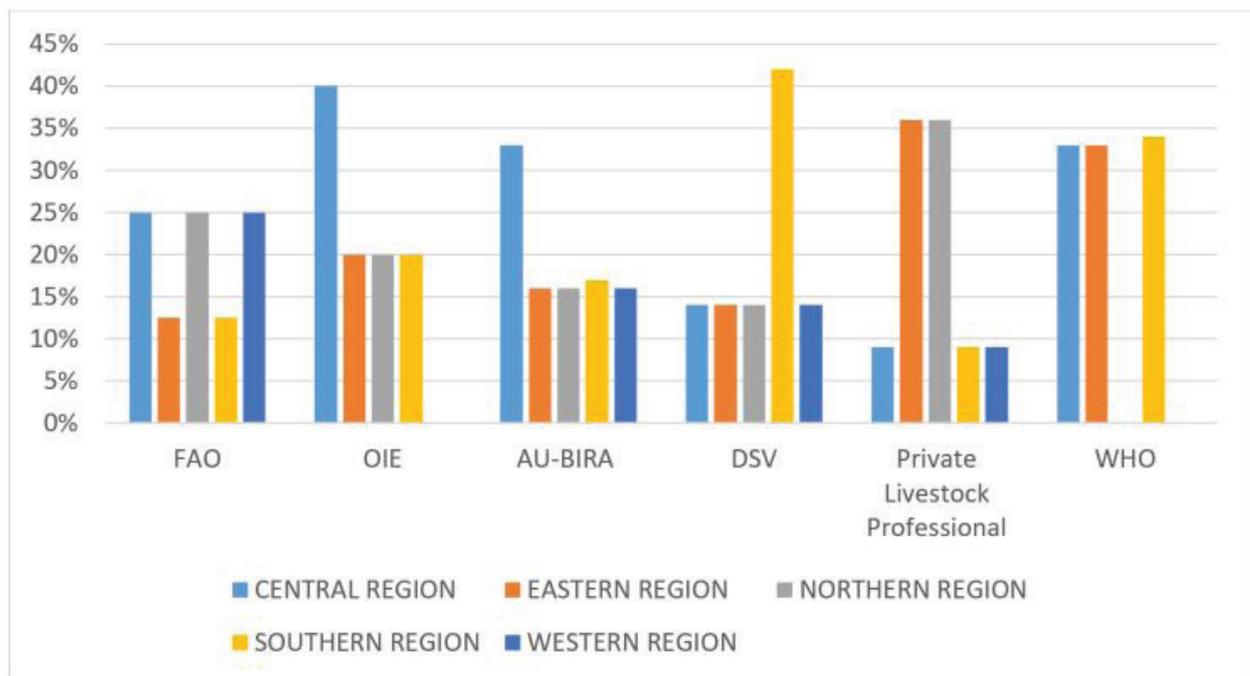
3.3.1. Stakeholders in multilateral programmes with DVSs

Most countries in the region have not established their own coordination mechanism at the national level but have received support in the form of an outbreak control programme in the bilateral or multilateral framework. These programmes have also helped build countries' capacity in disease diagnosis and surveillance. FAO, because of its expertise, has invested a great deal in supporting these initiatives. The stakeholders in this mechanism are not necessarily part of the actor platform.



Graph 1: Stakeholders in multilateral programmes with DVSs.

3.3.2. Relevant actors at the regional level



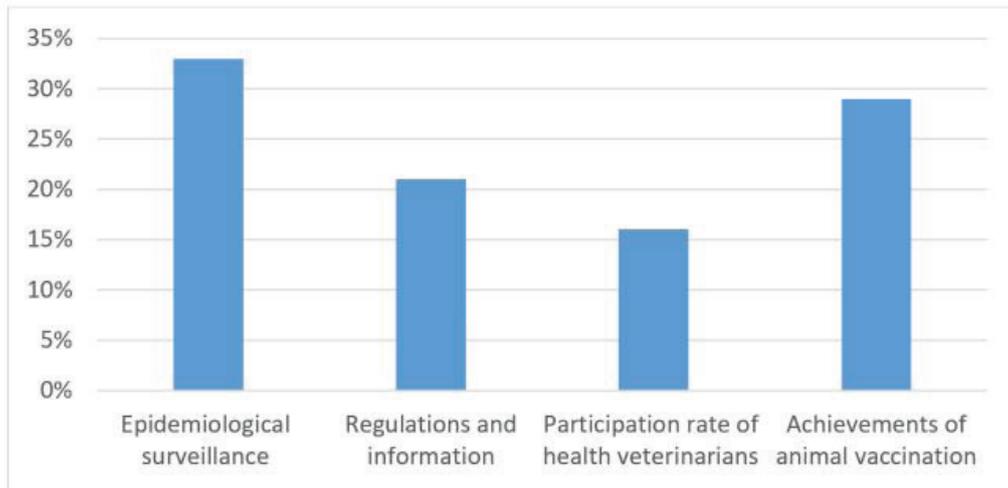
Graph 2: The relevant actors at the regional level.

All African countries are engaged with multilateral partners, including: OIE, WHO, AU-IBAR and FAO. However, DSVs, due to the lack of a public-private partnership, are working poorly with private livestock professionals.

Overall, there is no good coordination mechanism for disease control and surveillance at the sub-regional level. However, the overview of the mechanism mentioned above shows that basic elements are brought together and need to be organized for the establishment of a mechanism. It is essential that public and private stakeholders clearly define its scope of action and functions.

3.3.3. Added value of creating a mechanism at the national level

Responses to the survey indicate that the mechanism is focused on epidemiological surveillance and continuation of immunization programs. These choices are primarily targeted at disease-stricking herds due to the failure of veterinary services. They can serve as centres of interest to strengthen synergies between players.

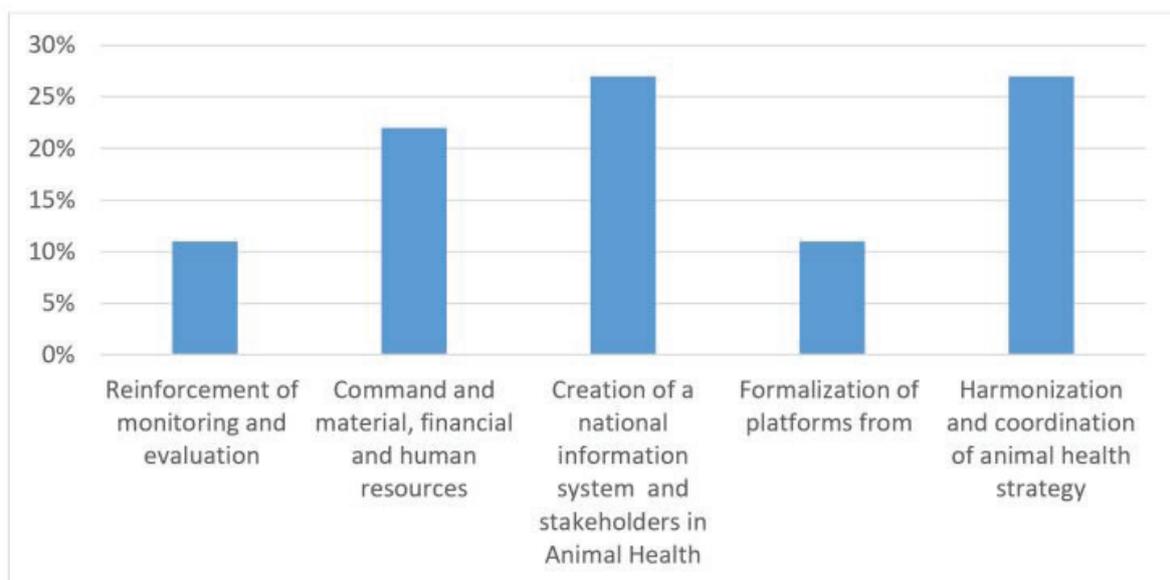


Graph 3: Fields of action of the coordination mechanism.

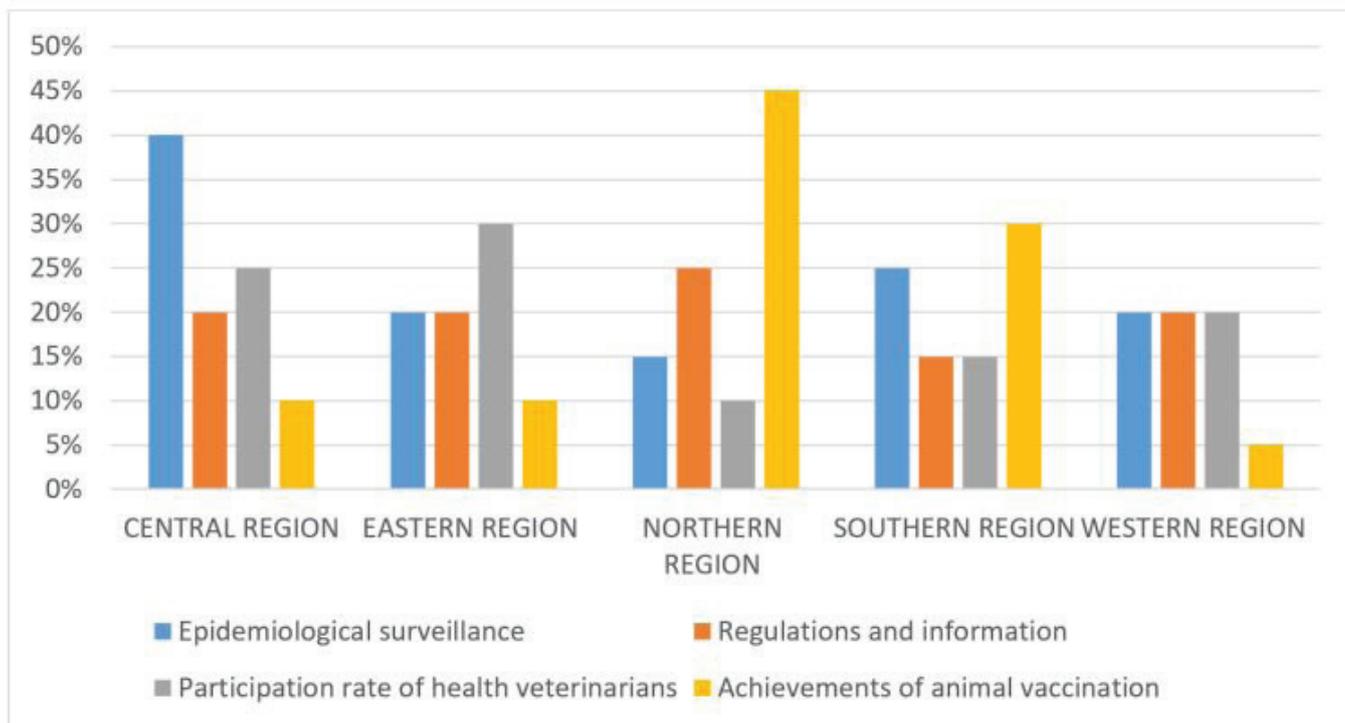
3.3.4. Perception of priorities for the coordination mechanism

3 priorities are shown:

- Creation of a national information system and the target beneficiaries of the mechanism ;
- Harmonization and coordination of animal health strategies.
- Funding and human and material resources ;



Graph 4: Perception of priorities for the coordination mechanism



Graph 5: Perception of the mechanism's priorities at the regional level.

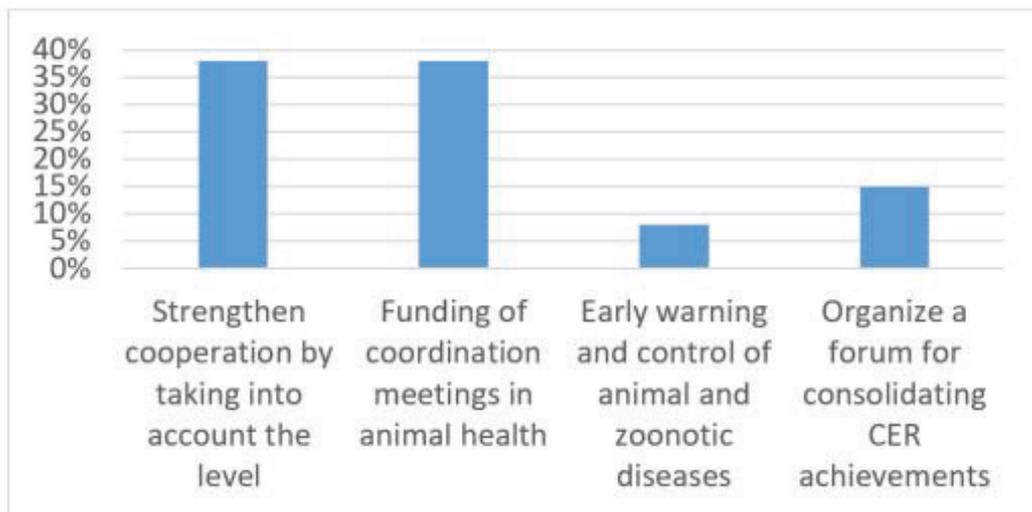
At the regional level, the priorities are not the same.

- For the central region, the mechanism should focus on epidemiological surveillance in order to better define the health status of the region.
- In Eastern region, priorities are participation rate of health veterinarians, epidemiological surveillance and Regulations/ informations.
- In Northern region, they are focused on regulations and achievement of animal vaccination.
- In Southern region, epidemiological surveillance and achievement of animal vaccination.
- In western region, priorities are in achievement of animal vaccination, regulation and informations, participation rate of health veterinarians.

3.3.5. Policy directions for better coordination of animal health stakeholders

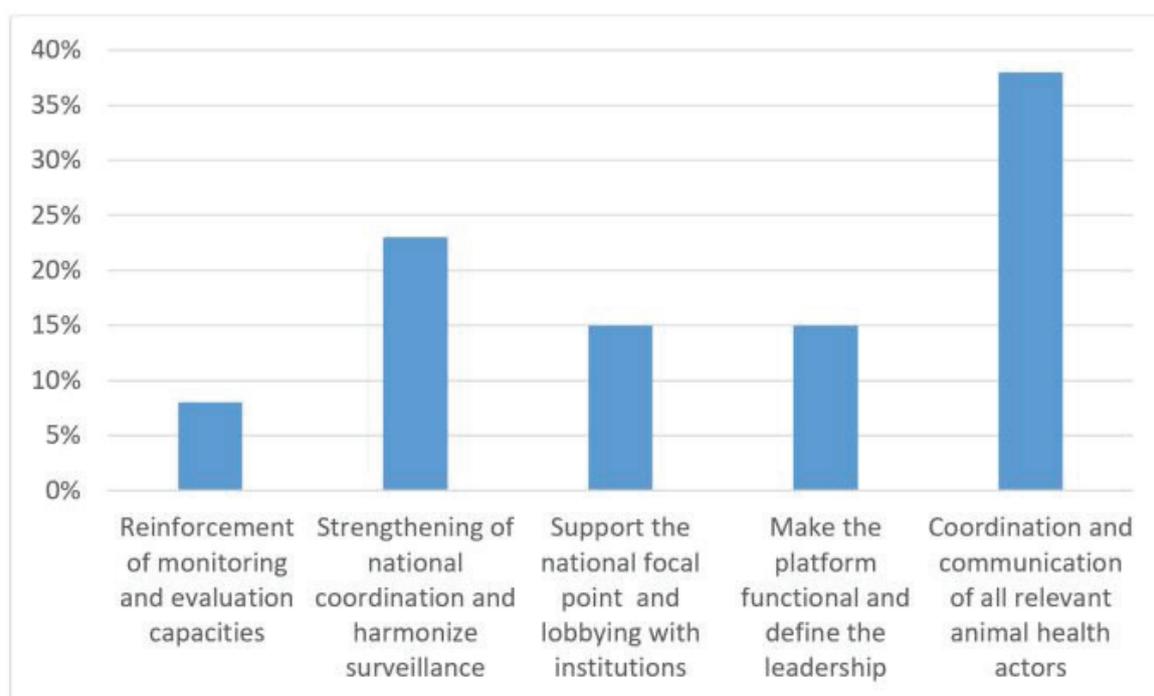
3.3.5.1. At national level

The primary function of the national coordination mechanism is to communicate and exchange information in the field of animal health with a wide range of public and private sector stakeholders. In this regard, the creation of networks and tools that help increase the flow of information, not only between relevant government institutions, but also between public and private sector stakeholders, should be addressed. The information in question should include not only animal health issues, but also information on the animal health value chain, and raise awareness of environmental issues that include factors that promote the spread of diseases.



Graph 6: Function of the coordination mechanism at the national level

The second priority is to strengthen coordination at the national level and harmonize surveillance. Also, platform is useful.



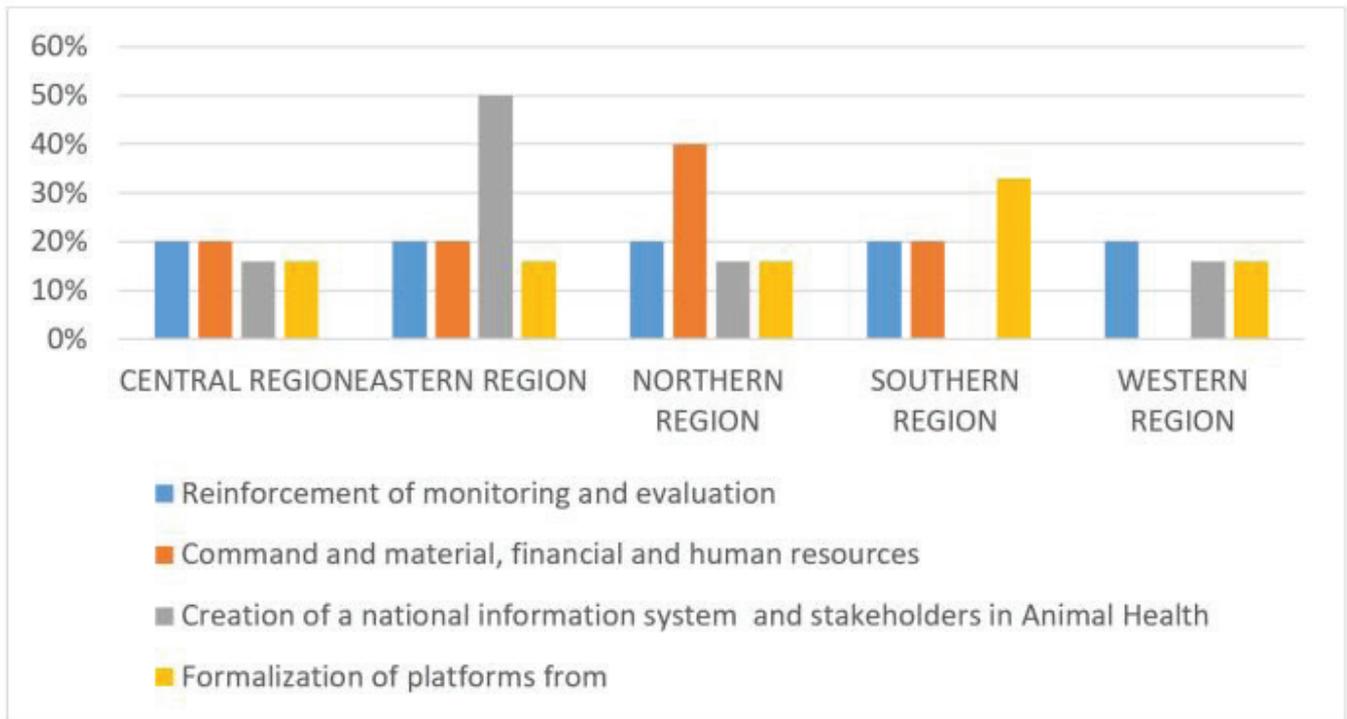
Graph 7: Priority in terms of political orientation at the national level.

3.3.5.2. At the regional level

At the regional level, 3 priorities emerge:

- • Creation of a national information system and stakeholders in Animal Health;
- • Getting material; financial and human resources,
- • Formalize platforms

Indeed, the establishment and operation of the coordination mechanism requires sufficient funding even at the national level. A budget must be provided to ensure the sustainability of the mechanism.

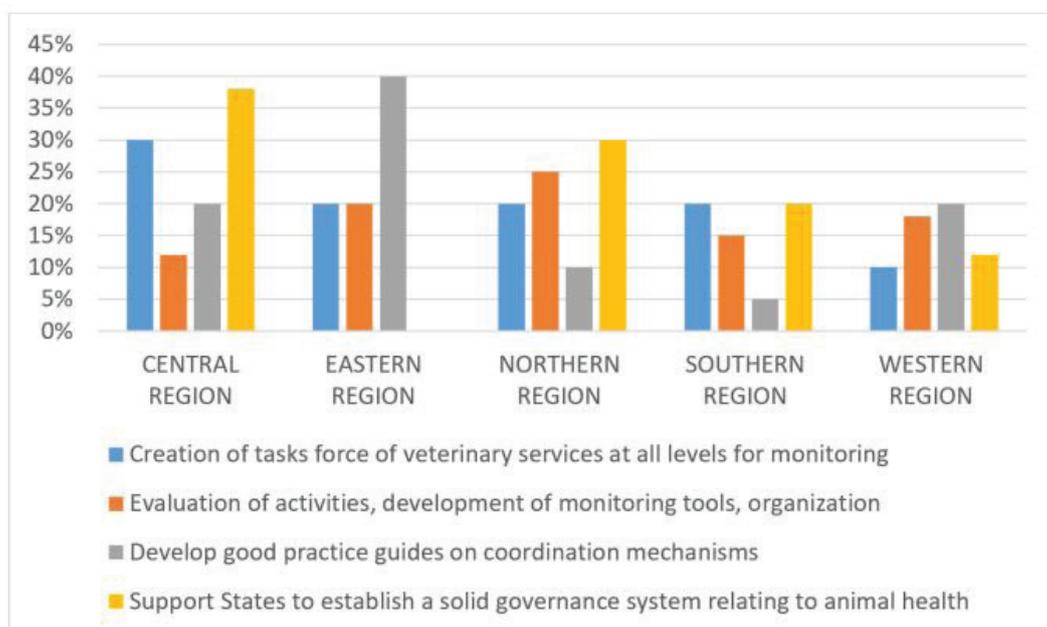


Graph 8: Orientations at the level of each REC

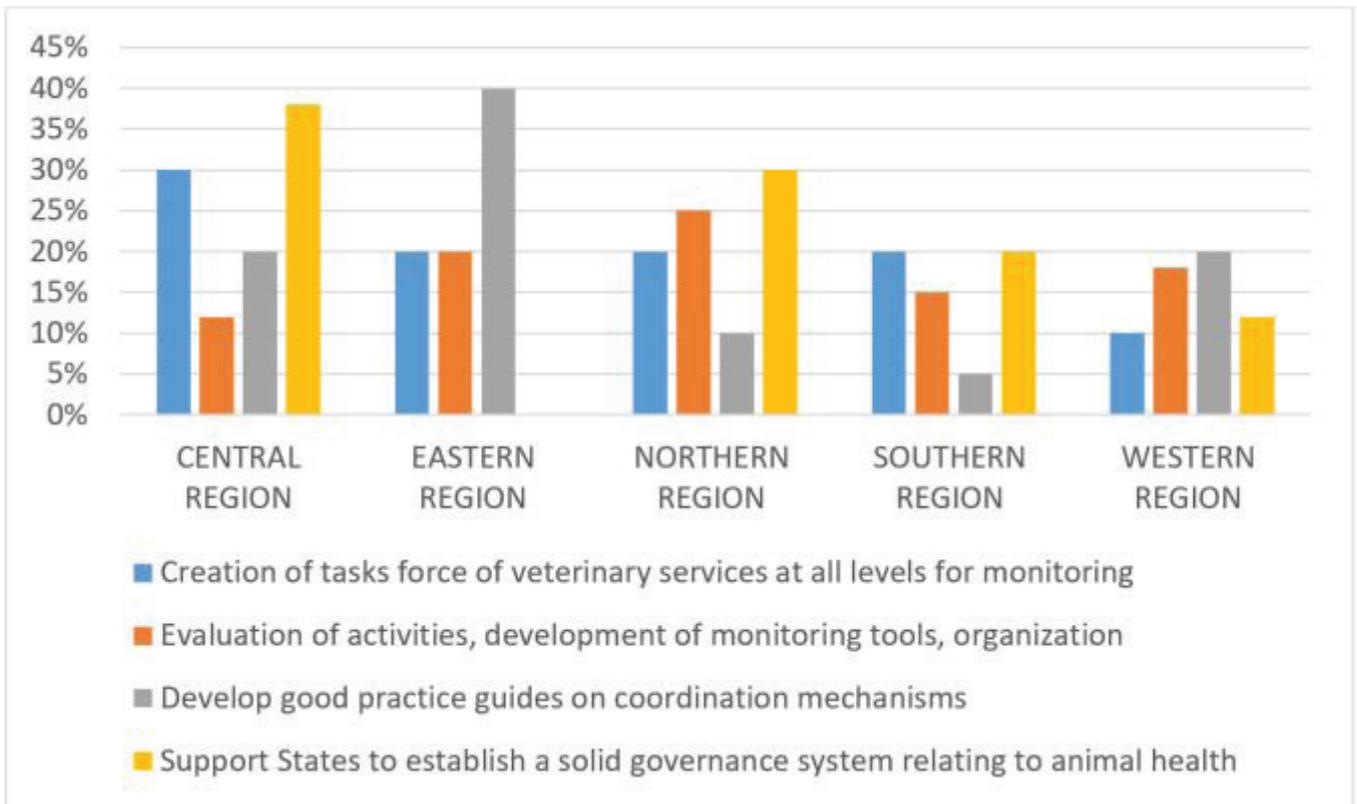
Priorities in terms of policy directions include:

- State support to establish a sustainable system for animal health governance and hence veterinary services;
- Creation of veterinary services taskforces at all levels to ensure follow-up
- Development of good practices in the coordination mechanism.

Veterinary services are a global public good and existence of global and regional structures is essential to ensure the coordination of policies at other levels, but any failure at the national or even local level will expose the rest of the regional and global community. This is why quality support policies for National Veterinary Services are essential to ensure that animal health improves around the world.



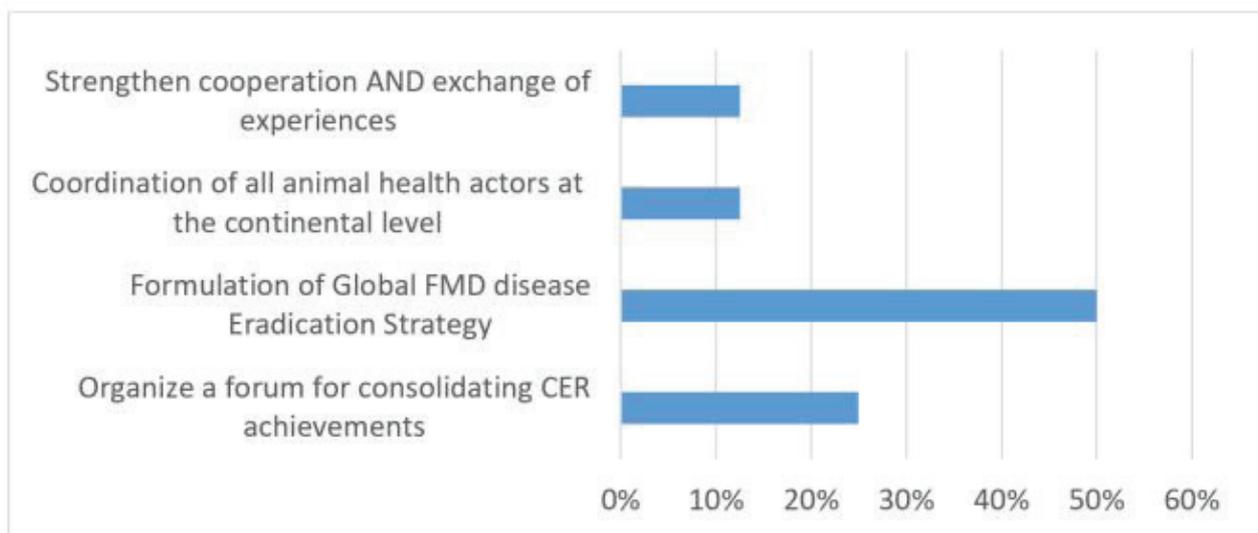
Graph 9: Perceived the mechanism's priorities at the level of each REC.



Graph 10: Regional political orientations

In addition to the priorities mentioned above, the political orientation of RECs should focus in strengthen cooperation with countries of the region, funding for coordination meetings on animal health, also early warning and the control of diseases and zoonoses and organisation of forum for consolidating REC achievements.

3.3.5.3. At continental level



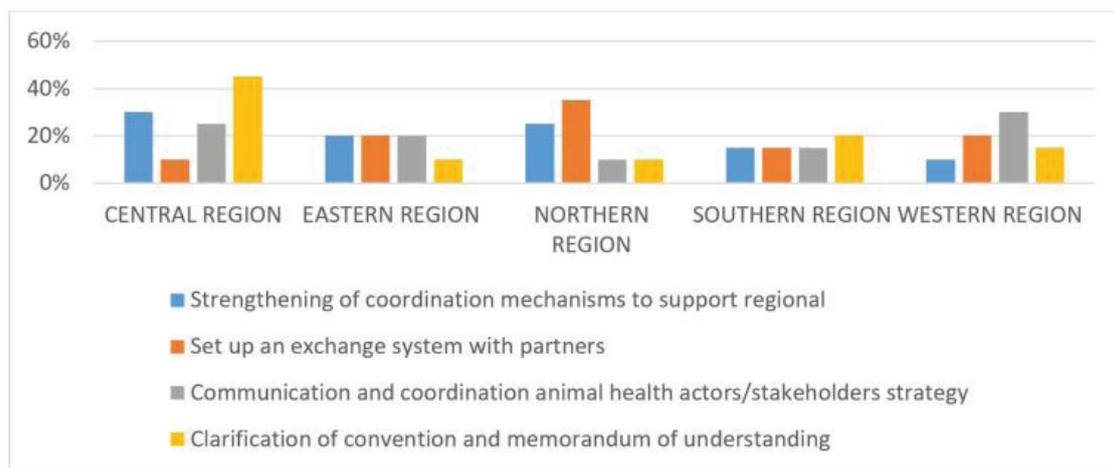
Graph 11: Mechanism functions

At the continental level, the focus must be in Formulation of the FMD disease eradication strategy and consolidating initiatives and achievements at the RECs level.

3.3.5.4. With partners

With the partners, the mandate will focused in

- Strengthening the coordination mechanism to support the RECs;
- Communication and coordination strategy for animal health target actors/groups.



Graph 12: functions of the mechanism with all partners at the REC level

In the area, these functions will be clarified as part of a partnership agreement or in a memorandum of understanding.

4. SWOT ANALYSIS

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Existence of animal health service delivery systems in all member states. • Existence in all the countries of a Chief Veterinary Officer (CVO) who is the permanent OIE Delegate. • Support of international and regional organisations and institutions that provide technical guidance, coordination of regional programmes, and facilitation of collaboration amongst the member states and funding among other interventions. • Existence of RECs that facilitate harmonisation and cooperation amongst the member states in animal health delivery thus facilitation access to livestock and livestock products markets. • Strategy of Animal Health • AHSA Implementation programm 	<ul style="list-style-type: none"> • Lack of sustainable funding, as well as adequate human resources at RECs and national levels for effective operationalization of AHSA; • Dependence on external funding or projects; • Poor implementation of animal health policies & strategies. • Poor enforcement of legislation. • Weak animal health service delivery • Weak, and to some extent ineffective animal disease surveillance systems – inadequate data collection, weak databases and poor disease reporting. • Inadequate animal disease diagnostic tools, equipment and facilities especially in the field. In particular diagnostic laboratories are lacking and/or are poorly equipped. • As a result of inadequate surveillance early disease detection and responses are jeopardized. • Accredited animal health / veterinary diagnostic laboratories are not within easy reach. • Participation of the private sector is limited (unfavourable policy and legal environments, lack of private/public partnership framework, and lack of incentives for the private sector to collaborate). • Weak linkage between private and public animal health service providers in terms of referral system.
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Develop Platforms with big impact in Livestock in Africa • Development of Livestock in Africa (increasing budget allocated in national budgets) • Improvement of Production and Productivity • Marketing opportunities with development of value chain 	<ul style="list-style-type: none"> • Public authorities' disinterest in Livestock policy • Change at country level with the discovery or exploitation of natural resources • Herd decimated due to conflicts

5. SYNTHESIS OF AH ACTORS AND THEIR INTERVENTION AREAS IN AFRICA

The situation can be resume in the table below.

Table 8: Overview of animal health actors and their intervention areas in Africa

Actor	Category	Key areas of intervention
Chief Veterinary Officers (National Government Veterinary Service)	Public Sector lead player	Provision of legal and policy guidelines; disease control and surveillance; pest control, veterinary public health, coordination of various actors in the country; disease reporting to OIE and AU-IBAR;
Vaccines production Institutes	Public or para-public	Production and supply of vaccines
Veterinary Regulatory bodies (e.g. Veterinary Council of Tanzania)	Para-public	Quality control of animal health services (sets ethical standards through registration and licensing of animal health private practitioners)
Genetics Resource Centres (e.g. Kenya Animal Genetic Resources Centre)	Para-public	Production and quality control of semen; distribution of semen
Training Institutions including Universities and middle level colleges	Para-public (government supported) and private	Training of animal health service providers at various levels (certificate, diploma (middle level colleges) and degree levels, post graduate training including Masters and PhD Programmes (Universities)
Research Institutions	Para-public	Research activities; packaging and dissemination of research findings and technologies
Veterinary Medicines Board	Para-public (regulatory body)	Registration, approvals and control of veterinary medicines –
Veterinary professional and para-professional Associations	Private	Support and collaborate with Chief Veterinary Officer in disease control and surveillance; animal welfare advocacy; participate in animal health legal and policy formulation processes; provide continuous professional development training with the approval of Regulatory bodies

Actor	Category	Key areas of intervention
Private Animal Health Service Providers, e.v Veterinarians and para-veterinarians	Private	Clinical services,; artificial insemination service; disease reporting; supply of animal health inputs; advisory service (carried out in the course of other interventions)
Non-Governmental Organizations, Community-based Organizations and Faith-based Organizations	Non-profit making Organizations	Short-term livestock based programmes (emergency and non-emergency programmes); facilitate capacity building for CVOs, and facilitate distribution of inputs.
Pharmaceutical firms	Private	Manufacture and distribution of veterinary drugs /medicines
Pharmacies and Agro-Vets	Private enterprises	Supply of animal health inputs including drugs, tools, materials and equipment
Dairy cooperative societies and Unions	Private	Provision of clinical and artificial insemination services to members; supply of inputs
Livestock keepers	Private	Supply of inputs; animal medication, disease reporting , and animal welfare in general
SME and Companies Livestock Production and Transformation	Private	Supply foodstuffs and subproducts
International and Regional Bodies		
International Livestock Research Institute (ILRI)	International Research Body	Research in animal diseases
World Organization for Animal Health (OIE) Regional Office	International Body mandated to set animal health and welfare standards	Sets animal health and welfare standards; Technical support to member states in adopting animal health and welfare standards; provision of data and information related to animal health and welfare standards; and facilitates member states to acquire quality vaccines.
Food and Agriculture Organization of the United Nations (FAO)	UN Body	Technical support in animal disease control; Livestock based interventions through programmes; Acquisition of quality vaccines; Facilitates capacity building in animal health

Actor	Category	Key areas of intervention
World Health Organisation (WHO)	UN Body	Control of zoonotic diseases; one health approach
IGAD - ICPALD	Regional body	Development of regional animal health and welfare policies, strategies and systems with a view to facilitating trade in livestock and livestock products; cross border coordination and harmonization of policies. Disease control and surveillance.
EAC, COMESA, UMA, ECCAS, WAEMU, ECOWAS, SADC, CENSAD	Regional Economic Communities	Facilitates approval and endorsement of policies, strategies and mutual recognition agreements by respective member States
AU-IBAR	Continental body – established and owned by Member States	Has the mandate of member states to improve animal resources; Animal health interventions include capacity building (especially in technology); facilitate acquisition of animal health inputs; facilitate development of national policies, strategies, systems and disease testing standards and procedures; Support member states in disease control and surveillance;
PANVAC	Continental body – established and owned by Member States	Testing compliance of African vaccines with standards
Development partners and Agencies (e.g. EU, USAID)	Donors	Funding through various actors and programmes

6. KEY RECOMMENDATIONS

6.1. *Priority actions for harmonization and coordination of national animal health stakeholders/stakeholders for better impact*

The AU-IBAR developed the 2019-2035 Africa Animal Health Strategy (AHSA) in accordance with the 2015-2035 Africa Livestock Development Strategy (LiDeSA) and approved by the AU Summit in January 2020. AHSA is the framework for building a sustainable animal health system that meets global standards. Aware of the need for a more structured continental mechanism to engage stakeholders, the African Union Commission, through the AU-BIRA, has created the Continental Platform for Animal Health Actors (CAHP) in Africa. CAHP-Africa is therefore the governing body of AHSA and has a steering group (GG) that serves as an advisory group for CAHP-Africa.

In the North African region, a multitude factors are involved in animal health issues in Africa according to mechanisms specific to each country and each area of intervention. On the other hand, the region has not yet developed its regional animal health strategy or identified the regional platform of animal health actors.

In this context, it is important and wise to proceed in 2 stages, restart the process of developing the regional strategy and identify priority actions for the establishment of robust mechanisms for consultation and build the necessary synergy and complementarity and make recommendations for better coordination of animal health stakeholders.

6.1.1. At the country level

Responses of the Directors of Veterinary Services in AU-MSs rated the following priority actions for harmonization of animal health stakeholders as follows: reinforcement of monitoring and evaluation including enforcement of compliance at 15%, availing material, financial and human resources for harmonization and coordination – 22%, creation of national animal health information systems – 27% and harmonization and coordination of animal health strategies – 27%. Some of the capacity support needs include human resource and leadership training, budget support for equipment and consumables, technology transfer and adoption. Need to support research in animal health and marketing.

There is need to continue providing technical and financial support to utilize the animal health platforms for better impact and sustainability, enhance new and more efficient technologies and advocate for governments and the private sector to include animal health actors/stakeholder platform activities in their budgets, and strategic programs.

1. Facilitate evaluation / review of existing animal health coordination mechanisms at all levels with a view to strengthening them.
 - It is important that coordination mechanism should be an integral part of the institutional arrangements.
2. Facilitate establishment of a national harmonisation and coordination team:
 - Set criteria for membership of the team.
 - Identify eligible institutions /members of the team.

- Develop terms of reference for the team.
- Train members on their roles and responsibilities.
- Develop coordination tools including operational guidelines and monitoring tools.
- Develop a national animal health strategy in line with the African Animal Health Strategy (AHSA) and adopt a collaborative and consultative approach and involve all stakeholders in the livestock sector as well as international organizations and research institutions.
- Creating an institutional framework in the form of a national platform of animal health actors and stakeholders to coordinate the efforts, complementarity and synergy of action of the various partners and stakeholders involved in animal health issues.
- Make a listing of animal health sector players and update it regularly
- Access the Animal Resources Information System (ARIS) and integrate national information and data and facilitate information sharing
- Mobilisation of resources to support the implementation and monitoring of the platform's evaluation

6.1.2. At the regional level

The AU-MSs national animal health directors responses rated the major priority actions for harmonisation and coordination of regional animal health actors as follows: strengthening coordination and cooperation of animal health actors-13%, provision of financial support to delegates of national health actors to regional meetings and programs-29% and support for early warning and control of animal diseases of economic importance and zoonoses-20%, establishment of more animal health actors/stakeholder platforms and agendas at both regional and country levels-27%.

The Veterinary Governance project implemented by AU-IBAR managed to review a number of pieces of legislation which include Animal Health Acts and their respective Statutory Instruments and regulations in most African countries. There is therefore an urgent need to continue reviewing more animal health legislative instruments to encourage effective implementation of disease surveillance, prevention, control and product marketing strategies at both country and regional levels.

- Create at RECs level, a platform dedicated to animal health stakeholders and stakeholders and support its operation ;
- Putting in place mechanisms for communication, information gathering; Training actors for sharing of information and experiences.
- Explore areas of collaboration and opportunities.
- Online or remote virtual meetings are more appropriate within the context of Covid-19 global pandemic.
- Mainstreaming of one health approach in regional and national animal health policies:
- Awareness creation at all levels of animal health service delivery.
- Strengthen collaborative links for one health approach.
- Development of Policy, Investment, Communication and advocacy (PICA) tools.

6.1.3. At AU-IBAR level

The national animal health directors responses rated the major priority actions for harmonisation and coordination of continental animal health actors and for effective implementation of AHSA activities at

AU-IBAR as follows: need to formulate continental FMD eradication-20%, improvement of coordination of animal health actors and implementation of AHSA activities by AU-IBAR-17%, strengthening animal health coordination and communication mechanisms in all RECs-15% and facilitation of signing of MOUs with animal health players enched on sound legislation-20%.

The Animal health Strategy for Africa (AHSA) should be anchored on sound legislative framework to enable enforcement at both country and regional levels. There is also a need for recruiting competent human resources with good leadership qualities and use of effective and user-friendly animal health communication technologies.

- Establishment of inventory or data base for animal health actors and their areas of interventions (AU-IBAR in collaboration with chief veterinary officers) through a survey :
- Develop action plan for data collection.
- Develop methodology – taking into account the current situation occasioned by COVID-19 global pandemic.
- Terms of reference for the data collection team.
- Awareness creation among CVOs to facilitate easy collection of data.
- Commission the survey.
- Establish protocols for updating the national and regional animal resource data platform through ARIS.
- Develop the Regional Animal Health Strategy (RAHS) for each geographical region in line with the continental strategy.
- Creating an institutional framework in the form of a regional platform with the UMA Secretariat bringing together animal health actors and stakeholders to coordinate the efforts, complementarity and synergy of action of various partners and stakeholders involved in animal health issues.
- Mobilization of resources to support implementation and monitoring assessment

6.1.4. With international partners

Development partners (OIE, FAO, IAEA) and international donors like the EU should continue providing both logistical and financial support to AHSA activities and their implementation by AU-IBAR, the RECs and Member states. Financing training of personnel, adoption of modern animal health technologies and harmonization and coordination of AHSA activities are highly recommended.

- Development of disease surveillance protocols / tools that enhance participation of various actors and stakeholders:
- Compliance with animal health and welfare standards and AHW regulations as well as legal requirements.
- Financially and technically support the CERs and the AU-BIRA in the effective implementation of the platform;
- Support initiatives at the national, regional and continental levels and mobilize the resources needed to achieve the goals;
- FAO, OIE and AU-IBAR should continue to promote strengthening epidemiological surveillance systems, especially at the national level, by fostering dialogue with donor community partners

6.2. Recommendations for better coordination of animal health stakeholders

6.2.1. At the country level

- Strengthen the national animal disease surveillance, diagnosis and reporting systems including national coordination mechanism for disease surveillance control and diagnosis.
- Allocate national budget to support animal health related activities.
- Institutionalize contacts with stakeholders and establish a climate of shared trust between different stakeholders
- Adopting a participatory and multi-sector approach to building trust between the different players.

6.2.2. At the regional level

There is need to identify priority actions for harmonisation and coordination of animal health platform activities for better impact. The successful roll out and coordination of regional animal health activities at both country and regional levels depend on adequate provision of the following enablers:

- Establishing animal health actors/stakeholder platforms at country level based on livestock commodity value chains
- Provision of adequate budgetary support for regional animal health activities being implemented member states
- Provide financial support for the adaptation and adoption of new technologies in animal health at regional and country levels
- Reviewing, harmonising and standardising of animal health legislation
- Harmonization and standardization of protocols for disease control, diagnostics, marketing and trade to gain trust, reliability and easy coordination of member states.

6.2.3. At AU-IBAR level

Suggestions to AU-IBAR and to other International Organisations and Development Partners include supporting African countries with adequate resources to be able to attain the following for better and effective continental implementation and coordination of AHSA activities in all AU member states:

- Financing of continental delegates (RECs and Country delegates) to attend AHSA workshops and conferences
- Standardization and harmonization of Continental animal health actors initiatives with Regional and National animal health actors/stakeholder activities.
- Provide funds for continuous advocacy, dialogue and monitoring and evaluation of AHSA activities at continental, regional and country levels.
- Harmonisation and standardization of animal health disease surveillance guidelines and protocols at country, regional and continental levels.
- Advocate and facilitate strong African Union member countries' participation in the standard setting processes of the OIE to ensure that the African agendas are part of the global strategies in animal health.
- Development and support of African Centres of Excellence in animal health and investing in research and development initiatives
- Recruitment of qualified and competent professionals at AU-IBAR offices and secretariat

- Continue to develop ARIS as a continental database for information collection and sharing
- Strengthening the presence and visibility of the AU-BIRA in the region: Until 2011, the AU-IBAR had contributed in collaboration with FAO and the OIE to the creation of Regional Animal Health Centres (CRSA) including the one in Bamako installed in the premises of the OIE Regional Representation for Africa. The aim was to create a regional hub for collaboration and harmonization of animal health interventions from the OIE, FAO and au-IBAR.
- There was also talk of the creation of a CRSA in one of the Maghreb countries in order to bring THE AU-IBAR closer to the EMs of the north of the continent and improve its visibility. The project to create the CRSAs has been abandoned. It is a good idea to revive the idea of the CRSAs and first carry out a scientific and technical evaluation of the previous experiment as well as a feasibility study of this project.

6.2.4. With international partners

International development partners (OIE, FAO, IAEA) and international donors like the EU should continue providing both logistical and financial support to animal health programs and their implementation by AU-IBAR, the RECs and Member states. There is great need to increase funding for AU-IBAR to effectively coordinate the implementation and monitoring of AHSA programs and activities at continental, regional and national levels. There is also need to capacitate continental, regional and national animal health institutions through training and provision of equipment for disease surveillance and research.

Some of the specific international agreements to be strengthened include the SADC-EU Economic Partnership Agreement (EPA), RECs-AU-IBAR and UN development partners and advocate for increased investments in animal health and financing AHSA coordination and implementation of planned programs and activities.

CONCLUSION

Animal diseases are among the main constraints that reduce the performance of the animal resource sector in Africa. By reducing animal production, productivity, diseases significantly reduce the quantity and quality of animal products and, as a result, erode household nutrition, income and food security. In this regard, diseases also contribute to increasing vulnerability and weakening the resilience of livestock-dependent communities to natural disasters.

AU-BIRA developed the 2019-2035 Animal Health Strategy for Africa in accordance with the 2015-2035 Africa Livestock Development Strategy (LiDeSA) and approved by the AU Summit in January 2020. The Animal Health Strategy in Africa (AHSA) is thus the framework for the establishment of a sustainable animal health system in line with global standards.

For animal resources in the region to be protected and harnessed to achieve food and nutrition security, improve livelihoods, increase the contribution of livestock production to national GDPs and help achieve SDGs, there must be strengthening of institutions, infrastructure and capacities of the VSs in MSs.

Aware of the need for a more structured continental mechanism to engage stakeholders, the African Union Commission, through the AU-BIRA, has created the Continental Platform for Animal Health Actors (CAHP) in Africa. This platform is therefore the governance body of the strategy and benefits from a steering group that serves as an advisory group for the platform. At the regional and national level, CAHP-Africa should be developed as a regional platform specific to the AMU and in national platforms specific to each MS.

Governments of MSs must show strong political will to update/enact enabling laws and policies, build capacities of personnel and fund research and programs in the animal health sector. Veterinary services should provide needed services (education, animal disease diagnosis, research, etc) and products (vaccines) to serve the requirements of the continent.

In terms of regional institutional capacities, the AMU still has an institutional framework for platforms in general and for animal health, and in particular, which is compounded by the existence of a very different approach from one country to another. The drafting of a regional animal health strategy specific to the AMU is the essential basis for the establishment of a regional operational and efficient animal health platform that will be divided into national platforms.

Animal health and welfare services are a public good and MSs as well as the RAHC need to be assisted to deliver for public health, food safety and economic wellbeing of the people in Africa and worldwide. The establishment of a coordination mechanism for animal health will help to remove the constraints that are ongoing in the animal resource sector and prevent its development and access to profitable markets.

It is imperative for the Africa continent to be a key player in the AfCTA agreement and other global markets.

There is a need for call for action in animal health on more coordination, partnership, collaboration and cooperation as well as concerted efforts with donors and partners through technical and financial assistance programs that will strengthen institutions for delivery of animal health and welfare services.

Finally, to ensure the best conditions for success, certain fundamental factors must be brought together at regional and national levels, including the adoption of a participatory, collaborative, multi-sector and transdisciplinary approach in an inclusive process that integrates key stakeholders to enable stakeholder ownership associated with the establishment of an institutional framework that delineates interactions between actors and regional and continental structures. All this should be reinforced by a real political commitment at all levels.

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APPENDIX

Questionnaire on Mapping Animal Health Actors and their Interventions Areas in Africa

PART 1. PRESENTATION

Country:..... Name of respondent: Title of respondent:

E-mail: Website (if any): Telephone number:

Date questionnaire completed and submitted:.....

PART 2. OVERVIEW INTERNATIONAL, REGIONAL AND NATIONAL ANIMAL HEALTH ACTORS

NAME	TYPE OF ACTOR	INTERVENTIONS AREAS	CONTACTS	MAIN ACHIEVEMENTS IN ANIMAL HEALTH	SPECIFIC CAPACITY NEEDS

Add lines if necessary.

Name:Actors/stakeholders

Type: international institution or regional institution, national public sector, private sector, NGO, Project, Civil society, other (to be explained)

Intervention areas:Health care,Disease surveillance and control,Laboratory support,Research and training, Food safety/hygiene/SPS, Policy, veterinary regulations, Communication, Advocacy, financial institution, agribusiness, veterinary drugs sales/distribution; veterinary vaccines production; quality assurance, Regulatory; animal welfare, wildlife conservation and management, etc....(if several, mention par order of importance the first 3)

Contacts: Complete address, e-mail, phone number(s) Name and Function of the contact person

PART 3. COORDINATION MECHANISM

3.1. List actors/stakeholders who work closely with the CVOs and the decentralized animal health services? [what specific actions do they undertake with the CVO? what specific actions do they undertake with the decentralized services]? If appropriate

3.2. Is there any coordination mechanism for disease control/surveillance? If yes, name them? Who is responsible for the coordination? Who evaluates the impacts and outcomes? What are the key performance indicators? Do you have a continual improvement plan? If yes, how do you implement it?

3.3. What do you consider as priority actions for harmonization and coordination of national animal health actors/stakeholders for better impact? [Within the country, at the regional level, at the continental level] please list by order of importance

3.4. What policy guidance [initiation, formulation, implementation] is required for better coordination of animal health actors/stakeholders, complementarity and synergy of actions?

3.4.1. At national level

3.4.2. Regional level

3.4.3. Continental level

3.4.4. With global partners

3.5. What are your suggestions to AU-IBAR to improve the coordination of AH actors in Africa [e.g. a central data repository, animal health networks at the national level {e.g. for countries with devolved government systems} regional level and continental level]?

Thank you for your collaboration



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