Southern and Eastern Africa Regional Technical Meeting on Preparedness and Response Actions to Emerging High Impact Transboundary Crop and Livestock Pests and Diseases

Report

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List of acronyms

AHS	African horse sickness
ASF	African swine fever
ASTF	Africa Solidarity Trust Fund
AU IBAR	African Union Inter-African Bureau for Animal Resources
CABI	Commonwealth Agricultural Bureaux International
CBAF	Community Based Army worm Forecasting
CBPP	Contagious Bovine Pleuropneumonia
CVO	Chief Veterinary Officer
DMU	Disaster Management Unit
EWS	Early Warning Systems
FAO	Food and Agriculture Organization of the United Nations
FMD	Foot and Mouth Disease
HPAI	Highly Pathogenic Avian Influenza
IPM	Integrated Pest Management
IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa
ISPM	International Standard for Phytosanitary Measures
LSD	Lumpy Skin Disease
LTC	Livestock Technical Committee
MLND	Maize Lethal Necrosis Disease
NCD	New Castle Disease
NPPO	National Plant Protection Office
OIE	World Organization for Animal Health
PRA	Pest Risk Analysis
PPR	Peste des Petits Ruminants
RVF	Rift Valley Fever
SADC	Southern African Development Community
SFS	Sub- regional Office for Southern Africa
SOPs	Standard Operating Procedures

SPS	Sanitary and Phytosanitary
SRC	Sub-regional Coordinator
TADs	Transboundary Animal Diseases
TBPD	Transboundary Plant Pests and Diseases
UN	United Nations
WHO	World Health Organization
WTO	World Trade Organization

Acknowledgements

The Southern and Eastern Africa Regional Technical Meeting on Preparedness and Response Actions to Emerging High Impact Transboundary Crop pests and Livestock Diseases in Southern and East Africa brought together a range of actors with experience and expertise in the management of these threats. The Organizers of this event; Food and Agriculture Organization (FAO) of the United Nations; Southern African Development Community (SADC) and the International Red Locust Control Organization for Central and Southern Africa (IRLCO-CSA) would like to thank governments in the region as well as all other organizations and institutions who contributed to this noble cause.

The financial support accorded by FAO, United States Agency for International Development (USAID), United Kingdom Department for International Development (DFID) and the Africa Solidarity Trust Fund (ASTF) made it possible to convene the meeting and is acknowledged. The enthusiasm, vibrant contributions and team spirit exhibited by participants in developing appropriate actions and recommendations for enhanced Preparedness and Response Actions is commendable. All resource persons gave of their time and went an extra mile to ensure that the meeting went on smoothly, this did not go unnoticed. Finally, the hospitality accorded by the Government of Zimbabwe in hosting the meeting, logistical support by FAO-SFS and the training venue provided by Cresta lodge, Harare is appreciated.

Executive summary

The Food and Agriculture Organization of the United Nations (UN) in collaboration with the Southern Africa Development Community (SADC) and the International Red Locust Control Organization for Central and Southern Africa (IRLCO-CSA) organized a three day Regional Technical Meeting on emerging and re-emerging high impact transboundary pests and diseases of crops and livestock in Harare, Zimbabwe. It was attended by key government ministries and departments responsible for disaster management, plant protection and animal health and production from countries that are affected or are at risk from priority transboundary crop pests and animal diseases. Participants were drawn from Eastern and Southern African countries, namely; Angola, Botswana, Lesotho, Madagascar, Malawi, Namibia, Tanzania, Seychelles, South Africa, Uganda, Rwanda, Kenya, Zimbabwe and Zambia. The meeting was also attended by specialist regional and international organizations, UN agencies, development partners, academia, inter-governmental organizations, non-governmental organizations (NGOs), private sector, media and other major stakeholders. Over 100 persons attended the meeting and its objectives were to; provide a platform for sharing of information, experiences and knowledge on emerging and re-emerging high impact transboundary pests and diseases of crops and livestock in the region, assess the preparedness and response capacities of countries, identify key constraints and opportunities for more effective response and collaborative management of these threats and to share good practices and to suggest a harmonized action plan aimed at improving countries preparedness and early response for pest and disease threats. There are multiple emerging and re-emerging high impact transboundary crop and livestock Pests and diseases but the meeting mainly focused on preparedness and response to; Fall Armyworm, Tomato Leaf Miner and the Highly Pathogenic Avian Influenza (HPAI) which are currently affecting or threatening the Southern African region, with potentially devastating impacts on livelihoods and food security.

Among the high impact transboundary plant pests and diseases (TBPD) is the Fall Armyworm which was first reported in Southern Africa in December 2016 and by Mid-February 2017, it had been identified in Zambia, Zimbabwe, Malawi, Namibia, Botswana, Mozambique and South Africa. The pest has a wide range of crops in can feed on, but has mainly been reported on maize and millet in major production areas. Though the damage caused by the pest is clearly evident its' full geographical distribution and impact at national level will only emerge later. Gaps on the biology, epidemiology and appropriate sustainable management options of Fall Armyworm under the Southern African Region conditions exist. The Fall armyworm is; native to the Americas and it is extremely difficult and expensive to manage. Currently, synthetic pesticides are the management option commonly employed by farmers and national governments in Southern Africa. Tomato leaf miner is another devastating pest reported in Seychelles, Zambia, Zimbabwe, Tanzania, Angola, Botswana and Namibia. In addition, Maize Lethal Necrotic Disease is an eminent threat to SADC Region and to date it has only been reported in two member states. Mild outbreaks of the African Armyworm were reported in Tanzania, Zimbabwe and Malawi. While this meeting was in progress, control operations for both Red and African Migratory locusts was on-going in outbreak areas in Kafue plains in Zambia and additional outbreaks requiring monitoring had

been reported in Tanzania, Malawi and Mozambique. These threats could have multiplier effect on the already fragile crop production and food and nutrition security systems in the region.

With regards to high impact livestock diseases, the Eastern Africa region is currently on high alert, following the recent incursion of H5N8 highly pathogenic avian influenza in Uganda and the ongoing combination of H5N1 and H5N8 HPAI in West and Central African countries. In Uganda, the H5N8 strain of HPAI was initially detected in wild migratory birds, along the shores of Lake Victoria, in January 2017. According to the WHO, 'human infection with the A(H5N8) virus cannot be excluded, although, based on the limited information available, the likelihood is low'. So far, this recent H5N8 HPAI outbreak appears to be restricted to Uganda where an estimated 371 wild birds and 5 368 domestic birds are reported to have died but this was likely to be an under-estimate. Risk assessments show a high probability of HPAI spread to Tanzania, Kenya, Rwanda, DRC and Southern African countries mainly attributed to; the southward seasonal wild bird migration flight pathways, the low levels of awareness of the disease among communities and national authorities and the widespread legal and illegal cross-border trade in live birds and poultry products. The meeting highlighted; the great genetic diversity, the occurrence of multiple incursions in different African countries, propensity for continuous evolution of HPAI viruses and the need for close monitoring and surveillance. Other transboundary animal diseases (TADs) affecting or threatening the region as discussed include; Rift Valley Fever (RVF), Foot and Mouth Disease (FMD), Peste des Petits Ruminants (PPR) and Contagious Bovine Pleuropneumonia (CBPP).

During the meeting, the overall state of preparedness at regional and national levels in addressing emerging and re-emerging transboundary pests and diseases of crops and livestock was assessed; with a focus on; existing information and surveillance systems, early warning systems, contingency planning, rapid response and coordination. Existing regional efforts for the management of these threats include; the Migratory Pest Policy, Sanitary and Phytosanitary (SPS) Annex to SADC trade protocol, Fruit fly Implementation Strategy and the HPAI Response Plan among other collaborative efforts. The effective implementation of the above has been constrained by the low participation of member states in regional animal and plant health forums, as well as non-functional or sub-optimally operating regional pest and disease reporting mechanisms to alert member states of eminent threats and limited resources. The current regional level structures in place for the management of transboundary pests and diseases of crops and livestock include; Regional plant protection and animal health technical committees, Agriculture information system, SPS coordination committee and emergency platforms.

The overall situation at national level revealed that; information and surveillance systems vary across member states but generally are relatively weak such that; in some SADC member states Early warning systems (EWS) exist, contingency plans are in place, responses in emergency situations vary from country to country and coordination efforts need further streamlining. Thus the meeting achieved its objectives as evidenced by; a) the sharing of experiences, information and knowledge on emerging and re-emerging transboundary pests and diseases of crops and animals by over 16 experts and a further 28 presentations by countries represented, b) the

capacity of preparedness and response capacities of countries were; assessed and opportunities for improvement identified, and c) harmonized action plans aimed at improving the countries and the SADC Region's preparedness and early response to pest and disease threats developed. The current level of Preparedness at national and regional levels can be significantly improved and the recommendations made for this to be realized are summarized below;

1. The existing information and surveillance systems are constrained by; variability in quality of information gathered, limited surveillance and inadequate sharing of information. To address these gaps at both national and regional levels, it is recommended that capacity building be undertaken and pest risk analysis (PRA) teams established, member states undertake surveillance in accordance with international treaties, develop standard operating procedures and improve information sharing at national level. Further, to facilitate information sharing at Regional level, the non-functional ICOSAM should be revived, support for the Livestock Information Management System (LIMS) enhanced, member states commit to reporting obligation in line with SPS Annex to SADC trade protocol and develop a Regional Communication Strategy.
2. Early warning/Early Alert systems are absent in some SADC member states and where present are fragmented or non-operational which poses a challenge to developing the regional EWS as it draws from nationally generated information/data. It is recommended that further training on PRA and early warning (EW) be conducted, support accorded to development of binding policies and national governments commit to timely sharing of information. Further, the existing information communication technology infrastructure for locust EW should be upgraded and budget allocation increased.
3. Existing contingency plans where they exist are outdated and constrained by; inadequate technical capacity in Disaster Management Units (DMUs), lack of flexibility to accommodate contingency frameworks and budgetary limitations. It is recommended that policy makers be engaged to facilitate updating of contingency plans at national and regional level, review legal frameworks, strengthen in-country collaboration and develop harmonized regional contingency plans. To realize Rapid Response in emergency situations, it is recommended that essential structures be established, ensure adequate resource allocation, key stakeholders be engaged for collective interventions and support accorded to strengthen diagnostic and technical capacity.
4. To enhance coordination at national and regional levels, it is recommended that governments support national SPS committees, increase resources allocated to DMUs, revive relevant SADC structures and support regular regional technical committee forums.
5. It is recommended that targeted aggressive awareness creation campaigns be launched to enlighten stakeholders on risks associated with transboundary pests and diseases and risk communication supported to facilitate appropriate action by stakeholders.

6. Several emerging and re-emerging pests have been recently introduced and reported in the African continent. It is recommended that priority research areas be supported to address knowledge and information gaps, including development of appropriate integrated management options under the Southern Africa region conditions, pest and disease epidemiology, genetic diversity and evolution of HPAI virus among others.
7. To address the gaps identified, participants developed action plans and it is recommended that these be customized to national situations and implemented at national and regional level.

1.0 Introduction

1.1 Background Rationale

Most of southern Africa has received sufficient rains during the 2016/17 season to replenish depleted water bodies, poor rangelands and support productivity of the agriculture systems. The ample rainfall increases the prospects of favorable harvests, thus improving the food, income and nutrition security of millions of agro-pastoral and pastoral communities affected by the El Niño drought of the 2015/16 agricultural season. However, the 2016/17 season is facing increased transboundary crop pests and livestock disease outbreaks, posing a threat to agricultural livelihoods and weakening the El Niño drought recovery efforts instituted by governments and smallholder farmers in the SADC Region.

Cereal crop-eating caterpillars have infested maize fields in Namibia, Malawi, Mozambique, South Africa, Zambia and Zimbabwe and the respective governments have launched chemical spraying operations to control the pests. While pest identification is still being awaited in some countries, there is increasing evidence that the main pest is the Fall Armyworm which was first reported on the African continent in West and Central Africa in June 2016. Fall Armyworm is native to the Americas and extremely difficult and expensive to manage. There are also reports of African Armyworm outbreaks in Tanzania, Malawi and Zimbabwe. The African Armyworm not only causes damage to cereal crops, but also to pastures and rangelands, and could lead to livestock losses due to a combination of starvation due to; loss of pasture and poisoning caused by high cyanide levels induced in *Cynodon* grasses by armyworm damage, and possible ingestion of the caterpillars or fungal *mycotoxins* found on armyworm frass waste. In addition to the Fall Armyworm, large populations of red and migratory locusts have been observed in traditional breeding areas in Kafue plains in Zambia and also in Tanzania, Malawi, Mozambique and Zimbabwe. The potential combined effect of locust and armyworm outbreaks would be catastrophic, leading to further crop losses and extensive destruction of rangelands. Additionally, such an outbreak would require massive chemical intervention, posing further serious human and animal health risks and environmental contamination. Furthermore, alien tomato leaf miner (*Tuta absoluta* (Meyrick), first recorded in Africa in 2008 has now been reported in Angola, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia and Zimbabwe and is causing immense negative impact on food security, trade and livelihoods. Forecasts indicate that as the season progresses, plant pests and diseases are likely to spread to other countries in the region, with adverse effects on the food security and livelihoods of small holder communities.

With regards to high impact livestock diseases, the Eastern Africa region is currently on high alert, amid the spread of H5N1 highly pathogenic avian influenza (HPAI) in West and Central African countries and confirmation of the H5N8, another strain of HPAI in both wild and domestic birds along the shores of Lake Victoria, in Uganda. Avian influenza A (H5N8) viruses have been rapidly spreading, mostly via wild migratory birds in Asia and Europe, causing deaths in wild birds and outbreaks in domestic poultry. According to the WHO, 'human infection with the A(H5N8) virus cannot be excluded, although, based on the limited available information, the likelihood is low'. For now, the H5N8 HPAI outbreak appears to be restricted to Uganda, where the disease has caused death of an estimated 371 wild birds and 5 368 domestic birds. However, reports from communities in the affected districts indicate that wild bird deaths have been observed since December 2016, indicating that the incursion of the virus may have preceded official reports, thereby increasing the likelihood of transboundary spread. Given the; southbound flight paths for seasonal wild bird migrations, low levels of awareness of the disease among communities and national authorities and the legal and illegal trade in live birds and poultry products, the risk of spread to Tanzania, Kenya, Rwanda, the Democratic Republic of Congo and Southern African countries is significantly high in Africa, HPAI subtype H5N8 has been reported in Egypt, Nigeria, Tunisia, Cameroon and Uganda, no other outbreaks of HPAI strains have so far been reported in countries neighboring Uganda and in the Southern Africa region, this scenario challenges regional and national capacities to detect,

respond to, control and eliminate H5N8 HPAI, putting excessive pressure on livestock, wildlife and human populations throughout the region. HPAI viruses can devastate both the small scale and commercial poultry industry, threatening people's livelihoods, and limiting access to a source of high quality and inexpensive dietary protein. Human populations in the region are also at risk should an influenza epidemic occur. Additional threats to animal sector include the increased prevalence of animal and zoonotic disease vectors and risk of outbreaks of zoonotic disease (affecting animals and humans) vector-borne diseases such as Rift Valley Fever (RVF).

Considering the high rate at which these crop pests, livestock and zoonotic spread and the threat to food and nutrition security, livelihoods and human health, there is urgency to ensure containment of the threats; raise awareness and strengthen the surveillance, preparedness and response capacities of affected and at risk countries in the Southern and Eastern Africa regions. These actions should augment national and regional initiatives and leverage on existing coordination and plant protection mechanisms. It is within this context that FAO in collaboration with SADC and IRLCO-CSA convened a three-day Regional Technical meeting on emerging high impact transboundary crop pests and animal diseases for Southern and Eastern Africa. The meeting targeted regional economic communities and key government ministries and departments responsible for disaster management, plant protection and livestock health and production from countries at highest risk of key transboundary crop pests and livestock diseases. The meeting outcomes are expected to complement the ongoing FAO interventions under the Africa Solidarity Trust Fund (ASTF) project "Strengthening controls of food safety threats, plant and animal pests and diseases for agricultural productivity and trade in Southern Africa".

1.2 Objectives, deliverables and participants

The aim of the Technical meeting was to raise awareness and develop strategies to improve preparedness and response to emerging and re-emerging high impact transboundary pests and diseases. The specific objectives were to:

1. Provide a platform for sharing of information, experiences and knowledge on emerging and re-emerging transboundary pests and diseases of crops and livestock in the region.

2. Assess the preparedness and response capacities of countries; identify key constraints and opportunities for more effective response and collaborative management of transboundary pests and diseases of crops and livestock and to share good practices.

3. Suggest a harmonized action plan aimed at improving countries preparedness and early response to transboundary pests and diseases of crops and livestock.

Deliverable

The key deliverable is a report highlighting main achievements and recommendations from the Technical meeting.

Participants

The workshop brought together a total of 101 participants. Fourteen African countries were represented and included; Kenya, Uganda and Rwanda from East Africa and all SADC member states except the Democratic Republic of Congo, Mozambique, Mauritius and Swaziland who were unable to attend. With the exception of Tanzania, Seychelles and Lesotho, the southern Africa participants consisted of beneficiary countries of the ASTF project namely; Angola, Botswana, Madagascar, Malawi, Namibia, Zambia, South Africa and Zimbabwe. Participants were drawn from Government representatives departments namely; Plant Health Focal Point,

Animal Health Focal Point and Chief Veterinary Officer, Disaster Management Units and Wildlife Veterinarians. The meeting was also attended by specialist regional and international organizations, Research Institutes and Diagnostic Laboratories, development partners, UN agencies, development partners, academia, inter-governmental organizations, NGOs, private sector, media and other major stakeholders. Thus, the meeting was attended by multiple stakeholders and the unique expertise and experiences of the participants enriched the deliberations. Details of the participants and individual organizations represented are provided in Annex 1.

2. Meeting process and opening session

2.1 Pre- meeting process

The meeting was organized by FAO Sub-regional Office for Southern Africa in partnership with IRLCO-CSA and SADC. Prior to attending the meeting, participants were provided with reporting guidelines to assist them prepare a brief presentation on the status of the emerging and re-emerging high impact plant pests and animal diseases in their respective countries. All logistics including communication with participants, travel arrangements, accommodation, meals and booking of meeting venue were provided by FAO. The meeting ran from 14th to 16th February 2017 and was held at Cresta Lodge in Harare, Zimbabwe.

2.2 Meeting process

The meeting employed a range of approaches including; power point presentations and discussions, group work and plenary, question and answer sessions. To also allow for detailed sector discussions and development of action plans, plant health and animal health experts held separate break away sessions (See program details in Annex 2). Highlights of the presentations are provided in section 3.0.

2.2.1 Opening session

In his opening remarks, the FAO Sub-regional Coordinator for Southern Africa, Dr David Phiri welcomed; the Permanent Secretary of Agriculture, Mechanisation and Irrigation Development, representing the Government of Zimbabwe, representatives from SADC, the World Organisation for Animal Health (OIE), Director of the IRLCO-CSA, Development Partners, FAO staff, representatives of UN Agencies, NGOs, media fraternity, government officials from participating countries and the private sector. He pointed out that the meeting was convened to deliberate on the appropriate response to transboundary crop pests and animal diseases which are threatening crop and livestock production in the SADC region and pose a risk to the anticipated above average agricultural production during the 2016/2017 season; attributed to ample rainfall received. The FAO Sub-regional Coordinator (SRC) for Southern Africa stressed that the meeting had brought together participants with extensive knowledge and experience on the response and management of transboundary crop and livestock pests and diseases from a wide range of stakeholders. He pointed out that among the threats to crop production is the Fall Armyworm (*Spodoptera frugiperda*), a new pest reported in 7 SADC member states within a span of about 60 days (December 2016 to Mid- February 2017) and is native to the Americas. The pest has damaged maize in

several countries in the region and appears to be moving in a North to South trajectory. The major cause for alarm is that Fall Armyworm has affected maize, a key staple for most people in Southern Africa and has been reported in main production areas in the region. Consequently, the governments of affected countries are concerned about the danger posed to agriculture and food security by the Fall Armyworm in addition to the huge costs incurred in pest management efforts. Although the actual costs and damage caused by the pest in the different countries are yet to be fully ascertained, it is estimated that the pest will lead to significant reductions in maize crop yields and thereby presents a huge threat to food security. Other plant pests cited as threatening the region include; African Armyworm, Red and Migratory locusts and the tomato leaf miner which is native to South America and recently reported in SADC Region; causing huge yield and qualitative losses in addition to disrupting tomato trade.

In the livestock sector, the threat posed by the Highly Pathogenic Avian Influenza H5N8 which has broken out in Uganda, killing thousands of migratory wild birds and also spread to domestic poultry with high mortality was singled out as a concern. The HPAI strain H5N8 is a serious threat to the poultry industry. The SRC pointed out that Southern Africa is at high risk of the disease due to its position along the migratory pathways of wild birds and the ongoing rainy season also provides wetlands around which migratory birds tend to congregate. Other transboundary animal diseases (TADs), which threaten livelihoods, food security and public health were highlighted as FMD and RVF.

The speaker hoped that outbreaks of transboundary crop pests and animal diseases in Southern Africa and the magnitude of their impacts will provide benchmarks upon which the region should mirror itself in terms of its early warning, preparedness and response capacity. It was stressed that regional approaches are more effective in managing transboundary crop pests and animal diseases but must be pegged on; better information sharing and use of existing regional platforms in accordance with regional and international standards and guidelines, strengthened preparedness and response capacities and enhanced partnerships for early warning, early action and adaptive research. Also emphasized particularly with respect to the Fall Armyworm and other priority TADs was the need for resources to strengthen surveillance, monitor the behavior and impacts of the pests and diseases in the short, medium and long term in order to quantify the damage potential and develop sustainable management solutions under Southern Africa environment and the participation of all key stakeholders; including government decision makers, farmers, research and academic institutions, extension services, diagnostic laboratories as well as the private sector. The FAO Sub-regional Coordinator for Southern Africa echoed FAO's commitment to working with governments, SADC, OIE, IRLCO-CSA and other relevant stakeholder to strengthen preparedness and response capacities to transboundary pests and diseases as well as other shocks to collectively strengthen the resilience of farmers and their farming systems to the threats. He thanked all participants for attending the meeting at short notice, the Government of Zimbabwe for its hospitality in hosting the meeting; SADC and IRLCO-CSA for supporting the organization of the event, the media for informing the world about the evolving situation in the region and the United States Agency for International Development

(USAID), United Kingdom Department for International Development (DFID) and the ASTF for their financial contributions.

Opening Remarks from Southern Africa Development Community

The representative of SADC secretariat Dr Esaih Tjele thanked; FAO and partners for convening the meeting, the Government of Zimbabwe for hosting and all present for taking time to attend the meeting. The efforts to bring livestock and plant health experts together was commended as it offered an opportunity for SADC Region to identify priority areas for intervention in pursuit of enhancing food security, livelihoods and promoting trade. In addition, the speaker emphasized that through the regions strategic priorities, the crop and livestock priorities are well highlighted. Also underscored was the European Union supported SADC-FAO initiative which is expected to commence in 2017 and lays emphasis on TBPPD and TADs which are a threat to the region. The speaker was optimistic that the action plans developed during the meeting would be implemented.

Opening Remarks from World Organization for Animal Health

The representative of the World Organization for Animal Health (OIE) Dr Moetapele Letshwenyo stated that the organization is an International Standard Setting body and focuses on animal health. He thanked FAO for the timely intervention before HPAI threat was reported in the SADC Region. Further, the speaker emphasized that OIE is committed to play her role to prevent and if possible assist in prevention of HPAI threat to the region. The Organization pledged to continue in its role in training on good practices and clarifying roles. It was emphasized that OIE has 8 focal points including that for disease identification. The focal points play a pivotal role in notifying chief veterinary officers (CVOs) and OIE. Also emphasized was that the threat to plant health is a concern to the livestock sector because it has a negative impact on access to feed. In concluding, the OIE representative stressed that the impending HPAI threat to the SADC Region requires enhancing preparedness and effective prevention and management calls for coordinated efforts.

Opening Remarks from IRLCO-CSA

The IRLCO-CSA Director Dr Moses Okhoba spelt out the mandate of the organization and also highlighted the immense cost associated with the management of migratory pests. The need to control Red locusts before they can fledge and form swarms was highlighted particularly because; it has known outbreaks and invades a large area and outbreak areas are relatively small compared to the invasion areas, with a ratio of 1: 1500. Also emphasized is that IRLCO-CSA plays a critical role in pest control but is constrained by limited equipment at their disposal for both ground and aerial operations.

Official opening

The meeting was officially opened by the Minister of Agriculture, Mechanization and Irrigation Development (Honorable Dr Joseph M Made) who was represented by the Permanent Secretary (Mr Ringson Chitsiko). The

Minister acknowledged; the FAO Sub-regional Coordinator for Southern Africa and Zimbabwe country representative, IRLCO-CSA Director, representatives from; SADC, cooperating partners-USAID, EU, UK Aid, SDC and Senior Government Officials, heads of UN Agencies and International Development and Humanitarian organizations and all present. The minister commended the timely scheduling of the meeting and stressed on the increasing threat to the 2016/17 agriculture season from transboundary crop pests and livestock disease outbreaks. Among these threats, the Fall Armyworm that has infested maize fields was singled out. Also, tomato leaf miner was highlighted as another new invasion causing havoc in the farming community and has resulted in increased tomato prices due to shortages induced by the damage to the crop. In the livestock sector, the key threats cited include; the FMD which remains a threat to trade and Peste des Petits Ruminants disease. The Minister commended FAO through its Regional Initiatives and in partnership with SADC and IRLCO-CSA for convening the meeting in Zimbabwe. Among other meeting objectives was to provide a platform for sharing of information, experiences and knowledge on the emerging and re-emerging trans-boundary crop pests and livestock diseases in the region and was hailed as noble. Also pointed out as critical was bringing together several countries' government departments and regional institutions that deal with transboundary pests and disease on a daily basis to interact and find common ground for effective coordination for future successful implementation of management and control programs for these pests and diseases. The Minister reiterated Zimbabwe's continued efforts and commitment to taking her people out of abject poverty and deprivation in line with the United Nations Sustainable Development Goals as demonstrated through the endorsement of the June 2014 Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods. In addition, the minister encouraged participants to work diligently to ensure development of comprehensive regional and national strategies that are going to provide solutions to problems of the emerging pests and diseases so that our economies accrue the benefits of enhanced food security and trade. In concluding, the Minister thanked participants for taking time to work towards the development of these important strategies for crops and livestock focused agricultural development, wished them fruitful deliberations and ultimate implementation of activities (See Annex 3 for the full Official Opening speech).

3.0 **Highlights of presentations**

31 General status of transboundary plant pests and disease spread in the region and the state of preparedness (challenges and opportunities)

The FAO expert, Dr Sina Luchen highlighted the spread of transboundary plant pests and diseases (TBPD) in the SADC region and pointed out that Fall Armyworm is new in the region, has so far been reported in 7 SADC member states and is viewed as a shock to the agriculture systems. Tomato leaf miner, is another transboundary pest first reported in the SADC Region in Tanzania and is having devastating impact on tomato production in a further 7 countries. The African Armyworm, Red and African Migratory Locusts were cited as standing pest threats in the Region. Banana wilt caused by *Fusarium oxysporum f. sp. Cubense* Tropical Race 4 has been

reported in a number of SADC member states while MLND has only been reported in Tanzania and Democratic Republic of Congo though it is widespread in Eastern Africa. The TBPD are interacting with non-biotic shocks, including floods and droughts to further weaken the fragile agriculture systems. Stressed was that while the pest affects many actors, its effect is most pronounced among the most vulnerable and if unchecked, it will continue to have increasing socio, economic and environmental costs including increased production costs, enhanced use of pesticides often associated with limited adherence to guidelines, food safety and environmental concerns (in some African countries), disruption of trade and compromised food security. The speaker touched on the SADC Regions level of preparedness to combat emergencies as benchmarked on response to Fall Armyworm and pegged on; access to information and surveillance, resource availability, coordination of players, role of National Plant Protection Organizations (NPPOs) in the process, reporting mechanisms, presence of clear guidelines, roles and responsibilities, coordination and presence of networks. It was noted that response efforts encountered challenges including; slow information flow, limited team efforts, lag in accessing diagnostic services and finances. In concluding, the speaker stated that preparedness can be significantly enhanced by exploiting existing opportunities namely; relatively stable political environment, functional NPPOs, well trained human resource within the region, high awareness of the situation and the existing inter-country intervention through SADC. It was also emphasized that pre-requisites to improving preparedness include; better understanding of the pests, damage inflicted and good coordination.

3.2 Highly pathogenic avian influenza: Lessons learned

The lessons were shared by Dr Eran Raizman from the FAO Reference Laboratory for HPAI who pointed out that there are several types of Avian Influenza and among those affecting poultry are the low and highly pathogenic Avian Influenza strains. Some strains of the latter are zoonotic. Within the African continent, the HPAI strain H5N1 was first reported in West Africa in 2014. It was emphasized that FAO has immense expertise and experience in Avian Influenza and is focused to prevent its spread in Eastern and into Southern Africa. For this to occur, the expert shared lessons and situations from other continents, these are outlined as;

- Passive surveillance must be appreciated as the cornerstone in battling HPAI and must be backed by compensation program. Further, some knowledge in basic epidemiology and good reporting mechanisms are important for passive surveillance. It was also pointed out that awareness about the disease does not always translate into improved reporting.
- Active surveillance is more expensive than passive and is therefore not always sustainable as it requires well equipped laboratories and skilled manpower. Also emphasized is that biosecurity measures are best based on local solutions.
- Another important lesson is that compensation plays a pivotal role in encouraging timely reporting and factual timely communication is important in guiding actors.

3.3 Situational update on HPAI (H5N8) outbreak in Uganda, impacts, control measures, challenges and outlook for the country and region

The FAO ECTAD manager in Uganda, Dr Fredrick Kivaria gave an overview of the global distribution of HPAI and its initial detection and report in Uganda. The importance of surveillance, networking and access to strong diagnostic services was stressed. The speaker stated that so far, the recent H5N8 HPAI outbreak appears to be restricted to Uganda where an estimated 371 wild birds and 5 368 domestic birds are reported to have died but this was likely to be an under-estimate. However, risk assessment conducted so far show a high probability of HPAI spread into Tanzania, Kenya, Rwanda, DRC and Southern African countries mainly attributed to; the southward seasonal wild bird migration flight pathways, the low levels of awareness of the disease among communities and national authorities and the widespread legal and illegal cross-border trade in live birds and poultry products. The assessment showed high probability of entry, exposure and spread of the virus into high risk countries (see wild bird migration flight path as depicted in Figure 1). The speaker also touched on risk mitigation and associated challenges.

Figure 1: Wild bird migratory pathways into Africa: Note routes and potential risk of introduction of the Highly Pathogenic Avian Influenza into virus free areas

3.4 The short to medium term Locust threat in Southern Africa: What needs to be done?

The IRLCO-CSA Director Dr Moses Okhoba, spelt out the mandate of the organization and also highlighted the immense cost associated with the management of migratory pests as illustrated by the 37 Million dollars incurred

in the management of Madagascar plague (Malagasy Migratory locust campaign 2013-2016). It was pointed out that the brown locust has a limited distribution and is well managed in Southern Africa and the need to control Red locusts before they can fledge and form swarms was highlighted. Also stressed is the critical role played by IRLCO-CSA in migratory pest control although constrained by operational budgets and limited equipment at their disposal for both ground and aerial operations. To cover the shortfall, IRLCO-CSA hires some equipment from the private sector including fixed wing sprayers; although the airstrips used for these operations are challenging, operation environment is subject to flooding and has poor road network. Further, the organization owns only two trucks which must transport equipment and supplies to strategic points before the air craft lands. It was pointed out that the SADC region has a total of 6 vehicle mounted sprayers and some governments have to import motorized sprayers in emergency situations. In addition to using organic pesticides for locust control, IRLCO-CSA employs a bio-pesticide (Green Muscle) for the control of hoppers in sensitive ecologies. The organization also provides pheromone traps for African Armyworm monitoring. Pest control operations done by IRLCO-CSA are expensive and it was estimated that the ongoing Red and African Migratory Locust operations in Zambia alone was expected to cost 1 Million USD while to cover the entire SADC Region requires 4 Million USD.

3.5 Transboundary pests (Fall Armyworm and African Armyworm) current invasions and their impact

The topic was covered by Professor Ken Wilson from Lancaster Environment Center. The speaker pointed out that the Fall Armyworm is native to and largely confined to the Americas. Within the African continent, the pest was first report in West Africa in 2016 and less than one year later, it had also invaded Southern Africa and by Mid-February 2017, it was identified in Zambia, Zimbabwe, Malawi, Mozambique, South Africa, Namibia, Botswana and Democratic Republic of Congo. Fall Armyworm is the major pest of maize in Brazil. The Region continues to also battle with the African Armyworm. The Africa Armyworm builds its population on pastures and remains visible on the plant surface while the Fall Armyworm oviposits (lays eggs) directly on the main host (infested plant) leaf surface, larvae burrows into the plant where it continues to cause damage and remains out of reach by commonly used contact pesticides. Further; Fall Armyworm has a wide host range and has been reported in over 80 plant species belonging to 27 families, has high reproductive and dispersal potential; completing 10-12 cycles within one year under the favorable warm tropical environment. The use of organic pesticides in Fall Armyworm control is common but development of resistance has been reported and the negative impact of the chemical on human and animal health, food safety and the environment is also cause for concern. In America, the use of Maize hybrids carrying *Bacillus Thuringiensis* (Bt) gene for the management of Fall Armyworm is common but field resistance to Bt genes has been reported. There is on-going investment in the development of botanicals against the Fall Armyworm especially from the Annonacea family and these could hold the key to sustainable interventions in the future.

Figure 2: Damage caused by Fall Armyworm on Maize. Note: Fall Armyworm on leaf, damage on inflorescence and leaves featured on top left, top right and bottom respectively)

3.6 Risk Communication as a key tool in responding to transboundary pests and diseases

The FAO-SFS head of communication unit Mr Edward Ogolla focused on the important role of risk communication in responding to transboundary plant pests and animal diseases. The need for clear messages devoid of scientific jargon and use of trusted and credible messengers was emphasized. Further, the speaker stressed that the competence of the messenger accounted for 80% of how the audience responded to messages. It was pointed out that during stress period, it is important for audience to know that the speaker cares and empathizes. The use of appropriate channels of communication for target audience and levels of communication were also highlighted.

3.7 Plant Health Break away Session

3.7. 2 State of preparedness to address emerging and re-emerging high impact transboundary plant pests and diseases in SADC Region

The plant health session included presentations on; the current status of TBPD and Fall Armyworm in the SADC Region in addition to showing the state of preparedness in addressing the emerging and re-emerging pests at regional and national levels. Further, country level presentations highlighted the TBPD outbreaks reported during 2016/17 and these are summarized in table 1. The overall state of preparedness to address emerging TBPD at regional and national levels was assessed with a focus on; existing information and surveillance systems, early warning systems (EWS), contingency planning, rapid response and coordination. Presentations were followed by plenary sessions and formulation of action plans. Summary of the proceedings of the session are provided below.

An overview of transboundary pests in the region: Current status

This topic was covered by Dr Rose Njeru who pointed out that the SADC Region is battling with multiple emerging and re-emerging high impact transboundary plant pests and diseases which include, Oriental fruit fly, Banana Wilt caused by *Fusarium oxysporum f. sp. Cubense* Tropical Race 4, Maize Lethal Necrotic Disease causal agents, African Armyworm, Fall Armyworm, Migratory locusts and Tomato leaf miner (*Tuta absoluta*). The speaker focused on; Red and African Migratory locusts, *Tuta absoluta* and Armyworms. *Tuta absoluta* is native to South America, has a wide host range and damages tomatoes at all stages of development. Within the SADC Region, it has been reported in; Seychelles, Zambia, Zimbabwe, Tanzania, Angola, Botswana and Namibia. The pest is impacting negatively on tomato yield and quality, trade, food and nutritional security. Furthermore, in January 2017, the African Armyworm (*Spodoptera exempta),* an economic pest of cereal crops, pastures and rangelands was reported in Matebeleland North province in Zimbabwe, Morogoro and Lindi Regions in Tanzania and in Shirley Valley in Malawi. These mild outbreaks were put under controlled. In addition,

a new species of Armyworm, the Fall Armyworm which was first reported in SADC Region in December 2016 has now been confirmed in Zambia, Zimbabwe, Malawi, Namibia, Botswana, Mozambique and South Africa. This devastating pest has a wide host range, high reproductive and dispersal potential, cannibalistic ability and has mainly been reported in maize and sorghum fields in major production areas in SADC Region. Also highlighted were the 2017 outbreaks of both Red and African Migratory Locusts mainly in Kafue plains in Zambia where 20,000Ha was invaded, 1600Ha of maize fields and 9000Ha of pasture. In addition, hopers and bands were reported in Malagarasi Basin and Ikuu-Katavi plains in Tanzania, Lake Chilwa/Lake Chiuta plains in Malawi and Buzi-Gorongosa plains in Mozambique and Zimbabwe within January 2017.

Figure 3: Typical tomato fruit damage (left) caused by Tomato leaf miner and subsequent rotting (right) resulting from secondary infection.

The impact of the emerging and re-emerging high impact transboundary pests was summarised as;

- Threat to food and nutritional security and livelihoods. Example, *Tuta absoluta* causes up to 100% yield loss on tomatoes, reduces fruit quality and the rot arising from secondary infection renders the fruit unfit for consumption. Shortage of tomato fruits lead to increased market prices thereby limiting access. The damage impacting negatively on trade and livelihoods. In the case of Fall Armyworm, there are reports of maize crops being completely destroyed in Namibia and farmers having to replant.

- Pest invasions result in increased production costs associated with pest management and replanting of fields.

- Food safety, animal and human health concerns result from intensive and frequent pesticide use, failure to observe postharvest period and inappropriate pesticide use.

- Trade restrictions: Presence of pests jeopardize market access due to risk of pest presence in products, risk of product interception due to high pesticide residue levels and in the case of Fall Armyworm it has been listed as A1 quarantine pest on European and Mediterranean Plant Protection Organization database.

- Environmental concerns and threat to biodiversity arising from excessive pesticide use, inappropriate disposal of pesticide containers, poisoning of non-target organisms and in the case of Fall Armyworm

the older larvae have cannibalistic tendencies and could reduce the population of other armyworm species in the ecosystem.

The Fall Armyworm

The topic was covered by Dr Peter Chinwada from the University of Zimbabwe and focused on; an over view of the life cycle of the pest, distinguishing features and challenges farmers are facing in initial detection of the pest. The expert has wide experience in working on Fall Armyworm. He highlighted the challenges being encountered in the on-going assessments of the impact of the pest and they include; procedures in use are not harmonized thus making it difficult to compare results, infestation by multiple pests complicates attribution of damage to individual pests and crops are also infected at different stages of development. Because knowledge and information gaps exist, the speaker stressed on the need to forge partnerships and collaborations in priority research areas in both applied and basic research including; pest dynamics, epidemiology and effective management options under Southern Africa Region conditions. The need to create awareness about the risks associated with the pests, being more vigilant in inspection at ports of entry and building capacity of value chain actors was also emphasized.

SADC Contingency and Response Plans for transboundary pests

The representative of SADC secretariat Mr Esiah Tjelele, highlighted the Regional efforts for the management of TBPD and these include; the Migratory Pest policy, SPS Annex to SADC trade protocol and the Fruit fly implementation strategy among other collaborative efforts in partnership with FAO, including the ASTF initiative. The effective implementation of the above is constrained by low participation of member states in regional plant health forums, lack of a regional pest reporting mechanism to alert member states of eminent threats since the ICOSAM platform is adjunct and limited resources allocated for plant health issues. Further, the speaker highlighted the current Regional level structures in place for the management of TBPD and include; Regional plant protection technical committees, Agriculture information system, SPS coordination committee meetings and emergency platforms. The above regional level overviews were followed by presentations on individual national status.

Country level presentations highlighted the TBPD outbreaks reported during 2016/17 and these are summarized in table 1. The presentations also revealed a divergence of responses and in-country preparedness to combat TBPD. The information and surveillance systems vary across member states but are relatively weak. Timely access to pest information to guide decision making is hindered by inadequate diagnostic capacities and inter-sectoral information sharing, sub-optimal operation of national enquiry points and weak information management systems. Gaps in the implementation of International Standards for Phytosanitary Measures (ISPMs) and Regional obligations also contribute to information and surveillance challenges. Exemption is the surveillance

system for locust which is in place but budgetary limitations hinder surveillance activities, a pre-requisite to information access.

Contingency plans exist. However, in many countries, the contingency plans are fragmented, lack flexibility to accommodate actors and the technical capacity and budgetary allocation for the Disaster Management Units (DMU) need to be significantly enhanced. Response capacity to emergency situations varies from country to country. This is generally constrained by limited; budgetary allocation, awareness associated with the risk of TBPD, laboratory infrastructure and technical diagnostic capacity and access to inputs such as traps and pesticides. Time lag to assemble response teams and challenges in command structures negate rapid response efforts. Outdated regulatory framework was reported as an issue in one SADC member state. In addition, coordination efforts need further streamlining as several member states highlighted challenges related to timely coordination and confusion during interventions, lack of clarity of roles and responsibilities and weak links between NPPOs and other key actors owing to financial limitation for joint interventions. National SPS committees have a coordination role but in most countries these are weak and translate to a weak Regional SPS committee.

Table 1: Key emerging and re-emerging high impact transboundary pests and diseases reported in SADC Member States during 2016/17.

Country	Pest Reported	Measures Taken	Gaps
Botswana	Tomato leaf miner in November 2016, Reported on pepper, tomatoes & potatoes	Awareness creation, importation of pesticides & spraying, ban on tomato trade	Not prepared for response, limited access to lures & pesticides, financial constraint, inappropriate pesticide use, farmers reluctant to adopt crop rotation because tomato is high value crop
	Fall Armyworm in Feb 2017	Initiated survey & chemical control	Limited survey done in only 2 districts
Malawi	Fall Armyworm in February 2017, affected 17,000 Ha, affected 30% of the maize fields African Armyworm in 2016	-	Coordination challenges, financial constraints
	Tomato leaf miner in November 2016	Awareness creation, Surveillance	Coordination challenges,

	In all tomato growing areas, negative impact on trade, livelihood & food security	is on-going	financial constraints
Zambia	Fall Armyworm in January 2017	National survey done, awareness creation, training stakeholders, Government & FAO availed support for aerial spray	Coordination challenges, confusion, Early warning system exists on paper but not operational
Zimbabwe	Fall Armyworm in 2017 on maize, millet and weed species	Surveillance is on-going, chemical control	Carbaryl not very effective, delays in getting resources for response
	Tomato leaf miner in 2016 reported in 78% of tomato fields leading to 89% yield decline and 96% loss in income	Chemical control, excessive use and low pest susceptibility noted	
Tanzania	Tomato leaf miner , African Armyworm, Maize Lethal Necrotic Disease causal agents		
Seychelles	Tomato leaf miner in 2017, reported in 5 large farms	Awareness creation, import ban and instituted domestic quarantine	Inadequate human resource & laboratory diagnostic equipment, financial constraint, contingency plans not fully in place, limited stakeholder engagement
Angola	Tomato leaf miner in 2016	Instituted domestic quarantine, awareness creation, chemical control	Limited awareness on the pest
Namibia	Fall Armyworm farmers noted pest in Nov 2016 but notified authorities in 2017, pest reported on maize and millet, affected 34,072 Ha, 20,673 households.	Surveillance on-going	Limited coordination Disaster Management Unit inadequately resourced, limited access to pesticides and inter-sectoral sharing of pest information
Madagascar	Malagasy Migratory locust	Surveillance and spray operations	Limited human resource, poor coordination, outdated

			regulatory framework, limited surveillance and financial constraint
Lesotho	Lesser Grain borer African Armyworm reported in 2013	-	Limited human resources & equipment, limited stakeholder engagement
South Africa	Fall Armyworm detected in 2016 on yellow & white maize varieties	Pest listed as quarantine pest, registered 3 pesticides for Fall armyworm control, steering committee established to guide development of plant health policy emergency plan	Initial site of pest introduction not identified.

Overview of plant health deliberations

The presentations reaffirmed that the SADC Region is battling with multiple emerging and re-emerging high impact transboundary plant pests and diseases. Between December 2016 and Mid-February 2017, the Fall Armyworm was reported in Zambia, Zimbabwe, Malawi, Namibia, Botswana, Mozambique and South Africa. Although the pest has a wide host range, it was mainly reported on Maize and millet in main production areas but its geographic distribution and impact at national level has not been fully established. Gaps exist in the biology of Fall Armyworm, its epidemiology and appropriate sustainable management options under SADC Region conditions. Use of synthetic pesticides is the management option being commonly employed by farmers and national governments. Tomato leaf miner is another devastating pest reported in Seychelles, Zambia, Zimbabwe, Tanzania, Angola, Botswana and Namibia. In 2016 the pest was reported by 78% of tomato farmers in Zimbabwe, it caused 89% yield decline and 96% loss of income. In Malawi tomato leaf miner was reported in all tomato growing areas leading to; shortage of tomato fruit, negative impact on food and nutritional security, livelihoods and trade. In Botswana the pest was reported on potatoes, pepper and tomatoes and was associated with inappropriate pesticide use, trade disruption, tomato shortage and a 220% increase in prices. In order to address the gaps identified and enhance preparedness, participants developed action plans which are depicted in Annex 4. Further, vibrant discussions were witnessed during plant health plenary sessions and the key comments and observations made are highlighted below.

Summary of highlights of the plenary discussions

- ✓ *When should research on new pests commence? We had the media declaring pest outbreaks before it was officially announced? It is difficult to secure government funding for research before a pest outbreak, how can researchers go around these issues?*

- Research and information gathering should be an ongoing activity and outbreaks should trigger additional focus. These activities should engage key stakeholders and build on synergies. Considering that emerging pests are recently introduced in the region, it is important to undertake both basic and applied research in priority areas and adhere to ethical considerations. Important to note is that researchers and information diffusion institutions were well represented by Universities, Non-Governmental Organizations, National Plant Protection Organizations, Diagnostic laboratories, national and international research institutes.
- Enhancing capacity building in advocacy and lobbying can assist academia and researchers articulate research issues and findings to policy makers and help secure resources for research purposes. Also enhancing awareness creation through risk communication would assist in engaging the media to ensure accurate and timely dissemination of information.

✓ *Is there a link between climate change and pest outbreaks, especially the emerging pests?*

- With climate change there is increase in temperatures, changes in precipitation, onset and duration of rainy seasons and duration of growing season. There is some relationship between climate change and pest survival, distribution, frequency of outbreaks and severity and strategies to address the pests should be within the context of climate change and climate smart agriculture need to be borne in mind.

✓ *Is there any information on progress made since the 2010 Lusaka meeting convened to help countries to be prepared for emergencies? How old are the contingency plans being referred to in this meeting and is this meeting likely to make a difference?*

- Through the ASTF project there has been considerable improvement in pest reporting and surveillance of TBPD and their management including provision of traps for African Armyworms. A regular bulleting providing data on status of migratory pests, action and challenges is produced and disseminated. Example, In Zambia surveillance has been institutionalized, pest reporting has improved including the recent report (2016) on the occurrence of Tomato leaf miner. Further significant training and stakeholder awareness creation forums were launched when Tomato leaf miner was first reported in Zambia, risk communication has improved and the NPPO has since launched a website.
- Other lesson from ASTF project especially to promote sustainability is the use of local expertise in execution of activities, emphasis on peer learning and other capacity building efforts and networking.
- Contingency plans exist in many countries but a number are outdated or fragmented and implementation could be significantly enhanced if resources were availed. To improve implementation it is critical to engage policy makers to boost resources allocated for contingency planning. Presence of contingency plans is another outcome of the 2010 meeting.
- It was emphasized that with resources and political will progress is being made although there is still room for improvement.
- It is envisaged that the action plans developed during todays' meeting will form a basis for updating contingency plans and improving preparedness at national and regional levels.

✓ *Because the meeting was seen as pivotal in improving preparedness to address emerging high impact pests, audience sought to know if the deliberations would be brought to the attention of policy makers.*

- Clarification was made that SADC secretariat was going to update the Council of Ministers on the emerging threats based on recommendations arrived at during this meeting.

Key observations

a. Initial efforts lead to mis-diagnosis of Fall Armyworm in some countries before accurate diagnosis was arrived at. Also farmers took a while before noting; the characteristic symptoms on host plant, aggressiveness of the pest, response to pesticide application and notifying the authorities. This point to the need to enhance surveillance, strengthen diagnostic capacity and create awareness about the pest.
b. Dual infection with African armyworm and Fall Armyworm was reported in Malawi, Zimbabwe and Namibia and this makes attribution of the impact of each pest more difficult under natural infestation.
c. Organic pesticide use is common and use of botanicals including Tephrosia, for the management of Fall Armyworm and Tomato Leaf Miner was reported. It is important to verify the effectiveness of botanicals and promote their use.
d. Countries are improving preparedness to avert introduction of new pests within their territories.
e. Example; Malawi is undertaking surveillance of MLND and Fusarium wilt caused by Tropical Race 4 and both threats have not been reported in the country. Similarly, Zambia is conducting surveillance for MLND.
f. It was observed that it is possible to intervene under emergency situations if stakeholders work together but it's critical that resources are availed before outbreaks and there is good coordination.
g. Transboundary pests and diseases can be of migratory or quarantine importance and member states are doing a commendable task but efficient communication systems between countries and even at regional level are absent and in some countries entry points are not well manned. It's critical that at national level plant health committees are supported and communication streamlined, surveillance is institutionalized, points of entry are manned by trained teams, fixed monitoring sites are resuscitated and mapped to aid populate pest databases, explore means to develop harmonized operating procedures and revive the regional pest database (ICOSAMP).
h. Need to update contingency plans and develop Regional Early warning systems backed by national commitment to generate and timely share information was evident.

3.8 Animal Health breakaway session report

The animal health breakaway group consisted of animal health specialists from SADC, OIE, FAO and 10 countries from Eastern and Southern Africa. A total of 12 presentations were made and they focused on; Status of Highly Pathogenic Avian Influenza and other high impact TADs, nature and impact of recent livestock diseases outbreaks, lessons learnt, level of preparedness and ability of member states to respond to outbreaks, gaps and challenges and collaboration opportunities. The highlights of the deliberations are provided in table 2.

Table 2: Summary of presentations on; Status of Highly Pathogenic Avian Influenza and other high impact Transboundary Animal Diseases

Table 2: Summary on presentations on; Status of Highly Pathogenic Avian Influenza (HPAI) and other high impact Transboundary Animal Diseases		
Institution/Country	Current status	Gaps
Southern Africa Development Community (SADC)	The region is currently free of HPAI infection. Risk of disease introduction and transmission high, due to: Migratory birds, Importation of infected poultry, poultry products and other birds. Mechanical transmission - people, vehicles and domestic fowl from infected countries. There is a HPAI Response Framework developed in 2006 (through collaboration of WHO/FAO/OIE & AUIBAR) to foster Regional and international collaboration, preparedness and coordinated response and enhance capacity to prevent and control an outbreak. The overall goal of the SADC Plan is a SADC free "Highly Pathogenic Notifiable Avian and Pandemic Human Influenza The objectives for the SADC response are to: - prevent the introduction of H5N1 (H5N8) infection in the region; and harmonize policy guidelines and control measures in the event of an outbreak	The response framework has not been updated and could now be outdated
World Animal Health organization (OIE)	Presentation focused of the global and regional HPAI situation. There is a rising trend in number of HPAI outbreaks and increase in number of dead birds -Africa – 76 outbreaks since 2016. The role of OIE promote transparency and understanding the global animal disease situation, to protect public health and ensure safety of world trade in animals and products	Contingency planning, Early warning systems, Early detection, Rapid response, collaboration between countries in terms of sharing scientific information could be better
Uganda	Country has experienced its first outbreak of HPAI. First deaths were observed in November 2016 by fishermen. In early January 2017, Ugandan fishermen informed local authorities of a massive wild bird die-off (species mostly affected: white-winged terns, *Chlidonias leucopterus*) on the shores of Lake Victoria in Wakiso District. Confirmed as H5N8. Cases confined to fishing villages along shores of Lake Victoria. 3 districts were affected	Lack of compensation policy prevented the culling of affected birds. Time lag of 10 days between suspect case and confirmation due to unavailability of requisite lab. Test kits. Absence of a communication strategy resulting in mixed messages
Zimbabwe	The country is still free of HPAI. A contingency plan is in place	-Inadequately trained field and laboratory staff with

	Multi stakeholder rapid response team in place (DVS, MoH & National Parks), Lab diagnostic capacity present. Active surveillance program in commercial poultry production in place. Active surveillance in the smallholder sector is during regular vaccination and monitoring of New Castle Disease (NCD). Passive surveillance in wild birds. -Foot & Mouth Disease (FMD) main issue – Disease is endemic especially in national parks. Outbreaks affect mainly cattle. No cases in small ruminants/pigs-600 000 cattle belonging to 120 000 households routinely vaccinated. Zimbabwe experienced a serious outbreak which started in 2014. 26 of 62 districts affected Anthrax-sporadic outbreaks usually associated with droughts or flooding -Rabies – Endemic, 200-250 cases per annum -NCD-endemic -African Swine Fever (ASF) – outbreak last year after many years. One district (Mt. Darwin) affected. -Rift Valley Fever (RVF) – last recorded 10 years ago	attrition Inadequate animal identification and traceability system Shortage of transport for disease surveillance, rapid response and control Inadequate field and lab equipment and reagents
Zambia	Zambia is free of HPAI. Developed a contingency plan in 2008. Established a surveillance system for detection and containment of HPAI and formed active Multi-Sectoral Rapid Response Teams. · Building veterinary capacity to assess risk of HPAI occurrence and take mitigation/containment measures. **-FMD –** 2 outbreaks, 2015, 187 cases out of 71 500 cattle. Ring vaccinations of 200 000 conducted. 2016 outbreak -18 cases in a veterinary camp with 5948 cattle.	The contingency plan has not been updated.
Seychelles	No TADs including HPAI have been reported in the islands. Seas surrounding and geographical location have been an effective barrier against unwanted pests and diseases. Trading partners presents a risk for diseases introduction. No real emergency disease management experience to handle an outbreak. There are no contingency plans	Limited resources (infrastructure & Human) for handling animal health issues-3 vets in public service, low diagnostic and surveillance capacity.
Namibia	Country is free of HPAI but a contingency plan is in place. Had one outbreak of FMD in 2015 (last one had been in 1972). 241 cases out of 3574 cattle. Currently experiencing an outbreak of Lumpy Skin disease (LSD). Experience sporadic cases of Contagious Bovine Pleuropneumonia (CBPP), African Horse	Outdated animal disease reporting system (no interoperability between various data bases).

	Sickness (AHS), ASF and Anthrax. There is a threat of Peste de Petite Ruminants (PPR) from neighbouring countries. Surveillance Strategy for PPR is in place	
Malawi	Malawi still free of HPAI. National Technical Committee was established in 2006 and reactivated on 6th Feb 2017 following the Uganda outbreak. National HPAI Preparedness Plan in place: since 2006. Need to be reviewed. FMD- sporadically occurs in Shire Valley (Southern Malawi) which is a major beef producing area in the country and usually occurs during dry months of July to December , when there is mixing of buffalo and cattle at watering and grazing points. Last outbreak was in January 2016 with 30 cases out of 272 cattle. ASF-Endemic in the country. 3 outbreaks in 2016 with 556 deaths being recorded. PPR- The disease has not reported in the country but there is a threat from the north.-both passive and active surveillance are in place. The two previous active surveillance through sampling gave all Negative results	Surveillance-not being done Capacity – Inadequate trained personnel, equipment and test kits. Inadequate resources for timely control e.g., vaccination logistics , cost of mounting road blocks etc. -Inadequate laboratory diagnostic facilities -Inadequate compliance to the instituted control measures.
Madagascar	The country is free of all major TADs (FMD, PPR, CBPP and HPAI). Threats are posed by the major trading partners. - FMD from Mauritius (infected since July 2016) - HPAI from France (since Dec 2015) - PPR from Comoros (since 2011) Contingency plans and protocols are in place for HPAI, FMD, PPR and CBPP	General knowledge of the diseases is inadequate. Not enough experience in diseases outbreak control.
Lesotho	Country is free of HPAI. Contingency plan has been in place since 2006. They are in the process of the livestock policy and legislation to provide an enabling framework for enforcing animal disease control measures. FMD –surveillance is ongoing	No Early warning, Early detection and Rapid response systems Shortage of personnel and transport No reliable data collection mechanism
Botswana	Still free of HPAI. Conduct surveillance in wild birds. RVF-first reported in 2010. Sporadic outbreaks are reported during the high rainfall periods	No contingency response plan or field guide for HPAI response

	LSD- The disease is present in Botswana countrywide affecting all the ten districts. Sporadic outbreaks often occur annually during the rainy season when the vectors of the disease are abundant CBPP and PPR are absent but active surveillance is ongoing	
Angola	Free of HPAI but high risk due to many wild birds and poultry imports. Angola has instituted temporary suspension for importation on poultry & products from countries that are infected' FMD-Last outbreak was in 2015 at same time with Northern Namibia. PPR-really threat from DRC. Vaccinations conducted in 2013	-No institutional capacity, human resources, diagnostic, & no surveillance system -No surveillance on wild birds -Illegal movement of livestock is rife

Lessons learnt from Uganda outbreak

- Preparedness is important in disease management
- Continuous passive surveillance is a necessity
- Multi-sectorial taskforce is important (One health approach) , it enhances use of resources and buy-in.
- Absence of a compensation policy presented a challenge as culling of birds in the outbreak area could not be effected.
- Active surveillance is expensive but essential
    - ✓ possible to undertake routine minimum sampling (drill technique), or else difficult to monitor human and other resource requirements in the face of an outbreak
    - ✓ Simulation exercises are necessary for maintaining a high level of preparedness

Lessons learnt from other country presentations

- Not easy to maintain surveillance momentum for diseases that are absent in the country outside a sponsored project
- The outbreak and information from Uganda has been good in triggering other countries to re-look at response plans
- Need to sensitize policy makers on the ever present potential risk of HPAI.

- Need to continuously execute activities necessary for having an early warning system for HPAI
- Need to prepare exit strategies/activities that would enable continuity of programmes beyond projects.
- Communities living on either side of country borders should be treated as one community and joint surveillance and control programs should be initiated.
- Use of drama can be an effective tool in the dissemination of HPAI information to farmers and other stakeholders.
- **Summary of highlights of the plenary discussions**

- Existing regional structures should be used to address re-emerging HPAI threat. Review of current regional response plan to see if it is still fit for purpose. It remains a puzzle why the Uganda outbreak did not spread further to other countries despite the continuous migration of wild birds. May be not all the migratory birds carry the virus?
- A question was raised as to whether the response protocols were harmonized within the region. It emerged that they were not. It was felt that if countries are prepared, this makes it easier for SADC to support and coordinate.
- There were no communication strategies which sometimes contributed to issuing of non-consistent messages. Funds permitting country teams need to be trained in risk communication. Uganda wants ban lifted & need credible information so risk assessment needs to be done & proper outbreak investigation
- Continuous sampling and testing in labs is necessary to ensure that equipment is working and samplers keep practicing
- A global FMD strategy is available. There was need to follow up through meetings. If a country does not put a program in place then they jeopardize the efforts by another country. The Risk Analysis Framework is a tool that may be used for policy decision making. The cost of doing nothing was huge.
- Animal disease control should take cognizant of livelihoods and ideally try to control all animal diseases. Government control effort need to be structured rather than over depending on partners.
- Question was raised on what countries in SADC are doing towards eradication of PPR by 2030 as per regional declaration? Angola vaccinating and conducting surveillance but no coordination with DRC where disease is prevalent. Need to understand more on outbreaks focal points in Angola & do risk-based surveillance. Zambia – met at roadmap meeting last year, surveillance active to ascertain which places are affected. DRC & Zambia do not have isolates.
- Need to brief ministers so they act on our behalf but they need to be well informed

- We need to lobby for funding and show importance of animals for livelihoods. Capacitating veterinary authorities so that they can lobby better for resources. Public Private Partnerships may help overcome resource mobilization challenges.
- Regional alert & early warning system – there is nothing tangible at regional level, such as Global Early Warning System (GLEWS) which could be used at national level to raise awareness.
- Data limited to what is generated from Government Laboratories – need for networks to link with other labs in the country and methods used in diagnostics should be all encompassed in the network & same protocols used between countries – harmonization
- It was felt that the regional body was not visible enough. SADC – need to prioritize and updating of regional preparedness and response plan, coordination and visibility, strengthening of platforms for information sharing including EWS/Alert systems – Epidemiology and informatics system & most surveillance activities should be coordinated through that platform. Regional capacity building – easier than country-level
- Harmonization of protocols of laboratories in SADC – HPAI, Rabies, FMD and Brucellosis including epidemiology networks
- Joint technical committee on zoonotic diseases must be multi-sectorial

Emerging issues from plenary discussion

From the plenary session, the key issues needing attention so as to enhance the level of preparedness to respond to disease outbreaks were identified. At regional level (SADC), the critical issues identified were;

- Outdated SADC HPAI preparedness and response plan need to be reviewed and validated. Review of Regional Strategies for other TADs
- Coordination and collaboration- HPAI technical committee do not meet regularly and they last met in 2006. Livestock Technical Committee (LTC) and Health Committees are not meeting due to inadequate resources. Roadmap meetings of other TADs (e.g. FMD, PPR) are also not being held. Need to reactivate SADC Joint technical Committees for human and animal health and ensure regular meetings
- Laboratory and Diagnostics. Testing protocols are not harmonized and SADC secretariat should coordinate the harmonisation and standardisation of testing protocols.
- Regional capacity building- There is need for continuous training and also exploit alternative training such as e-learning/webinars methods so as to complement face to face approach which has limited reach.
- Disease intelligence (EWS)-There is lack of a reliable regional alert system. Development of regional early warning and alert system should be prioritized.

At country level, the critical thematic issues were;

- Preparedness and response plans-Absence or outdated plans in countries. Need for review and update of contingency plans, provide budget allocation from Disaster management Unit and lobby for contingency fund establishment. Ensure there is appropriate animal health legislation
- Animal disease surveillance- risk areas are unknown in most countries, there are weak import controls, Inadequate and untrained human resources. Conduct risk mapping, active & passive surveillance
- Veterinary extension- Lack of Standard Operating Procedures in extension, extension materials and equipment. Develop and Produce SOPs for extension.
- Laboratory and diagnostics- inadequate laboratory equipment, consumables, trained laboratory staff and harmonized and Standardized SOPs. Recruit and train appropriate personnel, Establishment of the National Laboratory Network, Workshops to Standardize SOPs
- Communication and awareness- Lack of knowledge on the disease and its occurrence as well as communication strategy. Development of Communication strategy Awareness campaigns-Production of awareness material-Collaborate with the media and community leaders

Summary of recommendations on Animal Health issues

- Education: Raise awareness of the general population, poultry producers or marketers and hunters about HPAI, precautionary measures and reporting mechanisms for sick or dead birds;
- Increase surveillance efforts in poultry and dead wild birds;
- Ensure means for laboratory testing are in place to detect the currently circulating avian influenza viruses;
- Step up biosecurity measures in order to prevent potential virus introduction from wild birds or their faeces on farms and markets; Initiate resource mobilization for increased preparedness, communication and, in case of virus incursion, response activities (contingency funds available and mechanisms for compensation in place);
- Assess levels of preparedness: field and diagnostic capacities, material and equipment for rapid response such as disinfectants and personal protective equipment sets and institute remedial action.
- Concerted efforts are essential for early warning detection and control measures. Sharing data and technical information/materials are essential
- Regional networking, capacity building activities, scientific and technical collaborations should be encouraged and sustained at a national, regional and global level
- Effective communication strategy on targeted audiences

4.0 Way forward, Recommendations and Closing remarks

Way Forward: The meeting agreed and committed to the following next steps:

a. Provision of technical support to member countries:

- FAO undertook to support countries to urgently carry out assessments of the impact of FAW: infestation levels, distribution, GIS mapping, damage, results and losses; including impact on food security; food safety as well as trade implications
- Participants also committed to initiate resource mobilization, which will be informed by the results of the planned assessments, for enhanced preparedness and response, and to strengthen risk communication capacities;
- FAO and partners will support the setting up and strengthening of national surveillance systems for FAW and other crop pests and for HPAI, through provision of technical assistance and advice; and in the specific case of FAW, through provision of pheromone insect lure traps which are used for capturing armyworms and monitoring their spread.; and to support the deployment of sentinel/fixed position monitoring sites to governments, research and academic institutions.
- Ensure availability of equipment and reagents for laboratory testing are in place to detect and diagnose emerging/re-emerging plant pests and circulating avian influenza viruses and other transboundary diseases;
- Assess levels of regional and national preparedness: field and diagnostic capacities, material and equipment, task forces.
- Regional networking, capacity building activities, scientific and technical collaborations should be encouraged and sustained at a national, regional and global level
- Review, update and consolidation of national action plans at regional and national levels - customize local needs according to pest/ disease status.
- Enhance human resource capacity in surveillance and diagnostics
- Establish community based pest forecasting system

b. Update SADC Council of Ministers on emerging and re- emerging pests and disease threats

c. Organize a FAW technical meeting to discuss national/regional strategic planning; research needs as well as comprehensive management strategies in April 2017.

Conclusions and Recommendations

1. The meetings achieved its objectives as evidenced by; the sharing of experiences, information and knowledge on emerging and re-emerging transboundary pests and diseases of crops and animals by over 16 experts and a further 28 presentations by countries represented. Further, the capacity of preparedness and response capacities of countries were assessed; opportunities for improvement

identified and harmonized action plans aimed at improving the countries and the SADC Regions preparedness and early response to pest and disease threats developed.

2. The existing information and surveillance systems have improved over the years but remain relatively weak owing to variability in quality of information gathered, limited surveillance and inadequate sharing of information. To address these gaps at both national and regional levels, it is recommended that capacity building be undertaken and pest risk analysis teams established, member states undertake surveillance in accordance with international treaties, develop standard operating procedures and improve information sharing at national level. Further to facilitate information sharing at Regional level, the adjunct ICOSAM should be revived, support for the Livestock information management system enhanced, member states commit to reporting obligation in line with SPS Annex to SADC trade protocol and establish a communication strategy.
3. Early warning system is absent in some SADC member states and where present it is fragmented or non-operational which pose a challenge to developing a regional EWS as it draws from nationally generated and disseminated information. To improve EWS it is recommended that further training on PRA and EW be conducted, support accorded to development of binding policies and national governments commit to timely sharing of information. Further the existing ICT infrastructure for locust EW should be upgraded and budget allocation for purchase of traps increased.
4. Contingency plans exist but are constrained by; inadequate technical capacity in Disaster Management Units, lack of flexibility to accommodate contingency frameworks and budgetary limitations. It is recommended that policy makers be engaged to facilitate updating of contingency plans at national and regional level, review of legal frameworks, strengthen in-country collaboration and development of harmonized regional contingency plans be undertaken.
5. To realize Rapid Response in emergency situations, it is recommended that pre-requisite structures be established, ensure adequate resource allocation, key stakeholders be engaged for collective interventions and support accorded to strengthening diagnostic and technical capacities.
6. To enhance coordination at national and regional levels, it is recommended that national governments support national SPS committees, increase resource allocation to Disaster Management Units, revive relevant SADC structures and support regular regional technical committee forums.
7. It is recommended that targeted aggressive awareness creation campaigns be launched to enlighten stakeholders on risks associated with transboundary pests and diseases and risk communication supported to facilitate appropriate action by stakeholders.
8. Several emerging and re-emerging pests have been recently introduced and reported in the African continent. It is recommended that priority research areas be supported to address knowledge and information gaps, including development of appropriate integrated management options under SADC Region conditions and pest and disease epidemiology and genetic diversity and evolution of HPAI among others.

9. To address the gaps identified, participants developed action plans and it is recommended that these be customized to national situations and implemented at national and regional level.

Closing Remarks

In his closing remarks, the FAO Sub-regional Coordinator for Southern Africa expressed great pleasure and commended all participants for their active participation. He noted that the meeting had met its objectives based on the issues identified, action plans developed and the recommendations made. He also stressed that there is still a lot of work that we need to do to begin to practically control the transboundary pests and disease problems, where they have emerged and to prevent them in countries where they are not. He singled out the fall armyworm, already confirmed in 7 SADC member states as one major pest threat that needs urgent attention. With regards to emerging and existing threats of transboundary animal disease threats, the meeting provided an opportunity to discuss pre-emptive preventative actions and to enhance preparedness and response capacities of southern African countries. He stressed that special attention was accorded to the threat of H5N8 Avian influenza which has broken out in Uganda and in West Africa and is not reported in Southern Africa.

Fortunately this meeting has given us the opportunity to discuss pre-emptive preventative actions and to enhance preparedness and response capacities of southern African countries. Some critical gaps in regional and national preparedness plans were identified and I hope that the action plans developed will help to close these gaps – including gaps in surveillance, diagnostic capacities and in awareness, We all agree that prevention is more effective and less costly than response actions so I do hope that this meeting has helped us to be better prepared to respond to Avian influenza and to protect the poultry sub sector and the livelihoods of millions of people - should the disease emerge in the region.

He also reiterated FAO's unwavering commitment in collaboration with SADC and other partners and stakeholders to support countries to implement the necessary assessment activities to understand the extent and intensity of the pest problem in the region to better inform our efforts and effectively mobilize the required resources in terms of both human expertise and financial layouts. Also pointed out is that FAO has initiated the process of procuring pheromone insect lure traps which are instrumental in monitoring the Fall Armyworm and providing information on their prevalence.

The meeting identified gaps in our current early warning systems, response, preparedness, contingency planning including information dissemination and effective regional coordination. Additionally, it proposed key interventions to close gaps and critical research areas that will provide a better understanding of the pest and disease dynamics in the region. Further he encouraged participants to share information gained at the meeting in their respective countries and to lobby policy makers to fully appreciate the implications of the pest and disease problems for successful implementation of the recommended action plans. He thanked all participants for active participation, meeting organising committee for a job well done, wished all present safe journeys back home and

successful implementation of the action plans agreed at this meeting (For complete closing remarks see Annex 5).

Official Closing

The meeting was officially closed by the Principal Director in the Department of Livestock and Veterinary Services in Zimbabwe, Dr. Ushewokunze-Obatolu. The speaker commended FAO, IRLCO-CSA and SADC for timely convening of the meeting at a time when the devastating pests especially Fall Armyworm was threatening trade and food security in the region. With regard to HPAI the meeting was also a timely intervention to enhance preparedness for multiple TADs. She stressed that the meeting was very productive as evidenced by vibrant discussions and sharing of experiences, development of action plans and recommendations arrived at. Further, the country representatives were encouraged to follow up with their principals to ensure implementation of action plans was realised. Also stressed is the need for biosecurity at both national and regional levels to be at its best. On behalf of the Government of Zimbabwe, the Principal Director thanked all who contributed to hosting the meeting including the contributions of ASTF project, USAID, SADC, IRLCO-CSA and the media. She expressed sincere thanks to FAO for able organization and timely intervention to show that solutions can be found in the midst of problems. The Principal Director wished all participants safe return home and those staying behind to enjoy the pleasures and hospitality of Harare.

5.0 Annexes

Annex 1: List of participants

Southern and Eastern Africa Regional Technical Meeting on Preparedness and Response Actions to Emerging High Impact Trans boundary Crop and Livestock Pests and Diseases

14 - 16 February 2017

Participants

	Country	Division	Name	Email
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83	REOSA		Elma Sikala	
84	REOSA		Sina Luchen	
85	FAO - SFS		Joyce MulilaMitti	
86	FAO - SFS		Patrick Otto	
87	FAO - SFS		Ronia Tanyongana	
88	FAO - SFS		Rutendo Tinarwo	
89	FAO - SFS		Trust Katsande	
90	REOSA		Constance Oka	
91	FAO - SFS		Edward Ogolla	
92	FAO Zimbabwe		Veronica Mutiro	
93	FAO Zimbabwe		Barbara Mathemera	
94	REOSA		Douglas Magunda	
95	REOSA		Rachel Nandelenga	
96	FAO - SFS		Ivy Saunyama	
97	FAO Zimbabwe		Karsto Kwazira	
98	FAO Zimbabwe		Daniel Utete	

99	FAO Zimbabwe		Orbert Maminimini	
100	FAO Zimbabwe		Leonard Makombe	
101	FAO Zambia		Celestina Lwatula	

Annex 2: Meeting program

Meeting Programme		
Day One - 14th February 2017		
Official Opening and Plenary Session : Facilitator – David Mfote		
Time	**Activity**	**Resource Person**
08:00 – 08:20	Arrival of Participants and Registration	Rutendo FAO
08:20 – 8:30	Welcome and Housekeeping	FAO
08:30 – 08:45	Opening remarks by the FAO Sub Regional Coordinator (SRC), Southern Africa	David Phiri
08:45 – 08:55	Opening remarks - SADC	Esaiah Tjelele
08:55 – 09:05	Opening remarks - OIE	Moetapele Letshwenyo
09:05 – 09:15	Introductions	**All**
09:15 – 09:45	Official Opening by Host Government	Ministry of Agriculture, Mechanization and Irrigation Development (MAMID) Representative
09:45 – 10:00	Meeting Objectives and Expected Outcomes	Patrick Otto (FAO SFS)
10:00 – 10:30	**Tea break and Group Photo**	**All**
Plenary Session Cont'd	**Facilitator**	**Rose Njeru**
10:30 – 10:45	General status of transboundary plant pest and disease spread in the region and the state of preparedness (challenges and opportunities)	Sina Luchen (FAO REOSA)

10:45 – 11:05	Global and regional overview of Highly Pathogenic Avian Influenza (HPAI) emergence and spread, Regional Risk Assessment and actual/expected impacts	FAO Reference Laboratory for HPAI, Padova, Italy
11:05 – 11:25	Situational update on HPAI (H5N8) outbreak in Uganda, impacts, control measures, challenges and outlook for the country and region	Fredrick Kivaria, FAO ECTAD, Country Manager, Uganda
11:25 – 11:45	Transboundary pests (Fall Armyworm and African Army worm) current invasions and their impact	Professor Ken Wilson Lancaster Environment Centre
11:45 – 12:05	The short to medium term Locust threat in Southern Africa: what needs to be done	Moses Okhoba IRLCO-CSA
12:05 - 12:25	Risk Communication as a key tool in responding to transboundary pests and diseases	Edward Ogolla (FAO SFS)
12:25 – 13:00	Questions & Answers and Panel Discussions	
13:00 – 14:00	**Lunch Break**	
14:00	**Breakout Group Sessions** **Animal Health and Plant Health Sectors**	

14:00 – 17:00	**Animal Health Sessions - Facilitator: TBA**		**Plant Health Sessions – Facilitator Rose Njeru**	
Time	**Activity**	**Resource Person**	**Activity**	**Resource Person**
14:00 - 14:20	SADC – Regional HPAI control Strategy and preparedness plan	Gaolathe Thobokwe	An overview of Transboundary Pests in the Region current status and impact	Rose Njeru
14:20 – 14:40	OIE Update on Global and regional situation with respect to HPAI and other priority TADs	Moetapele Letshwenyo	The Fall Armyworm	Peter Chinwada
14:40 – 15:30	**Country Presentations** - Situational update on transboundary animal diseases (HPAI and other TADs); responses, state of preparedness, challenges/gaps and achievements; **Angola Botswana Kenya Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles South Africa Swaziland Tanzania Uganda Zambia Zimbabwe**	Country Representatives	SADC Contingency and Response Plan for transboundary pests	Esaiah Tjelele
15:30 – 16:00	**Tea Break (Working Break)**			**All**
16:00 – 17.00	**Country Presentations** - Situational update on transboundary animal diseases (HPAI and other TADs);		**Country Presentations** - Status of transboundary pests and diseases; responses and state of in-country	

	responses, state of preparedness, challenges/gaps and achievements; *Cont*: **Angola Botswana Kenya Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles South Africa Swaziland Tanzania Uganda Zambia Zimbabwe**	Country Representatives	preparedness; *Cont:* **Angola Botswana Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles South Africa Swaziland Tanzania Zambia Zimbabwe**	Country Representatives
17.00	**END OF DAY ONE – MEETING ADJOURNED**			
Day Two – 15th February 2017	**Breakout Group Sessions in Sectors *Cont'd***			
08:00 - 10:00	**Country Presentations** - Situational update on transboundary animal diseases (HPAI and other TADs); responses, state of preparedness, challenges/gaps and achievements; *Cont*: **Angola Botswana Kenya Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles**	Country Representatives	Country Presentations on the status of transboundary pests and diseases; responses and state of in-country preparedness; *Cont*: **Angola Botswana Lesotho Madagascar Malawi Mauritius Mozambique Namibia Seychelles South Africa Swaziland Tanzania Zambia Zimbabwe**	Country Representatives

	South Africa Swaziland Tanzania Uganda Zambia Zimbabwe			
10:00 - 10:30	**Tea Break**			**All**
10:30 – 11:30	Discussions and Key Recommendations	Facilitator	Discussions and Key Recommendations	Facilitator
11:30 – 13:00	Review/Formulation of Regional and National Response Plans (Focus on HPAI)	Facilitator	Formulation of Regional and National Action Plans	
13:00 - 14:00	**Lunch Break**			**All**
14:00 – 16:00	Review/Formulation of Regional and National Response Plans (Focus on HPAI) - *Cont*:	Facilitator	Formulation of Regional and National Action Plans – *Cont*:	Facilitator
16:00 – 16:30	**Tea Break and End of Day Two**			

DAY Three - 16th February **Plenary – Consolidation: Presentation of Regional and Country Action Plans and Way Forward** **Facilitators - Animal Health and Plant Health**		
Time	**Activity**	**Resource Person**
08:30 – 09:30	**Report Back to Plenary** Presentations from Animal Health Discussions	Facilitators/Participants
09:30 – 10:30	**Report Back to Plenary** Presentations from Plant Health Discussions	Facilitators/Participants
10:30 – 11.00	**Q & A and Panel Discussions**	Facilitator
11.00 -12:00	Summary of Panel Discussion and Next Steps	Patrick Otto (FAO SFS) Animal Production and Health
12:00 – 12:30	Wrap up and Way Forward	Joyce Mulila-Mitti (FAO SFS) Plant production and Protection
12:30 – 12:45	Closing Remarks	Principal Director, Department of Livestock and Veterinary Services (DLVS) - Host Country
12:45 – 13:00	Official Closing	David Phiri FAO SRC
13:00 – 14:00	Lunch Break	

Day Four – 17th February	**Participants Depart**

Annex 3: Official Opening speech

Speech by Honourable Dr J.M Made, The Minister of Agriculture Mechanization and Irrigation Development at the Official Opening of the

Southern and Eastern Africa Regional Technical Meeting on Emerging High Impact Trans boundary Crop Pests and Animal Diseases

Harare Zimbabwe

14 – 16 February 2017

David Chimimba Phiri, The FAO Subregional Coordinator for Southern Africa and Zimbabwe Country Representative

The Representative from SADC

The IRLCO-CSA Director

Senior Government Officials

Representatives from cooperating partners-USAID, EU, UKaid, SDC

Heads of UN Agencies and International Development and Humanitarian organizations

Invited Guests

Ladies and Gentlemen

Distinguished Guests, I feel greatly honoured to be invited and accorded this opportunity to officially address and open this important Regional Technical Meeting on "*Preparedness and Response Actions to Emerging High Impact Trans boundary Crop and Livestock Pests and Diseases."* This is a timely event considering that recovery from the El Niño drought of the 2015/16 agricultural season had been encouraging with the good rains the region has been receiving. However, as is evident, the 2016/17 season is facing increased transboundary crop pests and livestock disease outbreaks, posing a serious threat to agricultural livelihoods thereby weakening the El Niño drought recovery efforts instituted by governments and smallholder farmers in the region. Notable among these outbreaks, are the cereal crop-eating caterpillars (fall army worm) that have infested maize fields.

In response, the government of Zimbabwe launched chemical spraying operations to control the pest, in an attempt to mitigate its impact. The fall army worm which I understand is a new invasion in Southern Africa, the African Armyworm and the *Tuta absoluta* on the tomato crop; another new invasion are the major pests causing havoc in the

farming community. Prices of tomatoes have been on the increase due to shortages induced by the damage to the crop by the leaf miner.

In the livestock sector, we have the foot and mouth disease (FMD) which although now managed in Zimbabwe is still a threat to trade as it remains a problem through outbreaks that occur in previously disease free declared areas. There also exist threats from other diseases such as, Peste des Petits Ruminants (PPR), that is already in some countries in the region.

I am particularly pleased and grateful that FAO through its Regional Initiatives and in partnership with Southern Africa Development Community (SADC), International Red Locust Control Organization for Central and Southern Africa (IRLCO-CSA) have convened this meeting here in Zimbabwe, considering that we are one of the countries where the Fall Armyworm showed its capability to damage the maize crop. I understand the meeting objectives include providing a platform for sharing of information, experiences and knowledge on the emerging/re-emerging trans-boundary crop pests and livestock diseases in the region. This is very important and we in Zimbabwe can attest to the impact of some of these pests and disease threats. For us the development of comprehensive regional and national strategies for effective management of these trans-boundary plant pests and animal diseases is critical.

This meeting brings together the several countries' government departments and regional institutions that deal with transboundary pests and disease on a daily basis to interact and find common ground for effective coordination for future successful implementation of management and control programs for these pests and diseases. The meeting is therefore expected to bring in a more holistic coordinated approach to the regional threats to the crops and livestock production and trade in the region. This holistic approach will also address the gaps and constraints that impede regional integration, harmonization and effective coordination of the response actions and level of preparedness for the management of transboundary pests and diseases.

Zimbabwe continues to play its part and is committed to taking its people out of abject poverty and deprivation in line with the United Nations Sustainable Development Goals (SDGs). Zimbabwe has demonstrated this through the endorsement of the June 2014 Malabo Declaration on Accelerated Agricultural Growth and Transformation for Shared Prosperity and Improved Livelihoods. The declaration pronounces a set of new goals showing a more targeted approach to achieve the agricultural vision for the continent, which is shared prosperity and improved livelihoods. Prominent among several important decisions regarding agriculture was commitment to; "*Enhancing*

Resilience of Livelihoods and Production Systems to Climate Variability and other related risks." This meeting is addressing this aspect at both regional and national levels in the region and I believe there has been steady progress in that regard through the different interventions. Agriculture supports the majority of our people in Zimbabwe.

I would therefore like to encourage participants in this meeting to work diligently to ensure that you come up with comprehensive regional and national strategies that are going to provide solutions to problems of these menacing emerging pests and diseases so that our economies can accrue the benefits of enhanced food security and trade.

I would like to thank you all for affording time to work towards the development of these important strategies for crops and livestock focused agricultural development and wish you all the best in your deliberations and ultimate implementation of activities at both national and regional levels

I thank you all

Annex 4 a: Action plans

Annex 4a: Plant Health Action plan

Issue	Gaps identified	Action Required	Critical success factors	Time frame	Responsible
Information and Surveillance System	Weak information management and surveillance systems	Develop regional harmonised surveillance system & standard operating procedures	Reliable ICT infrastructure; Finances	Within 6 months	National Government; SADC secretariat; FAO
	Inadequate diagnostic capacity and technical information	Capacity development (training)			
	Communication policy on Trans-boundary Pests lacking	Develop a regional communication strategy on Trans-boundary Pests			
	Inadequate intersectoral information sharing	Operationalize National enquiry points			
	National enquiry points not operational				
	Inadequate implementation of ISPMs and regional obligations				

Early Warning	Non-existent in most countries or fragmented early warning structures	Facilitate training in PRA and early warning. Facilitate development of binding policies	Finances; Expertise available; Good governance; Commitment of stakeholders	Within 3-12 months	National Government; SADC secretariat; FAO
Contingency Planning	Inadequate resources Inadequate technical capacity in DMU Lack of flexibility to accommodate contingency frame works Fragmented contingency plans	Lobby policy makers Training of staff Review legal frame work Develop harmonised regional contingency plan		Within 3-12 months	National Government; SADC secretariat; FAO
Rapid Response	Inadequate resources – funds Non existent structures for rapid response knowledge gaps	Lobby to set up emergency fund Establish a standing committee on rapid response Support priority research	Emergency fund established Institutionalised committee established	Within 6-9 months	National Government; SADC secretariat; FAO

		Develop policy to enhance access to inputs Awareness campaigns	Generate relevant technical information		
Coordination	Weak National and Regional SPS committees Inadequate funds for joint interventions Lack of clarity of roles and responsibilities Limited institutional knowledge to ensure continuity in coordination	Operationalize National Sanitary and Phytosanitary Coordinating Committees Lobby for resources Establish inclusive but lean coordinating structures to hasten decision making	Finances; Committed of relevant stakeholders	Within 6-12 Months	National Government; SADC secretariat; FAO

Annex 4b: Animal Health Regional Action Plan

Issue	Gaps identified	Action Required	Whose responsibility	Critical Success factors	Timeframe	Budget &Potential funding sources
Response and Preparedness	Outdated SADC HPAI and response plan	Review of preparedness and response plans Develop ToR Recruit consultant Undertake review Validation of reviewed document Adoption, Testing	SADC and partners	Funding, resources partnerships	Review by June 30th 2017 December 2017	
	Other TADs (FMD, PPR)	Review of Regional Strategies for other TADs	SADC/FAO and other partners	Confirmation of funding	July 2018	
Coordination and Collaboration	HPAI technical committee not meeting – last met 2006	Reactivate SADC Joint technical Committees for human and animal health – ensure regular meetings	SADC and partners	Funding, strengthen partnerships with inter-governmental organizations & piggy back on regional network meetings	On-going	
	LTC & Health Committees not meeting – no resources Roadmap	Hold more regular meetings	SADC/FAO	Confirmation of funding	July 2017	

	meetings of other TADs e.g. FMD, PPR					
Laboratory Diagnostics	Quality of tests needs to be harmonized (proficiency testing)	- Capacity building (HR & consumables) - Harmonization and standardization of testing protocols	- PPR lab diagnostics (SADC/FAO/ USDA)		On-going	
Regional Capacity Building	Mentoring of trainees and follow up High turnover	- Continuous training - Staff motivation -Alternative to f2f e-learning/webinars	SADC & partners	- CBE (cont. based education) - Network for field personnel	On-going	
Disease intelligence and EWS	Lack of reliable alert system	- development of regional early warning and alert system				
Data Collection	Lack of reliable data (Currently 3 countries reporting) Storage and analysis Lack of dissemination Lack of sustainability	- Support implementation of LIMS	SADC	SADC needs to investigate and resolve problems countries are encountering	On-going	

Annex 4c: Animal Health Country Level Action Plan

Issue	Gaps identified	Action Required	Whose responsibility	Critical Success factors	Timeframe	Budget &Potential funding sources
Response and Preparedness	Outdated SADC HPAI and response plan	Review of preparedness and response plans Develop ToR Recruit consultant Undertake review Validation of reviewed document Adoption, Testing	SADC and partners	Funding, resources partnerships	Review by June 30th 2017 December 2017	
	Other TADs (FMD, PPR)	Review of Regional Strategies for other TADs	SADC/FAO and other partners	Confirmation of funding	July 2018	
Coordination and Collaboration	HPAI technical committee not meeting – last met 2006	Reactivate SADC Joint technical Committees for human and animal health – ensure regular meetings	SADC and partners	Funding, strengthen partnerships with inter-governmental organizations & piggy back on regional network meetings	On-going	
	LTC & Health Committees not meeting – no resources Roadmap	Hold more regular meetings	SADC/FAO	Confirmation of funding	July 2017	

	meetings of other TADs e.g. FMD, PPR					
Laboratory Diagnostics	Quality of tests needs to be harmonized (proficiency testing)	- Capacity building (HR & consumables) - Harmonization and standardization of testing protocols	- PPR lab diagnostics (SADC/FAO/ USDA)		On-going	
Regional Capacity Building	Mentoring of trainees and follow up High turnover	- Continuous training - Staff motivation -Alternative to f2f e-learning/webinars	SADC & partners	- CBE (cont. based education) - Network for field personnel	On-going	
Disease intelligence and EWS	Lack of reliable alert system	- development of regional early warning and alert system				
Data Collection	Lack of reliable data (Currently 3 countries reporting) Storage and analysis Lack of dissemination Lack of sustainability	- Support implementation of LIMS	SADC	SADC needs to investigate and resolve problems countries are encountering	On-going	

Annex 5: *The Closing Remarks* by Dr. David Phiri, FAO Sub-regional Coordinator for Southern Africa

Southern and Eastern Africa Regional Technical Meeting on Preparedness and Response Actions to Emerging High Impact Trans boundary Crop and Livestock Pests and Diseases

16 February 2017

Cresta Hotel Msasa

Harare, Zimbabwe

The Principal Director Department of Livestock and Veterinary Services, Dr. Ushewokunze-Obatolu

Representatives from the Southern African Development Community (SADC)

Representative from the World Organisation for Animal Health (OIE)

Director of the International Red Locust Control Organization for Eastern and Southern Africa Mr Moses Okhoba

Representatives of Development Partners;

Representatives from FAO HQs, Decentralised Offices and fellow UN agencies

Government officials from [names of participating countries];

Representatives from the private sector;

Representatives from Non-governmental Organizations (NGOs);

The Media Representatives

Ladies and gentlemen.

It is with gratitude and great pleasure that I stand before you to deliver these closing remarks after a successfully held meeting on emerging high impact transboundary pests and disease of crops and livestock. It is clear from the active participation that the meeting has met its objectives based on the issues identified, action plans developed and the recommendations that have been made.

I have had a chance to listen to some of the presentations and discussions and have noticed that there is still a lot of work that we need to do to begin to practically control the transboundary pests and disease problems, where they have emerged and to prevent them in countries where they are not. The fall armyworm has stood out as one major pest threat that needs urgent attention based on the interest that has been shown and the accompanying publicity and media attention that it has received. From the reports presented, 7 countries have so far confirmed the pest infestation which is almost half the Southern Africa region within the last few months of the agriculture season. It is therefore of great concern that it is probably only a matter of time before most of the region will be affected - and even more concerning that the pest could be here to stay. The costs and implication of such a scenario are very serious indeed – as seen in places where the pest is endemic like in Brazil where the government incur control costs in excess of 600 million per annum. The implications for livelihoods and food security are also too serious to contemplate.

With regards to animal disease threats, we have also had the opportunity to discuss emerging and existing threats of transboundary animal diseases – including the threat of H5N8 Avian influenza which has broken out in Uganda and in West Africa. Fortunately this meeting has given us the opportunity to discuss pre-emptive preventative actions and to enhance preparedness and response capacities of southern African countries. Some critical gaps in regional and national preparedness plans were identified and I hope that the action plans developed will help to close these gaps – including gaps in surveillance, diagnostic capacities and in awareness, We all agree that prevention is more effective and less costly than response actions so I do hope that this meeting has helped us to be better prepared to respond to Avian influenza and to protect the poultry sub sector and the livelihoods of millions of people - should the disease emerge in the region.

I am encouraged that the information sharing and the action plans and recommendations to arise from the meeting has given us a good starting point to begin to address the range of transboundary pests and diseases. In the case of countries affected by the Fall Armyworm, the reports presented by countries have pointed to the need for more refined assessments using standardized protocols across the region to enable accurate quantification of the problem. Critical areas that needs immediate attention are assessments on the spread and distribution, damage and resultant losses at household, national and regional levels.

FAO remains committed to support countries in close collaboration with SADC and other partners and stakeholders to implement the necessary assessment activities to understand the extent and intensity of the pest problem in the region to better inform our efforts and effectively mobilize the required resources in terms of both human expertise and financial layouts. The organization has initiated the process of procuring pheromone insect lure traps for attracting the pest. The traps are also instrumental in monitoring the Fall Armyworm and providing information on their prevalence.

Discussions during this meeting have identified gaps in our current early warning systems, response, preparedness, contingency planning including information dissemination and effective regional coordination. The meeting had proposed a number of interventions to close gaps and critical research areas that will provide a better understanding of the pest and disease dynamics in the region. Regarding pest management the experience with the Fall Armyworm control emphasizes the strong need for comprehensively addressing pesticides risk reduction giving priority to Integrated Pest Management (IPM)

I encourage participants to share this information they gained at this meeting with their counterparts in their respective countries and to lobby policy makers to fully appreciate the implications of the pest and disease problems for successful implementation of the recommended action plans.

We have also elaborated a way forward which should guide us in our next efforts and would therefore like to request that we continue to communicate.

I would like to thank all participants who managed to travel to this meeting and participated actively in the meeting. I would also like to thank the organising committee for a job well done under such short notice. With these few words I would like to wish you all safe journeys back home and successful implementation of the action plans agreed at this meeting.

I thank you!