Review

Review of mechanisms for food safety-related SPS measures within African regional Economic Communities (RECs): Paving the way for a continent-wide food safety coordination effort

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ARTICLE INFO	ABSTRACT
	African policy makers are paying increasing attention to food safety as a key contributor to food security across the continent and as an opportunity to enhance the economic potential of additional trade in food and agrifood commodities within and outside Africa. By default, the regional and continental economic integration framework was envisaged by way of the African Economic Community (AEC) through its eight regional pillars in the form of Regional Economic Communities (RECs) in which the development of sanitary and phytosanitary (SPS) measures have emerged in the context of trade facilitation rather than for public health considerations. This may be in contradiction with the original prioritization of objectives outlined in the Codex Alimentarius Commission's *Principles and Guidelines for National Food Control Systems* (CAC/GL 82–2013). Simultaneously, national and regional food control systems are at an impasse, often afflicted with inadequate institutional capacities, ineffective regulatory systems and weak SPS coordination efforts, further hindering the achievement of continental economic development objectives. For this reason, the revision of current practices, trends and needs will facilitate the prioritization of decisive actions for SPS investments at regional and continental levels and increase the likelihood that future SPS harmonization efforts are successful, including the establishment of continental risk assessment and risk management authorities and/or reference laboratories. This desktop-review elaborates on the regional and continental SPS situation in Africa, what coordination and communication measures are in place and what investments have been made in the RECs and in the African Union. As part of the analysis, some potential obstacles contributing to slow-down of the continental SPS harmonization process will be examined. However, the article will not aim to conduct detailed mapping of existing and required SPS policy, regulatory and institutional frameworks at the regional or continental level due to the complexity of these matters. The paper will nonetheless strive to outline a set of recommendations, as a starting point, to expedite the convergence of these efforts but will not provide solutions for every challenge.

1. Introduction

Robust food control systems are essential to adequately support the application of food safety and/or sanitary and phytosanitary (SPS) measures at national, regional and continental levels. Food safety competent authorities must be capable of cooperating and coordinating efforts with each other according to guidance outlined in the Codex Alimentarius Commission's *Principles and Guidelines on National Food Control Systems* (CAC/GL 82–2013) (Codex, 2013).

The World Health Organization's (WHO) *Estimates of the Global Burden of Foodborne Diseases* has alerted African decision-makers and

regulators to the importance of food safety and the urgency for prioritizing action to diminish the burden of disease. The report estimated that, in Africa, such food safety hazards were responsible for approximately 137,000 deaths and about 91 million cases of acute foodborne illnesses on an annual basis, the highest estimates worldwide. Diarrheal disease agents were responsible for nearly 70 percent of foodborne diseases, which included non-typhoidal *Salmonella enterica* (NTS), enteropathogenic *E. coli* (EPEC), enterotoxigenic *E. coli* (ETEC) and *Vibrio cholera* in lower income sub-regions of the continent, and Campylobacter spp. in higher income areas. Among the continents worldwide, this represented the greatest global disease burden, with

2500 disability-adjusted life years (DALYs) per 100,000 population individuals in Africa. The report concluded that "the large disease burden from food highlights the importance of food safety, particularly in Africa" (WHO, 2015).

In recent years, African decision-makers have prioritized actions in relation to food safety and SPS matters in an effort to address some of the public health and economic challenges. The results shaped a new institutional framework for continental SPS governance led by the African Union Commission (AUC) and its technical offices. Several discussions (AUC, 2019; WTO, 2019) took place on the possibility of establishing a unified food safety authority for the continent, sharing a common SPS policy framework and with the dual objective of streamlining capacity building efforts, as well as harmonizing SPS measures across the African continent. With the creation and operation of a number of RECs in Africa focused on progressive economic integration, the opportunity to play a significant role in ensuring suitable coordination and communication among national food control systems was explored in each respective region. In theory, these structures can be key in achieving subcontinental food safety coordination and in reporting progress of food safety regulatory integration at the African level, for example to a Continental SPS Committee, international standard setting bodies (ISSBs), the World Trade Organization (WTO) and various development partners.

This article offers a review of existing SPS coordination mechanisms within each of the African RECs, with an emphasis on food safety coordination mechanisms. It attempts to study the relationships between such regional mechanisms, should they exist, with efforts deployed by the AUC to coordinate food safety measures at the continent level, as part of endeavors of integration, alignment and harmonization of food regulatory provisions in Africa. The paper offers a perspective for future directions to enhance such coordination mechanisms in support of the development of a single Africa-wide market for food and agri-food products.

2. Methods

The review is based on a systematic analysis of existing reports and studies conducted on African RECs, with a focus on their SPS governance, coordination and communication mechanism(s) and more specifically, those factors pertaining to food safety coordination. Findings and recommendations outlined in these reports, in relation to SPS strategies and policies, were considered together with results and outcomes of food safety capacity building initiatives.

A literature search was conducted for articles published over the last decade – from 2009 to 2019 – using the Web of Science and Scopus databases, utilizing the following combination of keywords: "Regional Economic Community", "Africa", "SPS coordination" and "food safety". Since no substantive results were found, other key literature sources were identified through an extended web search, such as reports developed by international organizations or aid/development agencies, such as the World Trade Organization (WTO) or the German Development Agency (GIZ), which studied regional food safety frameworks among RECs, including existing SPS policies and strategies. In addition, recent updates and interventions reported by the AUC, its associated RECs and their affiliated bodies at meetings of the WTO SPS Committee, as well as updates published on the various organizations' websites were reviewed. It is noteworthy that the African Union Commission (AUC) serves as a secretariat of the African Union (AU) which is a continental regional organization. The web search also identified key pivotal publications, such as those authored by Chinyamakobvu (2017), Magalhaes (2010) and Osiemo (2015). In their papers, Chinyamakobvu (2017) and Magalhaes (2010) enumerate and discuss SPS and TBT coordination mechanisms in Africa. Osiemo's paper is an academic research on the same subject. These papers were leveraged to offer updates on recent achievements since their availability, with the added objective to focus the discussion on food safety

coordination efforts and on linking these to continent wide initiatives. The limited number of papers available in the peer reviewed literature on the subject was compensated through a further search for press releases, technical reports and other forms of project reviews and related recommendations addressing the same topic. Notably, a recent report developed by the Global Food Safety Partnership (GFSP) reviewed food safety capacity building initiatives carried out in Africa (GFSP, 2019).

The review also considered Africa-wide efforts to engage in SPS related matters, with an emphasis on coordination of food safety measures. Focus was placed on identifying any relevant commitments, among the institutional components of the African Union that call for such coordination, as well as their associated legal or treaty foundation. For RECs, the review examined, for each entity, its existing SPS coordination mechanism(s), its food safety policy framework, where they exist, as well as any relevant past and/or ongoing capacity building efforts in this area. A historical review regarding the formulation of RECs and relevant bodies of the AUC was not performed; neither was an in-depth analysis of SPS policies, beyond aspects related to regional coordination. Where possible, the analysis attempted to extract lessons-learnt from coordination efforts at the REC level which could be leveraged to foster best practices at the continental level.

This paper's review methodology did not encompass direct engagement with the AUC, nor with its RECs, to gather information through interviews. Only initiatives and developments reported after 2010 were captured.

3. Results

3.1. Food safety and the legal frameworks for regional economic integration within the African Union

As mentioned above, the AU is a continental body, consisting of 55 Member States. The goals described in the organization's constitutive Act – the *Constitutive Act of the African Union Commission* and the *Protocol on Amendments to the Constitutive Act of the African Union* – include aspects in relation with international economic cooperation, capacity building and enhanced public health, as follows (AU, 2019a):

- Establish the necessary conditions which enable the continent to play its rightful role in the global economy and in international negotiations;
- Promote sustainable development at the economic, social and cultural levels as well as the integration of African economies;
- Coordinate and harmonize the policies between the existing and future Regional Economic Communities for the gradual attainment of the objectives of the AU;
- Work with relevant international partners in the eradication of preventable diseases and the promotion of good health on the continent.

Producing and providing safe and nutritious food to Africa's population and increasing domestic and international market access to African food and agri-food products are key vehicles towards achieving some, if not all, of the objectives stated above. Other important drivers include enhanced coordination and harmonization of food safety interventions across the continent.

The 1980 Lagos Plan of Action for the Development of Africa recommended the creation of RECs in order to promote wider African integration by building blocks of countries within a particular continental region. These building blocks are essential for the development of the wider African Economic Community (AEC), established during the Abuja Treaty in 1991 (OSAA, 2019). As a result, the AU recognizes eight RECs, namely the Arab Maghreb Union (AMU), the Common Market for Eastern and Southern Africa (COMESA), the Community of Sahel-Saharan States (CEN-SAD), the Eastern African Community (EAC), the Economic Community of Central African States (ECCAS), the

Economic Community of West African States (ECOWAS), the Intergovernmental Authority on Development (IGAD) and the Southern African Development Community (SADC). The *Protocol on Relations* between the RECs and the AU provides an official framework between the AEC and the RECs. All RECS adhere to this protocol, at the exception of the AMU, which is not a signatory to it. It is not unusual, however, to witness several African countries joined to more than one REC, which in turn is conducive to additional challenges, for example, in terms of coordination efforts in policies, strategies and harmonization of laws and regulations, and coordination of SPS policies, in particular food safety measures. This review examined the various agreements and treaties that were developed at the continental level with possible impacts on SPS coordination policies and more specifically on food safety coordination mechanisms and harmonization of food safety measures between African countries.

3.1.1. The cotonou agreement

The agreement, signed in 2000 for a limited duration of 20 years, aimed "to reduce and eventually eradicate poverty consistent with the objectives of sustainable development and the gradual integration of ACP countries into the world economy" (EU, 2014). Article 28 of the agreement discusses the need to foster regional cooperation and integration, including the promotion of "the management of sustainable development challenges with a transnational dimension through, *inter alia*, coordination and harmonization of regional cooperation policies". Article 48 describes the right of each party to adopt and to reinforce SPS measures and continuous commitments to the WTO SPS Agreement. In addition, this article also refers to coordination, consultation and information exchange among the parties based on the SPS Agreement, and the possibility of prior consultation and coordination within the Codex Alimentarius Commission, the World Animal Health Organization (OIE) and the International Plant Protection Convention (IPPC) (EU, 2014).

3.1.2. Maputo Declaration - Comprehensive Africa Agriculture Development Programme (CAADP)

In 2003, the 2nd African Union Assembly signed the Maputo Declaration on Comprehensive Africa Agriculture Development Programme (CAADP) as an integral part of the New Partnership for Africa's Development (NEPAD). This follows the principles of the AUC's Agenda 2063 Framework Document, as the main policy or strategy framework for the continent. Even though "Agenda 2063" targets the doubling of agricultural productivity, it did not refer to food safety or SPS as a relevant vehicle to achieving the set targets. On the other hand, the document refers to the CAADP as the pan-African policy framework for agricultural transformation, wealth creation, food security, nutrition and economic growth (OSAA, 2019). CAADP and its 2015–2025 Results Framework is also unclear as to food safety's contribution to achieving these goals, despite listing objectives for level 2: Agricultural Transformation and Sustained Inclusive Agricultural Growth and level 3: Strengthening systematic capacity to deliver results, both of which are linked to food safety.

3.1.3. The AUC's accelerated industrial Development of Africa

In 2008, the Heads of State and Governments endorsed the Accelerated Industrial Development of Africa (AIDA) along with an *Action Plan for the Accelerated Industrial Development for Africa*. The latter document supports actions at the continental level on establishment/strengthening of a Continental Standards Organization and the harmonization of standards (AU, 2008), as well as the need of developing SPS and technical standards currently hindered by inabilities of African countries (AU, 2008).

3.1.4. Malabo Declaration on accelerated agricultural growth and transformation for shared prosperity and improved livelihoods

After 10 years of CAADP implementation, it was noted that the goals of agricultural growth were achieved by increasing the area under cultivation rather than productivity per unit of land (Osterman, 2018). The AU's Department of Rural Economy and Agriculture (DREA) developed the AU Malabo Business Plan to implement CAADP and to support a newly developed operational plan for 2018–2020. A strategic program called "Enhanced Sanitary and Phytosanitary standards and Compliance" was also integrated into the framework, thus supporting the agenda of "*Boosting Intra-African Trade (BIAT) in Agricultural Commodities and Services*". In reviewing the most recent Business Plan associated with the Malabo Declaration (AUC, 2019), the following strategic activities in food safety were identified: 1) development of a Strategic Framework, Good Practices, Benchmarks and Tools for SPS; 2) establishment and operationalization of a Food Safety Coordination Mechanism for Africa; and 3) training modules for enhanced SPS measures/standards, Food Safety and Compliance.

A review of progress against these commitments, by an expert taskforce identified the limited attention awarded by policy-makers to food safety and nutrition. This fact emerged as a key finding upon the adoption of the *Inaugural Biennial Review (BR) Report on the Implementation of the Malabo Declaration* during the 30th Ordinary Session of the AU Summit in January 2018 (CTA, n.d.). The review also highlighted the lack of evidence and data on the food safety situation in African countries. For this reason, the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA) together with AUC, the Consultative Group for International Agricultural Research (CGIAR), FAO and WHO have developed and launched the Africa Food Safety Index (AFSI) which is a measure that supports African countries to track food shortages as a result of contamination with pathogens and chemicals. Such measure is also meant to help food safety prioritization, foodborne illnesses reduction and enhanced trade of food and agri-food commodities (CTA, 2018).

3.1.5. African continental free trade agreement (AfCFTA)

During its 18th Ordinary Session – held in January 2012 in Addis Ababa, Ethiopia – the Assembly of the Heads of State and Governments of the African Union adopted a decision – Assembly/AU/Dec.394 [XVIII] – to establish a Pan-Africa Continental Free Trade Area (AfCFTA). The AfCFTA was signed between 52 African Union Member States in 2018 in Kigali, Rwanda. Further discussions were held on the priorities in the AfCFTA Protocol with the development of an Annex on SPS Measures. The AfCFTA has also created the institutional framework for an AfCFTA Secretariat, an administrative organ to coordinate the implementation of the Agreement. The Secretariat will "autonomously work within the AU system under the supervision of the AUC's Chairperson". As part of the Agreement, the Committee on Sanitary and Phytosanitary Measures – previously referred to as Continental SPS Committee – and a Committee for Technical Barriers to Trade were formed (TRALAC, 2019). The AfCFTA was subsequently ratified at least by 22 of the signatory states, as of April 2019. It became the key lever of the integration of the economies of members of the AU.

Along with the AfCFTA, an *Action Plan for Boosting Intra-Africa Trade (BIAT)* was endorsed, covering harmonization of rules of origin and trade regimes at the REC level and Tripartite level, harmonization and simplification of customs and transit procedures, as well as documentation and regulation, including Integrated Border Management (IBM) (AUC, 2012).

In general, this agreement, like others before it, was high-level, offering a direction towards SPS and food safety coordination, but lacked the practical direction as to how this could be achieved.

3.2. Towards continental SPS and food safety governance and harmonization efforts

The Department of Rural Economy and Agriculture of the AUC is a key player in paving the way towards an enhanced continental governance of SPS issues. The Department has the mandate to promote

agriculture and contribute to the economic development of the continent. The DREA has two main technical offices covering animal and plant health issues: The African Union Inter-African Bureau for Animal Resources (AU-IBAR), based in Nairobi, Kenya; and, its Inter-African Phytosanitary Council (AU-IAPSC), based in Yaoundé, Cameroon. The AU-IAPSC also oversees the program addressing aflatoxin challenges through the platform of Partnership for Aflatoxin Control in Africa (PACA). The DREA cooperates with RECs and various international organizations and aid agencies in the design and implementation of SPS capacity building in order to support the development and coordination of SPS legislative and policy frameworks, food safety, as well as related quality infrastructure enhancement initiatives continent-wide.

The African Union Commission established its continental SPS Committee in August 2014 for the overarching purpose of supporting its Member States in the development of WTO-consistent SPS frameworks by promoting the mainstreaming of SPS issues into the implementation of the CAADP and other agriculture, trade-related, health and environmental initiatives and frameworks. Based on the latest version of its Terms of Reference (TOR), the Continental SPS Committee, led by the DREA, carries out the tasks of capacity development, coordination and harmonization, as well as policy guidance and advocacy (WTO, 2019). The SPS Committee held its first session on the margins of the commemoration of the 6th Africa Day for Food and Nutrition Security in August 2015. In attendance were REC representatives, relevant international organizations – Food and Agriculture Organization of the United Nations (FAO) and OIE – the African Development Bank, as well as other departments of the African Union, namely the departments on trade, industry and social affairs (AU, 2015; WTO, 2019). The last meeting of the AUC SPS Committee recorded, at the time of writing this review, was held on March 20, 2019, where the focus was on the development of the AUC Continental SPS policy framework, priority-setting of the SPS Annex to AfCFTA, as well as the establishment of the African Food Safety Agency (WTO, 2019).

In October 2017, the AUC Specialized Technical Committee on Agriculture, Rural Development, Water and Environment Commission adopted a Continental SPS Policy framework. In general, the policy framework intended to facilitate the harmonization of AU Member States' SPS policy frameworks, to inform the AfCFTA and the possible creation of a Pan African Food Safety Laboratory (WTO, 2018).

Furthermore, this review has identified key discussions, initiatives and committees as contributing instruments towards enhanced coordination of food safety measures across the continent, leading up to the ultimate objective, the promising creation of the African Food Safety Agency. The subsequent narrative attempts to summarize these mechanisms, including their potential contribution, toward the coordination of food safety capacity across the African continent.

3.2.1. The FAO/WHO Coordinating Committee on africa (CCAFRICA)

The Codex Alimentarius Commission has established six regional Coordinating Committees managed under the Joint FAO/WHO Food Standards Program. CCAFRICA is dedicated to coordinating the international food standards program in Africa. At the time of writing this review, the coordinator for Africa, elected by other members of the region for a period of 2 years, was Kenya who, as coordinator, possessed the mandate to facilitate effective participation in the Codex Food Standards Program for the interest of Africa. Current CCAFRICA agenda items include: 1) monitoring of the implementation of the region's Codex Strategic Plan (Strategic Plan for CCAFRICA 2014–2019: Status of implementation); 2) a proposed draft Regional Standard for Dried Meat; 3) a Proposed Draft Regional Standard for fermented cooked cassava-based products; 4) a proposed Draft Regional Standard for Gnetum spp leaves; as well as 5) an effort to discuss a harmonized framework for Food Safety Laws for Africa (Kenya Bureau of Standards, 2019).

3.2.2. The african food safety network (AFoSaN) and a possible african reference laboratory

The AFoSaN was reported as a collaborative mechanism, established through a regional intervention implemented by the International Atomic Energy Agency (IAEA) and the African Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology (AFRA) in order to strengthen food safety control systems in Africa and focus on food testing laboratories as a foundation. Its mission: to promote networking among food safety institutions, laboratories and related stakeholders to strengthen food control systems (AFoSaN, 2019).

In parallel, to enhance food analytical capacity and expertise across the continent, the establishment of a continental food safety reference laboratory was reported (AUC, 2019). Partners in this endeavor include the WTO's Standards and Trade Development Facility (STDF), as well as the African Development Bank (Akullo, 2017).

3.2.3. A projected African Food Safety Agency

The establishment of a common agency for food safety in Africa, along with a continental Rapid Alert System for Food and Feed (RASFF), remains an ongoing discussion. This idea was raised initially on the margins of the Lisbon Summit between the AU and the European Union (EU) Heads of State on December 9, 2007. The AU-IBAR has organized several continental workshops for food safety experts, with participation from the African RECs, UN Agencies and the European Union. These workshops resulted in a set of recommendations for the establishment of the African Union Food Safety Management Mechanism (AU-FSMCM), including the setup of an Africa-wide Rapid Food and Feed Alert Mechanism (ARFFAM) (Francom, 2015). At the time of the writing of this review, the DREA was working to develop the Agency's scope of intervention, subsequent to the announcement of its creation (Godefroy, 2019).

3.2.4. Declaration and action plan of the 3rd AU – EU agriculture ministerial conference

Senior representatives of both organizations met on June 21, 2019 under the theme: "Promoting sustainable regional agri-food value chains". The conference concluded with the signing of a declaration reconfirming the support of existing strategies and programs in the continent related to food security and safety, nutrition and agricultural job creation. With regard to the AfCFTA, the parties reiterated the importance of capacity building programs for market access opportunities in the EU, particularly on "facilitation of intra-regional trade and regional integration, including through harmonizing standards, especially those related to sanitary and phytosanitary measures" (EU, 2019). The document also welcomed the "efforts around setting-up appropriate food safety governance structures across Africa to holistically address the multi-sectorial impacts of food safety challenges on trade, public health, food security and nutrition". As part of the next high-level meeting planned for 2021, the parties will take stock of the progress achieved based on an agreed-upon "Action Agenda", which included as a deliverable the "strengthening of food safety governance across the continent and supporting the establishment of appropriate food safety governance structures" derived from the implementation and operationalization of the AfCFTA, particularly Annex 7 of its Protocol on SPS measures.

3.3. Review of SPS coordination mechanisms by the African RECs

The review resulted in the mapping of the current developmental stage of food safety governance structures adopted by African RECs, their existing SPS coordination mechanisms and recent capacity building initiatives. Only those RECs which are recognized by the AUC were considered and thereby other sister RECs, namely the Central African Economic and Monetary Community (CEMAC) or the West Africa Economic & Monetary Union (WAEMU) were only discussed

under their respective umbrella RECs.

3.3.1. The Community of Sahel-Saharan States (CEN-SAD)

The agreement of the CEN-SAD region was signed on February 4, 1998 and currently has 25 Member States: Benin, Burkina Faso, Central African Republic, Chad, The Comoros, Côte d'Ivoire, Djibouti, Egypt, Eritrea, the Gambia, Ghana, Guinea-Bissau, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Sao Tomé and Principe, Senegal, Sierra Leone, Somalia, Sudan, Togo and Tunisia. Headquartered in Tripoli – the capital of Libya – the CEN-SAD has the largest number of Member States among all African RECs.

Presently, no SPS policy framework has been developed for the CEN-SAD region. Establishment of such a policy would entail the development of the required legal (regional SPS protocol) and institutional system (Regional SPS Committee). The "Rural Development Strategy and the Management of Natural Resources in the CEN-SAD Region", adopted in 2007 by the Ministers of Agriculture, Environment and Water Resource, documents the region's vision on issues related to rural development, including animal disease management and annual vaccinations against contagious bovine pleuropneumonia (CBPP) in five CEN-SAD countries (Sudan, Burkina Faso, Niger, Mali and Chad). A new integrated and holistic strategy for the region was also recommended along with the strengthening of human capital and infrastructure (NEPAD, 2015). The review of SPS coordination efforts identified some activities carried out as part of the participation of African nations in Sanitary and Phytosanitary Standard Setting Organizations (PAN-SPSO). As part of the PAN-SPSO, CEN-SAD brought together fifty national experts to adopt a regional guide for the establishment and/or revival of National SPS Standards Committees, including training on SPS standard negotiations, risk and cost/benefit analysis (Chinyamakobvu, 2017). However, no formal collaboration was identified between veterinary and human health services among CEN-SAD Member States (FAO, 2011).

Some capacity building efforts were identified, also part of PAN-SPSO activities. The PAN-SPSO project facilitated participation of African countries in the activities of ISSBs during the formulation of international standards (Chinyamakobvu, 2017), which included CEN-SAD Member States. Phase 1 of the Regional Food Security Programme (PRSA/CEN-SAD) also covered some SPS activities in Burkina Faso, Mali, Niger, Chad and the Sudan. Phase 2 focused on 7 additional countries: Benin, Central African Republic, Eritrea, Guinea Bissau, Senegal, Sierra Leone and Togo, with a total budget of US$ 29.25M over a 5-year period (NEPAD, 2015). The Regional Animal Health Program mainly focused on a livestock vaccination campaign in some Member States – Mali, Niger, Chad and Burkina Faso – thus improving their livestock productivity (Chinyamakobvu, 2017).

3.3.2. Common Market for Eastern and Southern Africa (COMESA)

Replacing the Preferential Trade Area, the agreement on COMESA was signed on November 5, 1993 and increased its number of Member States to 21 members in July 2018: Burundi, the Comoros, the Democratic Republic of Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi, Mauritius, Rwanda, Somalia, Sudan, Swaziland, Seychelles, Tunisia, Uganda, Zambia, Zimbabwe. COMESA's current headquarters is located in Lusaka, Zambia.

COMESA is one of the more developed regional economic communities when it comes to the SPS policy framework and coordination among its Member States as shown by the COMESA Treaty which includes an article (Article 132) on *Cooperation in the Export of Agricultural Commodities*. This article also addresses the cooperation mechanisms and harmonization of Member States' policies and regulations related to SPS measures. In 2007 and to facilitate these efforts of coordination and cooperation mechanisms, COMESA established a SPS Sub-Committee under the Technical Committee on Agriculture, which is convened annually with the objective to implement the decisions of the COMESA's Council of Ministers, to formulate programs and effectively coordinate SPS matters at the regional level. The SPS Sub-Committee was tasked to coordinate actions 1) at the national level, to implement the Council's Decisions and programs; 2) at the regional level, to coordinate joint programs with other RECs (SADC and EAC); and, 3) at the international level, with member countries, to participate in the work of ISSBs (COMESA, 2011). In December 2009, the Council of Ministers also adopted the final version of the SPS Regulations and established a SPS Unit to function as a Secretariat for the SPS Sub-Committee (COMESA, 2011). These regulations also encompass practical and "hands on" provisions, such as those pertaining to the establishment of a "Green Pass" certification scheme (Magalhaes, 2010) and the development of regional accreditation bodies and reference laboratories with a scope related to veterinary residues in Zambia and a plant health scope in Kenya. The annual reports prepared and made available by COMESA on its SPS Program offer a regular update on ongoing investments and developments in the region. In its recent draft report (COMESA, 2018), information was made available on the latest investments in regional reference laboratories with enhanced capacity in testing equipment. It was however highlighted that more efforts were required to support national SPS capacity at the member state level. More support was also needed to enable science-driven decision making in support of SPS measures as well as added transparency. Member States were therefore called upon to conduct risk assessments as a foundation of SPS measures and to consistently notify the COMESA Secretariat and reference international standards upon promulgation of such measures (Chinyamakobvu, 2017). In case of legal disputes, the application and interpretation of COMESA's legal instruments fall under the jurisdiction of the COMESA Court of Justice which also deals with SPS related disputes (Chinyamakobvu, 2017). COMESA is actively engaged in the implementation of a COMESA-EAC-SADC Tripartite Free Trade Area (TFTA) to promote regional trade but no SPS coordination mechanism was identified to be associated with this effort, despite the fact that the Agreement among Tripartite Members contains an article (22) on SPS Measures and further defines its implementation process in Annex 15 of the said Agreement.

Several capacity building initiatives were highlighted and are ongoing in this region, aiming to improve SPS harmonization and coordination efforts. *The Agricultural Marketing Promotion and Regional Integration Project* (AMPRIP) (2004–2011) was developed to enhance safe intra- and extra-COMESA agricultural trade, thus promoting economic growth and fostering regional economic integration among COMESA Member States. One component of the project focused on the "harmonization of SPS measures". Overall the project received satisfactory evaluation (AFDB, 2013) which raises questions on its actual impact. Another intervention, the *COMESA Trade Facilitation Programme* (2017–2021) initiative contains a pillar on food safety capacity building under its *Component 4: Implementation of harmonized, science based Sanitary and Phyto-Sanitary (SPS) measures and Technical Standards*. COMESA's *Regional Enterprise Competitiveness and Access to Markets Programme* (RECAMP) (2019–2023) is a complementary intervention which focuses on the improvement of food safety management practices and the creation of market linkages. Although this intervention focuses on food safety compliance of enterprises in selected value chains, synergies should be identified to avoid duplication of efforts when it comes to control measures applied by competent authorities (EU, 2017).

3.3.3. East african community (EAC)

The EAC agreement was signed on November 30, 1999 and as the second smallest REC, it compromises six member countries – Burundi, Kenya, Rwanda, South Sudan, Uganda and the United Republic of Tanzania – and is headquartered in Arusha, Tanzania.

Article 108 (c) of the *EAC Treaty* and Article 38 of the *Protocol on the Establishment of the EAC Customs Union* elaborates on the harmonization of SPS measures. Article 45 of the *EAC Common Market Protocol on cooperation in Agriculture and Food Security* calls for an effective regime

on SPS instruments, standards and technical regulations in the region (Wesonga, 2016). The *Agriculture and Rural Development Policy and Strategy (2005–2030)* refers to pests and disease control, SPS standards development, the establishment of regional zoo-sanitary and phytosanitary reference laboratories, as well as harmonization of regional standards in conformity with international standards. Under the leadership of EAC's Sectoral Council on Agriculture and Food Security, the EAC SPS Protocol was developed following international best practices, although it refers in a more specific manner to manage heavy metals as opposed to contaminants, which is more restrictive (Magalhaes, 2010). So far, Uganda, Rwanda, Kenya and Burundi ratified the SPS Protocol (Chinyamakobvu, 2017). Although the WTO SPS Agreement was followed in the development of the EAC SPS protocol, the re-drafting of certain provisions may lead to some confusion. While the SPS protocol requires the establishment of a support structure, including a SPS Office and a SPS Committee (UNIDO, 2011; Wesonga, 2016), there is no reference on their current existence as part of the EAC structures. On a positive note, countries of the EAC developed harmonized regional standards, taking into account Codex standards, which were then made compulsory under the *Standardization, Quality Assurance, Metrology and Testing (SQMT) Act* (Magalhaes, 2010, p. 11). EAC is also member of the TFTA to promote regional trade. As mentioned previously during the review of the SADC, the latter agreement contains an article (22) on SPS Measures.

Reviewing technical assistance initiatives identified an initiative that supported the development of the SPS Protocol and its annexes – including harmonized trade, related SPS measures for animal health based on international standards – named the "Trade Capacity Building in agro-industry products for the establishment and proof of compliance with international market requirements in EAC", which was concluded in 2010. Under the latter initiative, the EAC Business Council has been assisted in developing a public/private sector dialogue on SPS issues. The project also supported national food safety institutions to effectively harmonize SPS measures and develop SPS policies, based on a national SPS protocol. Testing laboratories in all EAC countries were equipped to strengthen their capacity to provide conformity assessment services (UNIDO, 2011). The 2018–2021 EAC *Market Access Upgrade Programme* (MARKUP) (EAC, 2019) funded by the EU and GIZ (EUR 39 million) has identified improving sectoral standards and harmonization of SPS measures as key results. The project supports national partners to address market access constraints, as well as the EAC Secretariat to coordinate selected region-wide policy and regulatory capacities.

3.3.4. Economic Community of Central African states (ECCAS)

This REC was endorsed on October 18, 1983 and includes 10 Member States: Angola, Burundi, Cameroon, Central African Republic, Chad, Republic of Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, and Sao Tome and Principe. The ECCAS currently headquartered in Libreville, Gabon.

National SPS Committees and SPS Focal Points were established to facilitate more effective participation of ECCAS countries in ISSBs (Chinyamakobvu, 2017). Six ECCAS Member States – Cameroon, Central African Republic, Chad, Republic of the Congo, Equatorial Guinea, Gabon – are also members of the CEMAC which is a separate regional economic grouping. At this stage, there are no reports indicating that CEMAC proceeded with harmonizing standards among its member countries. Like CEMAC, ECCAS food safety governance and SPS program are still in their infancy. Neither ECCAS nor CEMAC have reported the existence of a SPS institutional or regulatory framework. With regard to SPS coordination in the region, several separate initiatives were identified. First, a Technical Working Group on a "Regional Standards Harmonization Mechanism" was set up to establish a strategy and a mechanism to coordinate regional standardization and quality activities, resulting in a "Central Africa Region Standards Harmonization Strategy". A set of regional standards harmonization mechanisms were developed and adopted by ECCAS, *inter alia*, a Memorandum of

Understanding (MOU) on the Organization of Regional Standards Harmonization in Central Africa, Regional Standards Harmonization Rules of Procedure, and the Central Africa Standards Harmonization Strategy, together with their Implementation Plans. Furthermore, an interstate Committee on Pesticides in Africa (CPAC) was established to facilitate the issuance of licenses for phytopharmaceutical product use within the region's Member States. A Regional Animal Health Centre was also operationalized and since 2012, a coordinated and integrated approach to monitoring cross-border diseases and zoonoses in Central Africa has existed (Chinyamakobvu, 2017).

The Regional Food Security Programme (PRSA) implemented by FAO contributed to the harmonization of rules and regulations with respect to phytosanitary measures, including pesticide registration criteria and delegation of authority to control the import, export, marketing, utilization and destruction of registered pesticides. ECCAS was also reported to be involved in the implementation of the PAN-SPSO programme. Capacity building initiatives in the region mainly explored quality infrastructure interventions and standard harmonization, but not necessarily on SPS measures (Chinyamakobvu, 2017).

3.3.5. Economic Community of west African States (ECOWAS)

The ECOWAS agreement was signed on May 28, 1975. This REC currently includes 15 Member States: Benin, Burkina Faso, Cabo Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo. Abuja, Nigeria is the location of its headquarters.

ECOWAS is reported to have adopted SPS Regulation C/REG. 21/11/10 on the "Harmonization of the Structural Framework and Operational Rules Pertaining to the Health and Safety of Plants, Animals and Foods", which was enacted in 2010 to establish a regional legal framework harmonizing national SPS legislation (Chinyamakobvu, 2017, p. 20). In 2017, a technical working group meeting funded by the ECOWAS/United States Agency for International Development (USAID) cooperation program on SPS was held to finalize the terms of reference of this working group as relates to SPS issues. The SPS working group involves the three relevant sectors – industry, trade and agriculture – of the ECOWAS Commission; the West Africa Health Organization (WAHO); a representation of the WAEMU in relation with food safety, agriculture, mines and environment; USAID West Africa Regional Mission and, as observers, the AU-Inter Bureau on Animal Resources and the AU-Inter African Phytosanitary Council. This working group on SPS was tasked to provide scientific support to Member States on SPS-related matters (WTO, 2017). ECOWAS is reported to coordinate SPS activities through harmonization of standards and support in the implementation of specific programs among Member States (Chinyamakobvu, 2017). A regional stakeholder meeting was held in June 2017 to develop a comprehensive action plan on plant pest and diseases prevention, surveillance and mitigation. As a follow up, a the establishment of a task-force was planned, with the support of United States Department of Agriculture Animal and Plant Health Inspection Service (USDA APHIS) (WTO, 2017).

Eight of the ECOWAS countries – Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal and Togo – are also members of the WAEMU, a smaller organization for regional integration. WAEMU's past strategy has integrated regional SPS harmonization and resulted in the development and adaption of SPS measures and other additional regulations in 2009. An example of one dissimilarity in the regulations governing the two regional groupings: the ECOWAS Regulation in comparison to the WAEMU Regulation does not include a reference to plants (Chinyamakobvu, 2017).

The initiative "Support to the competitiveness and harmonization of TBT and SPS measures" funded by the EU in the amount of EUR 16.9 million and implemented by the United Nations Industrial Development Organization (UNIDO) mainly focused on establishing quality infrastructure capacities in the region. Ongoing contribution from the USAID supports the implementation of trade agreements and the development

of SPS standards through the USAID/West Africa Cost Reimbursement Implementation Letter no 2 (WTO, 2017).

3.3.6. Intergovernmental Authority on Development (IGAD)

Established in January 1986, this REC currently has eight Member States: Djibouti, Ethiopia, Eritrea, Kenya, Somalia, The Sudan, South Sudan and Uganda. All of the Member States have overlapping memberships with EAC and COMESA. The IGAD Secretariat is currently located in Djibouti. IGAD is reported to have the lowest economic development level of all African RECs and not surprisingly, a lesser developed legal framework and legislative capacity mainly due to inadequate food safety resources dedicated to addressing food safety.

Nonetheless, IGAD Member States have signed a *Regional Policy Framework on Animal Health in the Context of Trade and Vulnerability* in December 2009 (Magalhaes, 2010). Furthermore, IGAD's *Regional SPS 5-year Strategy and Plan of Action 2016/17–2021/22* was developed by the IGAD Centre for Pastoral Areas and Livestock Development (IC-PALD) which is reported to play a strategic role in developing regional strategies and tools as well as to coordinate SPS activities among Member States. IGAD Members also agreed on MOUs to facilitate joint surveillance, synchronized control and prevention of transboundary animal diseases across common borders. National SPS Committees, including a regional one, were established "to deliberate on common positions and share lessons on food safety compliance" but are not reported to be anchored in any laws as of yet (ICPALD, 2017). Coordination, participation in standard setting activities, including joint submissions, or harmonization of SPS policies and strategies among IGAD countries are considered to be at a lesser stage of development than other African RECs (ICPALD, 2017);

IGAD has also benefited from the PAN-SPO initiative which has improved the effectiveness of IGAD Members in SPS standard-setting bodies through the development of common positions (Sebsibe, 2015). WTO, in collaboration with IGAD, has conducted a regional training on SPS, Technical Barriers to Trade (TBT) and trade facilitation in 2015 in Kenya (IGAD, 2015) in order to: 1) to provide a comprehensive overview on the international agreements, 2) identify main issues affecting trade in the IGAD region, 3) create awareness on transparency and coordination on SPS and TBT standards, and 4) share good practices and experience on the role of regional SPS and TBT Committees. Another initiative, implemented by FAO: "Improving Supply of Safe and Quality Livestock and Meat Exported from the Horn of Africa to Middle East and Gulf Countries" also focused on improving public and private food safety capacities (FAO, 2017).

3.3.7. Southern African Development Community (SADC)

SADC was established on August 17, 1992 and is headquartered in Gaborone, Botswana. SADC consists of 16 states: Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, The Seychelles, South Africa, Tanzania, Zambia and Zimbabwe.

SADC has developed an SPS Annex to its SADC Protocol on Trade which was adopted in 2008 and revised in 2014. Article 7 of this protocol stipulates that each SADC Member State should establish a national SPS Committee and SPS Enquiry Points, and those national SPS Committees shall nominate two representatives to serve on the SADC SPS Coordinating Committee (Manyuwa, 2013, pp. 12–13). Based on

Article 16 of this SPS Protocol, rather than developing regional standards, SADC has focussed efforts on reinforcing harmonization through the development of regional guidelines to assist Member States in the implementation of international standards practically (Chinyamakobvu, 2017; Magalhaes, 2010). This SPS policy framework indicates that the SADC SPS Coordinating Committee is in charge of developing guidelines for Member States (Magalhaes, 2010). In addition, Annex VIII of the protocol outlines the main objectives, which contains the provision of a regional forum – the aforementioned SADC SPS Coordinating Committee – for addressing SPS measures and resolving trade related disputes (SADC, 2014). To support Member States in the regional harmonization of the regulations related to the compliance with food safety mechanisms, SADC developed "Regional Guidelines for the Regulation of Food Safety" (SADC, 2011).

The *Regional Economic Integration* Support (REIS) Programme (2013–2017) enabled SADC to improve SPS measures in the region and facilitated negotiations of the EU-SADC Economic Partnership Agreement, signed in June 2016. The *Food Safety - Capacity Building in Residue Control* (FSCBRC) initiative aimed to harmonize food safety control regulations, guidelines and procedures through institutional strengthening in the SADC region in conformity with international requirements, with the intent to increase exports while complying with consumer safety requirements (Magalhaes, 2010).

3.3.8. Arab Maghreb Union (AMU)

AMU was established in June 1988 and, as the smallest regional groupings in Africa, has only 5 states as members: Algeria, Libya, Mauritania, Morocco and Tunisia.

AMU does not have a food safety governance system and since all its Member States belong to another large regional grouping, the League of Arab States, the SPS coordination mechanism does not take place at the level of the AMU. AMU Members only collaborate with trade partners on a case-by-case basis. With regard to capacity building initiatives, the Arab Food Safety Initiative for Trade Facilitation (SAFE Initiative) (2014–2020) funded by Sweden and implemented by UNIDO aims to facilitate regional trade in food/agri-based products and to improve integration through strengthening of regional coordination and harmonization mechanisms. As part of the project, the Arab Food Safety Task Force and several working groups were established in which AMU Member States are also involved (SAFE, 2019).

4. Discussion

Table 1 offers a brief summary of existing African RECs and their respective SPS coordination capacities.

There are major differences among RECs in terms of their emphasis on the development of a SPS policy framework and/or SPS coordination mechanisms. Such policies do not exist in some regions, namely in CEN-SAD, ECCAS, IGAD and AMU, while they are well-established in COMESA and EAC, with documented annual meetings gathering representatives of national food safety competent authorities. Focussing specifically on food safety coordination mechanisms, the overlapping nature of the membership of certain RECs create some challenges as to their operation and may undermine their coordination efforts (Fig. 1). Membership in multiple RECs can lead to several difficulties for national food safety competent authorities (CAs) of a given member state,

Table 1
Summary of SPS coordination aspects in the African RECs.

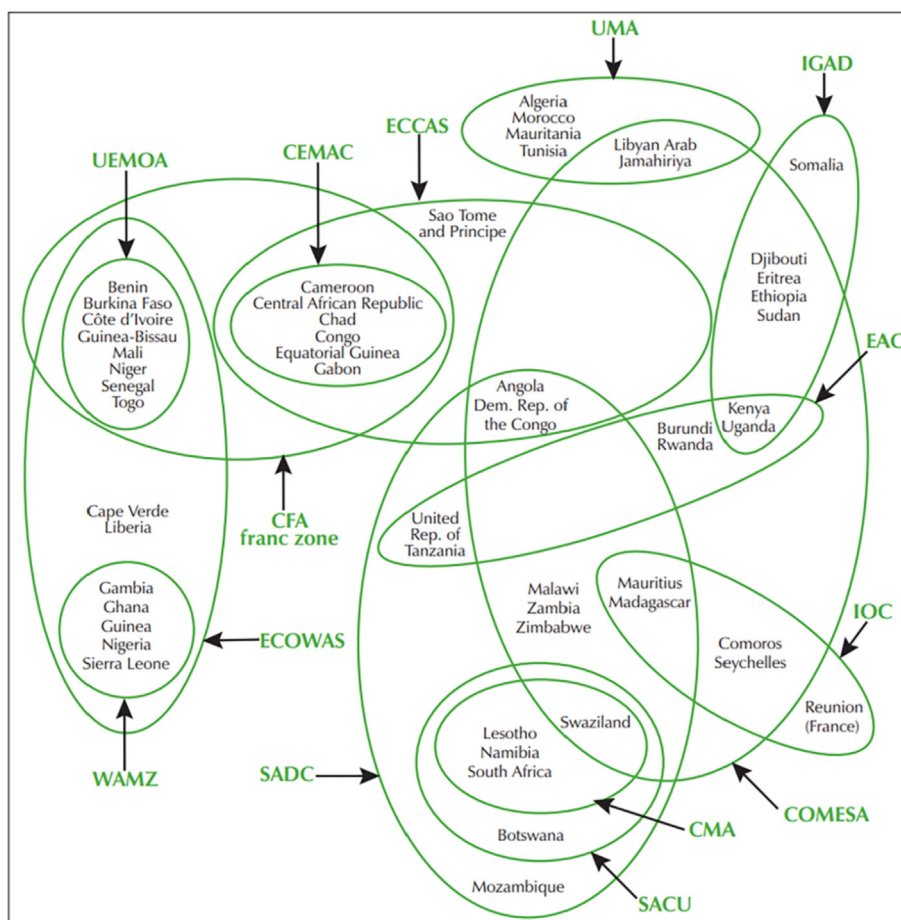|	CEN-SAD	COMESA	EAC	ECCAS	ECOWAS	IGAD	SADC	AMU
Number of Member States MSs	25	21	6	10	15	8	16	5
Operating regional SPS Committee/working group	No	Yes	No	No	Yes	Yes	Yes	No
Existing SPS policy framework	No	Yes	Yes	No	Yes	No	Yes	No
WTO ad hoc observer status on a meeting-by-meeting basis	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Codex observer status	Yes	Yes	Yes	No	Yes	Yes	Yes	No

Fig. 1. Overlapping membership in regional integration groups (UNCTAD, 2009, p.12).

having to be part of and to effectively contribute and align with more than one of food safety coordination mechanism. In general, co-ordination and harmonization endeavors require resources, financial as well as human, and a political commitment to ensure continued engagement, which in case of multiple memberships, would increase. This may be resolved either by unifying such coordination mechanisms amongst RECs, or through conducting a cost-benefit analysis through which, a member state identifies the requirements and coordination mechanisms that would be more beneficial, if choice in the matter is legally feasible. Furthermore, two RECs, namely ECCAS and ECOWAS, have sister organizations or subgroupings – CEMAC and WAEMU – creating additional coordination complications at multiple levels for this region. Similarly, the AMU does not seem to offer a forum for food safety coordination; it also overlaps with the larger grouping of Arab countries – League of Arab States – to which all five countries also belong.

Although major continental policies and strategies were formulated in recognition of the importance of agriculture for enhanced trade and nutrition, they did not emphasize the need to drive an agenda of food safety regulatory integration, at the exception of those recently reported in relation to the creation of a continent-wide food safety co-ordination and harmonization mechanism. This latter endeavor has a higher opportunity of success if it leverages existing instruments of coordination created within RECs and complements them by offering the scientific support for the development of risk-based food safety decisions to be adopted at the regional level. Moreover, such a con-tinent-wide initiative would help disseminate best practices of food safety standards coordination through existing RECs and replicate their success, with the necessary adaptation in other sub-regions. This, in turn, would offer a strategic framework for food safety standards

coordination and the identification of essential investments in food safety capacity building.

In all situations where coordination and/or harmonization of food safety interventions is warranted, it is important to rely upon an anchor point to drive such alignment. The application of the risk analysis fra-mework as a basis of food regulatory decision-making, including the use of evidence and science-based risk assessment, is a guarantor for alignment, predictability of food safety decisions and incremental re-gional integration of food safety measures.

5. Conclusion

Since food security cannot be guaranteed without access to safe food, the interest in achieving a "hunger-free" Africa would funda-mentally result in a renewed urgency for the development of relevant food safety strategies, among other SPS measures, together with effec-tive SPS coordination mechanisms to support African national compe-tent authorities. Developing food safety coordination capacity, at the level of the RECs and AUC, can act as a driver towards the adoption of optimum and harmonized food safety decisions across the continent. This is vital, in the context of the recently ratified continent free trade area (AU, 2019b), where food and agri-food products constitute an important set of commodities expected to benefit from enhanced intra-African trade. The creation of an African Food Safety Agency presents an exceptional opportunity to propel even further such integration of food safety mechanisms. This effort needs to be anchored in a robust investment in food safety science, enabling the continent to develop a pattern of food safety decisions underpinned by a scientific rationale and stemming from a logical framework that is the food risk analysis framework, as advocated by the Codex Alimentarisu Commission.

Careful planning is also needed to leverage and complements efforts of coordination previously initiated at the level of the African RECs. The projected food safety agency can therefore act as an enabler towards the realization of a more harmonized food safety environment with less disparity in food safety efforts across the continent. The proposed model, described by Godefroy, Al Arfaj, Tabarani, and Mansour (2019), for the projected Agency to play the role of a Centre of Expertise for various disciplines of food regulatory science, in particular for risk assessment and food monitoring, could provide Africa with the necessary scientific capacity required to address its need for evidence-based food safety decision-making aligned with international standards and best practices: a pre-requisite for the harmonization of food safety measures.

Declaration of competing interest

All listed authors contributed to the conception, acquisition, analysis and interpretation of data, design, critical revision and approval of the final submitted version of the manuscript. The authors have no conflict of interest to declare.

Acknowledgments

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Glossary

AEC: African Economic Community
AfCFTA: Pan-Africa Continental Free Trade Area
AFoSAN: African Food Safety Network
AMU: Arab Maghreb Union
AU: African Union
AUC: African Union Commission
AU-IBAR: African Union Inter-African Bureau for Animal Resources
CAADP: Comprehensive Africa Agriculture Development Programme
CEMAC: Central African Economic and Monetary Community
CEN-SAD: Community of Sahel-Saharan States
COMESA: Common Market for Eastern and Southern Africa
DALYs: Disability-adjusted Life Years
DREA: Department of Rural Economy and Agriculture
EAC: Eastern African Community
ECCAS: Economic Community of Central African States
ECOWAS: Economic Community of West African States
EU: European Union
GFSP: Global Food Safety Partnership
GIZ: German Development Agency
IAPSC: Inter-African Phytosanitary Council
ICPALD: IGAD Centre for Pastoral Areas and Livestock Development
IGAD: Intergovernmental Authority on Development
ISSBs: International Standard Setting Bodies
MOU: Memorandum of Understanding
NEPAD: New Partnership for Africa's Development
OIE: World Animal Health Organization

PAN-SPSO: Sanitary and Phytosanitary Standard Setting Organizations
REC: Regional Economic Community
SADC: Southern African Development Community
SPS: Sanitary and Phytosanitary
TBT: Technical Barriers to Trade

TFTA: Tripartite Free Trade Area
USAID: United States Agency for International Development
WAEMU: West Africa Economic & Monetary Union
WAHO: West Africa Health Organization
WTO: World Trade Organization