Food and Agriculture Organization of the United Nations

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# Briefing Note on FAO Actions on Fall Armyworm in Africa

**FAO Briefing Note on FAW**
Date**: 15 December 2017**

## BACKGROUND

**Fall Armyworm** (*Spodoptera frugiperda*), FAW, is an insect native to tropical and subtropical regions of the Americas. Its larval stage (photo) feeds on more than 80 plant species, including maize, rice, sorghum, millet, sugarcane, vegetable crops and cotton. FAW can cause significant yield losses if not well managed. It can have a number of generations per year and the moth can fly up to 100 km per night.

**Figure 1**- FAW feeding on a maize leaf, Zimbabwe. ©*FAO/Edward Ogolla*

FAW was first detected in Central and Western Africa in early 2016 (Benin, Nigeria, Sao Tome and Principe, and Togo) and further reported and confirmed in whole of mainland Southern Africa (except Lesotho), in Madagascar, Seychelles (Island State), in Burkina Faso, Cabo Verde, Cameroon, Gambia, Ghana, Guinea Bissau, Mali, Niger, Senegal, Sierra Leone, and Ethiopia, Burundi, Kenya, Rwanda, Somalia, South Sudan, Sudan, Uganda, and it is expected to go further. Its modality of introduction, along with its biological and ecological adaptation across Africa are still speculative. The pest being detected in Sudan raises the alert for Egypt. A map on page 7 shows the spread of the pest to-date.

FAW is a dangerous transboundary pest with a high potential of continuing to spread due to its natural distribution capacity and trade. Farmers will need great support to sustainably manage FAW in their cropping systems through Integrated Pest Management.

## FAO COORDINATION ROLE IN FAW MANAGEMENT

1. **A Framework for Partnership for Sustainable Management of the Fall Armyworm in Africa:** FAO formulated a Framework for Partnership for sustainable management for the Fall Armyworm in Africa composed of seven components as follows: Management of FAW; Immediate Recommendations & Actions; Short-term Research Priorities; Medium to Long-term Research; Communications & Training; Surveillance & Early Warning; Policy & Regulatory Support; Coordination. This

Framework is intended as a guide for the development of projects and programmes by the various stakeholders in the areas of their comparative advantages, including FAO. The Framework has been presented during the 2nd Conference of the AU Specialized Technical Committee on Agriculture, Rural Development, Water and Environment on 3 October. It has received the STC endorsement while comments are still expected from stakeholders to finalize by end of 2017.

2. **FAO Programme for Action for Sustainable Management of the Fall Armyworm in Africa.** Based on the Framework for Partnership, FAO formulated a Programme for Action composed of 6 components costed at USD 87 million. This Programme has been presented as a side event at the African Union Second Conference of the Specialized Technical Committee on Agriculture, Rural Development, Water and Environment during a Partners' Round Table on 4 October 2017.

3. **African Union meeting:** the Framework for Partnership on FAW sustainable management in Africa was endorsed by the ministerial segment of the AU Specialized Technical Committee on Agriculture, Rural Development, Water and Environment on 6 October 2017. A Partners' Round Table on FAO Programme for Action for Sustainable Management of the FAW in Africa was organized on 4 October, 2017 as a side event of the 2nd AU STC.

4. FAO organized a **consultative meeting** with resource partners in Rome on 28 November on Fall Armyworm in preparation for a possible pledging meeting on FAW to take place early 2018.

5. **The Southern Africa Fall Armyworm stakeholders' Awareness, Partnership and Coordination meeting**: organized by FAO and SADC, 30 November – 01 December 2017, to discuss the regional Fall Armyworm response actions, lessons learnt, challenges and preparedness plans for the 2017/18 production season. The meeting was attended by representatives of SADC Member States, COMESA, resource and development partners, farmers' organizations, Non-governmental organizations, academia, and research organizations. The meeting resolved that stakeholders should focus more efforts on the development of appropriate education programmes and materials for farmers emphasizing on the need for countries to adopt IPM that emphasizes growth of a healthy crop with the least possible disruption to agroecosystems and encourages natural pest control mechanisms. It also noted the need to synergize with other agricultural production techniques such as Conservation Agriculture in order to scale up practices that appear to offer a win-win result such as use of certain crop associations. The meeting also resolved to create a sub-regional FAW Task Force that will be chaired by SADC, with FAO as Secretariat and membership drawn from representatives of the national task forces and all key stakeholders. The Task force will have virtual meetings every month to review the FAW interventions in the SADC countries.

6. **Consultative meeting** in Harare (14-16 February 2017) organized by FAO with governments and stakeholders from Southern Africa, which addressed pest awareness, situational update, emergency preparedness and rapid response for management of transboundary plant pests and animal diseases.

7. FAO organized and co-organized two back to back meetings in Nairobi:
   a. **FAO Southern Africa FAW Technical Meeting (25-26 April 2017)** was held to review and update current status of the pest as well as to assess its impact on production and livelihoods with extended participation of all FAO sub-regional offices in Africa.
   b. **All Africa Stakeholders Consultation meeting AGRA/CIMMYT/FAO (27-28 April 2017)** main objectives were to review the status of the pest incidence and impact in Africa and discuss the options for minimizing damage caused by the FAW. Participants in the meeting included CIMMYT, IITA, CABI, AGRA, National Governments, Plant Protection Officers and Extension Staff, Coordination of Agricultural Research and Development for Southern Central Africa, Resource Partners, and world renowned experts on Fall Armyworm research. It has been agreed in the above meeting with partners that FAO takes the lead coordination in FAW response in Africa.

## FAO ACTIONS IN RESPONSE TO FAW

FAO has taken and is taking several actions in response to FAW:

1. **FAO projects**: Since the onset of FAW, FAO has undertaken several actions to strengthen African countries' capacities to respond to FAW through Technical Cooperation Programme (TCP) projects and other funding mechanisms. So far, as at 05 December 2017, a total of 22 FAW projects (7 TCPfs and 15 fully fledged Development TCPs) have been approved totaling USD 5,701,000. FAW pipeline projects that still require funding are eight in number i.e. 2 TCPfs and 6 fully fledged Development TCPs with a total amount of USD 1,553,234. These projects aim at awareness raising, sensitization and strengthening pesticide management capacity at the producer level, strengthening capacity on early identification of FAW, efficient pesticide application and best practices , and restoring productive capacity. Japan supported South Sudan with USD 3m through FAO and WFP to support local authorities and farmers control FAW. An FAO OFDA-funded project of USD 944,000 is being implemented in East African countries to support the establishment of a community based FAW monitoring, forecasting, early warning and management system.
2. **FAW Experts Meeting:** FAO organized a South-South Cooperation FAW Technical Experts' Meeting in Accra, Ghana from 18-20 July bringing together experts from the Americas, Africa and others to share and update the state of knowledge on sustainable FAW management for smallholder family farmers. The experts reviewed key areas of management, including biological control, monitoring, economic thresholds, use of bio-insecticides, and the impact of plant biodiversity on FAW ecology. A synthesis report of the meeting has been prepared and shared with partners and can be found on (http://www.fao.org/food-chain-crisis/how-we-work/plant-protection/fall-armyworm/en/).
3. **FAW early warning system development:** FAO IT-Solutions is developing field tools such as a mobile phone app, databases and a web-based early warning platform. The first version of the mobile app has been released and will be deployed initially to southern and eastern Africa during December 2017. Several partners continue to investigate the efficacy of different pheromone traps and lures in the field. FAO is working to pre-qualify vendors in order to ensure rapid delivery of high quality traps and lures. Innovative technologies are being considered to monitor

FAW and diagnose damage using drones, remote sensing, artificial intelligence learning and Google Earth Engine.

4. **Farmers Field Schools (FFS) and training of rural advisory services and farmers:** FAO has facilitated the preparation of a FFS field guide on Integrated Pest Management for FAW to which Master Trainers and researchers contributed to its development. Training topics cover FAW identification, FAW biology and ecology; plant diversity, soil health management and other preventative measures to reduce infestation and help plants withstand damage to minimize yield loss; early scouting; mechanical controls; use of botanical pesticides, biopesticides and biological control agents; pesticide risk reduction; community monitoring and surveillance, and more. Training of FFS Master Trainers and experienced practitioners has taken place in all sub-regions of Sub-Saharan Africa through 5 regional training workshops. National-level trainings of FFS facilitators have been held in many countries including Benin, Burkina Faso, Cameroun, Democratic Republic of Congo, Ethiopia, Lesotho, Malawi, Mozambique, Niger, Nigeria, Senegal, Swaziland, Zambia, and Zimbabwe, so that FFS can be rolled out through thousands of Farmer Field Schools implemented by FAO, Governments, extension services, farmer organizations and their financial and technical partners. In addition to FFS, trained FFS facilitators, who are often government rural advisors/extension agents, can also conduct 1-2 day field courses for farmers to reach rural communities rapidly. Information sharing mechanisms have also been established including a FAW webpage on the Global FFS Platform http://www.fao.org/farmer-field-schools/en/ and an active whatsapp group of FFS trainers across Africa.
5. **FAW impact assessment**: FAO is working closely with CIMMYT and CABI, and has taken a leading role in formulating initial actions for impact monitoring and has been supporting assessment processes in Southern Africa. FAO is now working to deepen coordination and partnership on impact monitoring with CABI and CIMMYT at the continental level. In collaboration with the Ministry of Agriculture, FAO has released a national level FAW impact assessment study for Namibia. The study estimated losses due to FAW to be about 8% of national maize production. Within the Impact Assessment working group, discussions are taking place to agree on a core set of indicators and tools to be used by all partners for impact assessment work. The discussions are expected to be concluded in January 2018. FAO has also completed a study which compares the various methodologies and estimates of maize losses due to FAW which have been conducted and published during 2017.
6. **FAW technical working groups coordinated by FAO:** Eleven technical working groups coordinated by FAO were formed each led by the appropriate institute/organization; biological control; bio-pesticides; synthetic chemical pesticides; monitoring and early warning; communication, awareness and knowledge management; farmer field schools, extension, plant clinics; agro-ecology; impact assessment; conventional host plant resistance; transgenic resistance; quarantine and phytosanitary measures. Most groups have developed their priorities and results are presented in the regular coordination teleconferences. The TWGs will prepare action plans for 2018.
7. **South-South Cooperation:** A letter of Agreement between FAO and EMBRAPA (Brazilian Agricultural Research Corporation) is being considered as South-South Cooperation for capacity development of selected African Universities in the areas of biological control and local production of biological control agents.

Experts from EMBRAPA with experience in FAW will carry out the training and capacity development.

8. **A side event** on FAW status in Africa and way forward has taken place during FAO Conference on 4 July 2017. The panel of the event gathered Ministers of Agriculture of Zimbabwe and South Africa, Deputy Minister of Ghana, Ambassador of the UK and Director of DFID Africa.
9. **An Advisory Note, Q&A, Guidance Notes, and Key FAO messages on FAW** were prepared including FAO position on the use of pesticides and Genetically Modified (GM) maize and widely shared within FAO HQ and Decentralized offices in Africa. All notes are posted on the FAO Food Chain Crisis website (http://www.fao.org/food-chain-crisis/how-we-work/plant-protection/fall-armyworm/en/).

**Specific actions at sub-regional level:**

**Central Africa:** A FAW training of trainers on FAW management was organized in Yaoundé 2-7 October in collaboration with IITA and gathered 40 participants coming from 8 countries in Central Africa region. Each country was represented by at least 3 experts (NARS, FFS expert, NPPO). Countries have been requested to elaborate their strategic plan for FAW management. FAO organized a workshop with stakeholders in Central Africa namely NPPO's, IAPSC, IITA, the RECs (ECCAS and CEMAC) and PRASAC, in Kinshasa, DRC, 11-13 July 2017. A sub-regional roadmap was developed. Countries of the sub-region that do not benefit yet from TCPs in FAW management, TCP-fs are being prepared at country level to study spread and infestation. FAO organized a project-closing workshop in Sao Tome and Principe, 24-26 October, during which the country elaborated its national strategic plan for FAW management.

**Eastern Africa**: FAO has been facilitating information and knowledge exchange among countries within Eastern Africa and between the various sub-regions and enhancing South-South Cooperation. Japan supported South Sudan with USD 3m through FAO and WFP to support local authorities and farmers control FAW. FAO is implementing a project funded by USAID/OFDA for a budget of USD 944,000 "Establishing an emergency community-based Fall Armyworm monitoring, forecasting, early warning and management system in eastern Africa" in collaboration with the Desert Locust Control Organization for Eastern Africa (DLCO-EA), CABI, ICIPE, and Ministries of Agriculture of Eastern African countries. Work plans and standardized protocols were developed with all project stakeholders at a recent Inception Workshop in Entebbe, Uganda (13–15 November 2017).

FAO conducted a sub-regional FAW training of trainers in Addis Ababa, 24-28 July 2017 to increase the skills and knowledge of national plant protection and extension experts on FAW. Nine countries from the East Africa participated. The trained will in turn train other staff and farmers on management of the pest in their respective countries.

FAO and ASARECA co-organized a Sub-regional FAW Strategy Development Meeting from 18-20 September 2017 in Entebbe, Uganda. The meeting brought together a wide range of stakeholders (RECs, relevant research and development organizations, governments, private sector, resource partners, etc.) to ensure a strong coordination of FAW management at subregional level. A sub-regional strategic plan was developed following the FAO Strategic Framework. This meeting

was preceded by the USAID-CIMMYT Workshop on FAW Pest Management Field Manual Development (Sept 16-17, 2017).

**Southern Africa**: FAO in collaboration with the Agricultural Research Council, CABI and CIMMYT conducted a regional FAW Training of Trainers (ToT) in Pretoria, South Africa, 26-31 June 2017 to increase the skills and knowledge of national plant protection and extension experts on FAW. The training attracted 60 participants who will in turn train other staff and farmers on management of the pest in their respective countries. Topics covered included FAW identification and diagnosis, scouting, early warning systems, contingency planning, impact assessments and Integrated management options for the pest.
FAO facilitated a USAID funded Regional Refresher Training for Farmers Field School (FFS) Master Trainers on Fall Armyworm Management, 20-27 September, 2017 in Malawi under the theme: "*Farmer Field Schools: a platform for sustainable management of Fall Armyworm Infestation in Africa*". This training was attended by participants from 10 SADC countries, including Angola, Botswana, DR Congo, Lesotho, Malawi, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.
Further, a number of national ToT facilitated by FAO took place in Malawi, Namibia, Mozambique and South Africa (Stellenbosch).
FAO has conducted case study assessments in collaboration with national Vulnerability Assessment Committees (VACs) and Ministries of Agriculture to determine FAW impacts on the food security and livelihood impact in six countries (Malawi, Mozambique, Namibia, Zambia, Zimbabwe). The assessments used quantitative and qualitative assessment tools that were developed by FAO and shared with countries in Southern Africa. Results from the assessments are available
Crop Watch Africa, an FAO service provider based in South Africa, was contracted in mid-2017 to build capacity in SADC countries for a web-based FAW monitoring and early warning system using a grid of sex pheromone traps. Initial trainings were conducted in Botswana, Lesotho, Madagascar, Malawi, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. A second round of country support trainings have been undertaken in Angola, Mozambique, Swaziland, Lesotho, South Africa, Zambia and Zimbabwe. Countries continued to set up and commission the traps as well as capturing and uploading data on trap catches. FAO has distributed 2,600 traps to the countries in the region. Plans are that this surveillance system will soon be migrated to the FAO continent wide FAW surveillance system presently under development.

**Western Africa:** FAO has conducted a sub-regional FAW ToT in Abuja, Nigeria 5-10 September 2017 to increase the skills and knowledge of national plant protection and extension experts and FFS practitioners (Master trainers and facilitators) on FAW in Western Africa. The trained will in turn train other staff and farmers on management of the pest in their respective countries. Topics covered were FAW identification and diagnosis, scouting, early warning systems, contingency planning, impact assessments and integrated management options for the pest.
Missions were conducted to Burkina Faso, Cote d'Ivoire, Guinea Bissau, Guinea Conakry, Liberia, Mali and Sierra Leone. In-country information workshops were organized as well as field visits for FAW presence confirmation. Presence of FAW was ascertained for Sierra Leone and Liberia as a result of the missions.

## Map of areas affected by Fall Armyworm (as of December 2017)