Food and Agriculture Organization of the United Nations

REPORT

2023 Annual Meeting on the Implementation of FAO Global Action (GA) for Fall Armyworm (FAW) Control in Africa

03 April 2023

FAW Secretariat, Global Action for FAW Control

Contents

1. Opening Remarks

[1] Mr Jingyuan Xia, Executive Secretary of the Fall Armyworm (FAW) Secretariat and Director of Plant Production and Protection Division (NSP), opened the meeting and welcomed the participants and observers, including national focal points (NFP) from demonstration and pilot countries in Africa.

[2] He emphasized the value of the FAO Global Action (GA) for Fall Armyworm Control and noted it has created a functional and effective coordination network across three regions and eight geozones, each with a demonstration or hub country that is, in turn, linked with over 50 pilot or scale-up countries. That functional co-ordination mechanism links global, regional and national efforts directly with activities in farmers' fields to ensure that solutions are delivered where they are needed most.

[3] Mr Xia noted that in 2016, only six African countries reported the insect pest; but today, over 79 countries across Africa, the Near East, Asia and the Pacific are reporting FAW. In Africa alone, FAW is estimated to have caused annual losses as high as USD 9.4 billion; furthermore, FAW introduction has also intensified the use of chemical pesticides in many countries, risking human and environmental health.

[4] Together with various partners working through the GA, several integrated pest management (IPM) tactics in geo-zones have been tested, validated and disseminated with good results.

[5] Mr Xia said that progress is seen in a reduction in FAW-affected areas and in reduced yield losses in many countries, while IPM capacity development has been increased, particularly among farmers. As a result, farmers are seeing economic benefits through improved yields and environmental benefits are seen through reduced use of chemicals on farms.

[6] Good outputs in Africa have included knowledge of native parasitoids and predators regulating FAW populations; testing of microbial and botanical biopesticides by partners such as the International Centre of Insect Physiology and Ecology (*icipe*), the Centre for Agriculture and Biosciences International (CABI), and Farmer Field Schools (FFS) show very promising results and strong benefits for farmers without use of chemical pesticides.

[7] As well, CABI's Global Impact Study of FAW and the GA, through piloting the methodology in India and Kenya, has demonstrated four major indicators of successes including: strong coordination, innovation through IPM packages, multistakeholder engagement, and effective FFS.

[8] Africa is well advanced in the fight against FAW under the GA and achievements are built on strong community-based monitoring, with farmers using the Fall Armyworm Monitoring and Early Warning System (FAMEWS) application; biocontrol-based measures; and use of FFS for training and knowledge exchange, said Mr Xia.

[9] The FAW Secretariat at FAO will support global capacity development and information exchanges on particular fronts in 2023: a biocontrol forum in June in Kenya, aimed at enhancing the capacities of national stakeholders to scale-up the production and use of biological control measures in invasive pest management; a global symposium on sustainable FAW management in October 2023 in China; and a side event on the successful completion of the GA during the FAO Council meeting on 4 December 2023.

[10] He outlined objectives for this meeting: participants will report on major achievements in GA implementation; discuss lessons learned from three years of GA implementation, including ways to apply these lessons in tackling other pests and diseases relevant to the continent; and agree on a roadmap for the conclusion of the GA at the end of 2023.

2. Adoption of the Agenda

[11] Mr Maged ElKahky, agricultural officer (NSP) and moderator of the meeting, outlined the agenda *(Appendix 1)*, which was adopted.

3. Reports from Demonstration Countries

[12] Demonstration countries in Africa reported on the FAW situation, their major activities and achievements of the first semester of 2023, core activities planned for the second semester, and suggestions for the GA.

[13] **3.1 Burkina Faso** Mr Nabie Bekouanan, Ministry of Agriculture and Food Security, Burkina Faso, reported that farmers were using chemical pesticides, most with an emamectine benzoate base, to fight FAW. However, efforts are being made under the GA to sensitize producers and agricultural support agents on recognizing FAW and alternative control methods. Application of biopesticides showed good results, including neem oil and biopesticides based on *Baccilus thuringiensis* (Batik); use of the *Hyptis suaveolens* extract also showed good results; while organo-mineral fertilization showed fair results.

[14] Core activities for 2023 include: training producers on IPM options resulting from this year's research; training of agricultural extension agents; communication on integrated management options for FAW; continuing to collect FAW infestation data on a regular basis; holding a task force session in the second quarter of 2023.

[15] Challenges and recommendations for this year include: mobilizing resources to support countries in managing FAW and other emerging pests; organizing quarterly coordination meetings to review the status of implementation of activities; organizing training for NFPs.

[16] **3.2 Cameroon** Mr Colince Nguelo, Directorate of Agricultural Development, Ministry of Agriculture and Rural Development (Minader), said key achievements from 2019-2022 included progress on monitoring and early warning using traps in two regions; field scouting in all ten regions; detection of FAW before and after crop planting. In the same period, technology results included release of 127 786 adults of FAW egg parasitoids (*Telenomus remus*) reared in the lab and released in west and central regions of Cameroon, which cover two of its five agro-ecological zones. Evaluations one month after releases showed significant increase in parasitism in the release field – from 16.7 percent (plus or minus eight percent) before release, to 83.4 percent (plus or minus 9.8 percent) after release in the central region.

[17] Core activities for 2023 include: demonstration platform in Bimodal Humid forest agroecological zone; test of technologies to manage FAW; test of biological pesticides, multiplication of hybrid seeds from the International Maize and Wheat Improvement Center (CIMMYT); two trainings of FFS facilitators to run at least 35 FFS; two trainings for agricultural extension workers in surveillance techniques with the FAMEWS app; using Open Days in demonstration plots to share knowledge with more farmers and with pilot countries.

[18] Egg parasitoids (*Telenomus remus*) were released in two ago-ecological zones, along with training of 11 members (including two women) of regional and local extension services of Minader; and 70 farmers, including 29 women, trained on biology of FAW and its natural enemies, and on biological control concepts. A geozone workshop involving five pilot countries was held to validate the IPM strategy with 30 participants trained, including chiefs of phytosanitary base in five agro-ecological zones on using the FAMEWS app.

[19] **3.3 Kenya** Ms Teresia Karanja, Plant Protection and Safety Secretariat, Government of Kenya, and NFP for the GA, said 34 683 166 tonnes of maize was produced in 2022; yield loss was approximately 1.3 percent, or 464 376 tonnes. The majority of farmers (about 90

percent) use control measures against FAW, including pesticides, bio-pesticides, and IPM options. Key achievements between 2019 and 2022 included: 130 pheromone traps installed for monitoring and early warning; training in all aspects of FAW management for more than 1 500 technical officers and about 20 000 farmers, agrodealers and other stakeholders.

[20] Demonstration plots established in four FFS in two counties have been evaluating: a botanical extract from *Tithonia diversifolia*, aloe vera, and chilies; intercropping between maize and beans; a biopesticides application (*Nimbecidine*); and push-pull with a mono crop of a maize stand. Data collection was continuing from FFS demonstration plots.

[21] Core activities for 2023 include: raising awareness among new policymakers in both national and county governments; establishing biocontrol technology demonstration and evaluation sites among FFS groups, Kenya Agricultural and Livestock Research Organization (KALRO) Embu, Mabanga Agricultural Training Center (ATC) and *icipe* locations; developing packages and disseminating technical materials to extension service providers and farming communities; increasing awareness among farmers on FAW sustainable management. Other plans include adopting digital management systems for monitoring and early warning systems, including reporting systems between national and county stakeholders and lobbying for additional resources to implement migratory and invasive pests management strategy in Kenya for enhanced coordination.

[22] Country preparedness and rapid response to invasive pests is to be enhanced by building and strengthening technical and institutional capacities at all levels; supporting research to develop options for managing FAW and other emerging pests; resource mobilization and lobbying for a national contingency fund to continuously manage new emerging pests comprehensively.

[23] Recommendations include adopting digital management systems for monitoring and early warning systems including reporting systems between national and counties governments; stronger communication and information flow between all levels of government; stronger FFS approach in training farmers in FAW control; support for research to develop options for managing emerging pests.

[24] Mr Stanley Kimereh, programme associate in FAO Kenya, emphasized the importance of strengthening and upscaling FFS training, particularly farmer-to-farmer knowledge sharing.

[25] **3.4 Malawi** Ms Ida Mwato, Department of Crops, Ministry of Agriculture, said FAW is one of Malawi's most significant insect problems in crop production, especially in maize. FAW infestation levels range from one percent to 26 percent in most parts of the country. In some districts, infestation levels surpassed 20 percent, especially in the hot spot areas like Karonga (26 percent), Phalombe (25 percent), and Blantyre (22 percent).

[26] Key achievements from 2019-2022 include: three demonstration sites initiated (the fourth was damaged by a cyclone): Chitedze Research Station (national) 10 ha; Luanar (regional) 5 ha; Lweya Irrigation Scheme (regional site north) 5 ha. Across sites, crops were treated with different management and botanicals, including neem based on scouting results, *Tephrosia vogelli ombwe*, *Neorautanenia mitis dema mphanjobvu*, maize/cowpea intercrop, maize/soya bean, maize/pigeon peas, mulching, a *flubendiamide* synthetic pesticide, and an untreated crop regularly scouted. Good agricultural practices were applied at all plots (timely field operations, and use of improved and good quality seed.)

[27] FAW management achievements: farmers are adopting cultural control options as part of IPM to reduce reliance on synthetic pesticides (e.g. use of certified seed, use of organic manure, early planting, intercropping); increased adoption of botanical

pesticides; frequent monitoring and spraying based on scouting results; most farmers now aware of use of low-risk pesticides based on the green (preventive) and yellow (low-risk control options) approach; use of indigenous control options like sand, fish soup, soap; and physical control.

[28] Indicators of an improvement in farmers' capacities in Malawi include the fact most farmers are able to identify FAW and are also able to practice IPM in FAW management, combining a number of management options; pesticides are a last resort. Farmers are now aware of hazards associated with over-dependency on synthetic pesticides and adopting safer control options, as well as spraying based on scouting results.

[29] Achievements include evaluation of technologies, which started in 2017 and will close in 2023; approval and release for use of forteza duo as a seed treatment in Malawi; evaluation of three hybrid tolerant varieties (released in 2023); and evaluation of botanicals (aqueous neem now released for use in Nsanje district).

[30] Core activities in 2023 will include coordination via NTF meetings and mapping FAW management technologies; procurement and distribution of 32 000 lures and trapping strips; quarterly surveillance and monitoring of FAW; ongoing collection and sharing of standardized monitoring data based on FAMEWS; strengthening 64 CBAF groups; measuring yield losses and analyzing impact of FAW infestation; conducting validation studies on new FAW technologies.

[31] Milestones for Malawi to date include: five technologies evaluated and validated; capacity development shown by training 800 staff and 480 000 farmers in FAW management; 28 FFS established (one per district); 25 000 information materials on FAW management (leaflets, flyers, posters) printed and distributed; and 140 plant clinics established and operational. FAW management was demonstrated at four sites, two farmer tours conducted, 12 field days (local and international).

[32] Challenges include inadequate resources. Recommendations are to build capacity of the NFP to generate FAW risk and prevalence maps at national and local level using FAMEWS; train more community-based groups in FAW monitoring; train staff on biopesticides and biocontrol options; fast-track disbursement of funds under the GA work plan; facilitate a southern Africa geo-zone knowledge sharing meeting.

4. Report from the Region

[33] Mr Jean Bahama, regional coordinator for Africa in the GA at the FAO Regional Office for Africa (FAORAF), said that regional coordination and information sharing activities in 2019-2022 included: regional steering group meetings; a regional workshop on the GA and a regional workshop on biological control and biopesticides use organized; the second international conference on FAW IPM organized in September 2022 by the FAO Subregional Office for Southern Africa (SFS) with World Agroforestry (ICRAF), ZARI and SADC.

[34] At the subregional level between 2019 and 2022, geo-zone coordination meetings were held under the GA with FAO Subregional office for Western Africa (SFW), SFS, SFC, and SFE; two webinars held, one to share experiences in FAW monitoring and forecasting; the second, with China and SFS discussing FAW IPM technologies.

[35] A virtual conference on FAW control titled "Developing Sustainable FAW IPM Options for Smallholder Farmers" organized with SFS, World Agroforestry (ICRAF) and Southern Africa Development Community (SADC); FAW IPM packages developed and validated; an information exchange and knowledge-sharing visit organized for Zambia to Malawi in February 2023.

[36] Key results and impacts of the FAW GA in SFS from 2019-2022 included: enhanced coordination and collaboration on FAW control with FAW Coordination Group established; national task forces (NTFs) established; FAW IPM package for all sub-regions developed and being implemented. As a result, crop yield losses were reduced; for example, a drop of about 40 percent in FAW infestation was reported in Mozambique through adoption of recommended management measures such as early planting and use of botanicals.

[37] Other examples from regional countries include research activities in Burkina Faso that included trials on tolerant varieties and mass rearing of *Telenomus remus*, as well as other parasitoids. The Zambia learning/exchange visit to Malawi showed a demonstration country IPM outreach to pilot countries within the framework of the GA in the southern Africa geo-zone.

[38] Challenges for 2023 include funding to support meaningful dissemination and local adoption of IPM packages (particularly for pilot countries); support is also needed for more efforts on monitoring, forecasting and early warning for FAW; greater support for community-based uptake of biological control/agro-ecology approaches as concerns are growing that a resurgence of FAW and other lepidopteran pests will increase due to climate shifts (drought conditions); concerns with synthetic pesticides use.

[39] Looking ahead to the proposed Global Action on Plant Health: key objectives of the FAW GA should be extended to cover plant health: i.e., enhance coordination and collaboration on control; reduce crop yield losses; and reduce the risk of spread of pests. Rregional and national strategies and action plans as well as mandates of NTFs on FAW can be expanded to cover other priority pests/diseases.

[40] Coordination, communication mechanisms for FAW can be expanded and strengthened to cover Plant Health; mechanisms to scale up IPM (e.g. SADC Seed Catalogue for wide diffusion of FAW-tolerant varieties) can be used but need strengthening; capacity development and technology delivery on FAW can be expanded and should include plant policymakers, health institutions, practitioners and stakeholders.

[41] Challenges will include defining priority plant pests for focus in different geo-zones; delivering plant health capacity development and technology to local farming communities (plant health clinics and FFS can play a key role).

5. Update from the FAW Secretariat

[42] Mr Buyung Hadi, Coordinator of the FAW Secretariat in NSP, described work to strengthen regional collaboration and enhance field capacities. That included three regional workshops held in 2022 in Asia, NENA and Africa involving more than 150 total participants from over 30 countries. Key technologies related to monitoring and early warning, cultural interventions (push-pull, intercropping), biocontrol and biopesticides used. Extension efforts at this time included government-led coordination; FFS; demonstration plots.

[43] Major global initiatives of 2022 included: global protocols for technology evaluation, development of a mobile data collection tool by ICRAF, training for research teams, global protocols adapted for the Philippines and Solomon Islands, data committed from Egypt and Indonesia; other countries are welcome to join the global trial or to submit data conducted before the development of the global protocol, said Mr Hadi. Focus was brought to the socioeconomic impact of FAW, changes in IPM practice over time, the impact of GA on management practices, and yield losses due to FAW.

[44] As part of the CABI survey of the GA, with the methodology piloted in Kenya and India in 2022, household surveys and key informant interviews were conducted in July 2022.

[45] Findings included: FAW remains a major challenge to maize production; infestation and damage levels on farmers' fields are decreasing; yield loss estimates associated with FAW presence were 5.5 percent in Kenya and 5 percent in India – that compares to yield loss estimates in the first years of FAW invasion of 11 percent in Kenya to 58 percent in India. In the 2022 cropping season, drought more than FAW affected maize productivity.

[46] CABI findings also showed farmers were increasingly using a combination of cultural, mechanical, biological methods for FAW management; FFS and village awareness meetings were the key drivers of adoption in Kenya and India. Adoption of biological control was stimulated by participation in FFS, demonstrations, plant clinics and village awareness meetings.

[47] The overall conclusion was that the GA response to FAW has been effective, inclusive, empowering with a bundled approach of providing adequate finance, extensive research and coordination. Coordination was critical to ensuring that the FAW response led to positive results for farmers; it has been highly collaborative involving a multiplicity of actors; government buy-in and leadership were essential.

[48] For 2023, core activities through the GA will emphasize coordination and communication through geozone information exchanges including the biocontrol forum to be held in Kenya in June 2023 and the global forum on sustainable FAW management in China in October 2023.

[49] Core activities concerning research and learning will include an analysis of submitted data from the demonstration countries; a global trial using shared protocol/mobile app with ICRAF; and communicating results of the CABI impact assessment. Core activities in 2023 concerning training will include FFS and large-scale demonstrations in countries; training on biopesticide registration; and training on mass production of natural enemies/ biopesticide (as a part of the June biocontrol forum).

[50] Mr Hadi summarized lessons learned from the GA in the context of a proposed Global Action on Plant Health: mobilize global technical expertise (on all approaches, from prevention, monitoring to management, from all types of stakeholders) through an ad hoc technical working groups to quickly send recommendations of options to national partners.

[51] Lessons include noting that some countries have adequate research, extension, policy, and regulatory infrastructure; but other countries will need stronger support. Global, regional and sub-regional fora can be used for information exchange; apply national-level/farmer-level capacity development in research, extension and policy/regulatory aspects where needed. Data collection and analysis on impacts, interventions, pest traits, dissemination methodologies, etc. should be gathered for continuous learning on best practices.

[52] Mr Hadi provided a potential outline for a new Global Action on Plant Health: Identify priority invasive pests and pathogens/crops for each region in collaboration with countries and FAO regional offices; create synergy with ongoing FAO and partners' regional/global initiatives on plant health, identify champions for work components (e.g. prevention and preparedness, monitoring and early warning, IPM, dissemination and adoption); concentrate field efforts in select hub countries with regular regional

and global info sharing fora; embed plant health as an inherent element of FAO's One Health approach and initiatives.

6. Open Discussion

[53] Mr Xia asked Ms Mwato to describe Malawi's successful mechanism for information sharing and encouraging cooperation within the geozone. She highlighted the information exchange and knowledge-sharing visit organized for Zambia team members to Malawi in February 2023 in which other countries, such as Mozambique, took part remotely.

[54] Mr George Phiri, Assistant FAO Representative, Malawi, noted that a similar knowledge sharing event is being organized with Mozambique and Tanzania hosting. He urged the launch of a geo-zone IPM strategy as another way of sharing lessons learned.

[55] Mr Kuate Sebua, plant protection officer, Ministry of Agricultural Development and Food Security in Botswana, asked if FAW is still the worst pest for maize in the southern Africa geozone; Ms Mwato said FAW mostly fed on maize crops.

[56] Mr Hadi, in response to funding questions, said the FAW Secretariat through the GA has provided some seed funding for demonstration countries to validate technologies and to fund some of the regional, sub-regional meetings and farmer-level capacity development. Successes in that regard means that donors are now looking at more national level/country level projects. He said the Secretariat can also partner with countries, NFPs, and FAO country office focal points to identify funding partners and opportunities.

[57] Mr Elkahky, in response to Mr Fidele Kengni in FAO Cameroon, said data is readily available and updated on FAMEWS.

[58] Mr Nguelo in Cameroon asked if strategies exist for other pests in addition to FAW.

7. Concluding Remarks

[59] Mr Xia described the meeting as very successful and said a great deal of progress has been made under the GA, particularly evident in its strong coordination and technical achievements. Although FAW continues to pose a very serious threat, control efforts under the GA are heading in the right direction, particularly through the four demonstration countries in Africa, which he said were showing very good progress.

[60] Take-home messages for the demonstration and first-line pilot countries in the next semester include a renewed emphasis on field demonstrations to help farmers understand and use good technology for FAW control; a strong focus on data collection from the four-year experience of the GA for analysis; and all countries must ensure they can demonstrate impacts including economic, social, and environmental benefits and share their data.

[61] With 2023 being the last year for GA, the way forward includes demonstrating the success of the GA through strong data; and analyses of the data to understand what made the GA a success. Mr Xia said Burkina Faso was a sound example for other countries to be shared at a year-end FAO global symposium on FAW management in Beijing, demonstratating the transition from emergency control to sustainable management.

[62] He also urged countries to increase awareness of FAW and GA control measures**,** while they prepare for the transition of the GA on sustainable FAW management to Plant Health.

Appendix 1: Agenda

The 2023 Annual Meeting on the Implementation of the FAO Global Action for Fall Armyworm Control in Africa

3 April 2023 (2pm Rome time)

AGENDA ITEMS	DOCUMENTS	PRESENTER	PROPOSED TIME (min)
1 Opening Remarks		Mr Jingyuan Xia Director of Plant Production and Protection Division (NSP), FAO	10
2 Adoption of the Agenda		(moderator) FAW Secretariat (NSP), FAO	5
3 Reports from Demonstration Countries[1]			
3.1. Burkina Faso	Presentation (PPT)	Mr Bekouanan Clovis Nabie, Ministry of Agriculture and Food Security	10
3.2. Cameroon	PPT	Mr Colince Nguelo, Directorate of Agricultural Development, Ministry of Agriculture and Rural Development.	10
3.3. Kenya	PPT	Ms Teresia Karanja Plant Protection Service Division Ministry of Agriculture	10
3.4. Malawi	PPT	Ms Ida Mwato Department of Crops Ministry of Agriculture	10
4 Report from the Region [1]	PPT	Mr Jean Bahama Regional Coordinator for Africa,	10
		Global Action for FAW Control FAORAF represented by	
5 Report from the FAW Secretariat	PPT	Mr Buyung Hadi Coordinator, FAW Secretariat (NSP)	10
6 Open Discussion (Major challenges and suggestions)		All participants	30
7 Concluding Remarks		Mr Jingyuan Xia	5

Appendix 2: Planting data

Country	Year	Total planted acreage (Ha)	Area affected (Ha)	Area under control (Ha)	Yield loss estimate (%)		
Burkina Faso	2022	1 078 908	66 667	38 121	Study in progress		
	2021	1 087 459	77 630	57 300	5 to 15		
Cameroon	2022 (Jan-June)	1 305 000	900 000	125 000	n/a		
	2021				n/a		
	2020				n/a		
Kenya	2022	2 058 748	273 162	245 845	1.3		
	2021				n/a		
	2020				n/a		
Malawi	**2022**	1 455 798	304 583	59 405	n/a		
	2021				n/a		
	2020				n/a		

Country	Outputs (# of people trained, knowledge products, etc.)	Challenges	Core activities
Burkina Faso	Average of 1 200 producers per year trained via FFS on FAW management in methods including manual destruction of eggs, larvae, plant extracts; 170 agents trained in implementation of monitoring and early warning system (FAMEWS) application. 35 facilitators trained in 2022; 825 producers trained on integrated FAW management through 30 FFS; 30 guided visits to demonstration projects organized with. 1 224 producers participating.		Key results of research initiated in 2021 by research institutes at Nazi Boni University (UNB) and Joseph Ki-Zerbo University (UJKZ) included production and release of Telenomus remus parasitoid that preys on FAW eggs. Findings suggest at least two releases of the parasitoid required to destroy FAW eggs. Other research involved local and improved varieties of maize, suggesting that in both laboratory and field, the variety KEJ is the most tolerant of FAW, followed by varieties Wari, SR21 and Bondofa.

	As well, 30 demonstration plots established and about 1 356 producers, including 881 women, participated in tours.		Research into mass trapping of FAW adults suggests artisanal traps weren't efficient; trapping dependent on density of conventional traps; and mass trapping is possible, but the number of traps must be increased. Efficacy of local strains of entomopathogens is being researched with diverse potential of local enemies present in all areas surveyed. Research through INERA shows entomopathogens – including six pathogenic fungi with 12 strains – have been isolated; a study of the pathogenicity of these fungi on FAW underway at the laboratory in Farakô-Ba. Push-pull technology using Desmodium uncinatum and Brachiaria mullato II is being evaluated for FAW for CLA control; results of the 2022 wet season experiments being analyzed while dry season experiments are underway. Other forms of biological control being evaluated.
Cameroon	Workshops for over 300 extension workers, leaders of farmers' organizations on FAW identification and damages; included 100 women, held in five agroecological zones. Demonstration platforms set up by MINADER for five technologies in two agro-ecological zones with over 50 participants and members of five farmers' organizations with over 25 percent women members; extension	Lack of pheromone traps; other maize pests must be tackled, such as Helicoverpa armigera, (cotton ball worm).	University of Douala continues to test technologies to manage FAW (evaluation of five different plant species with insecticide effects). Plant extracts have an effect on FAW mortality by contact rather than by ingestion; however, tests must be repeated by increasing dosages.

	workers from Cameroon's center and west regions.		
Kenya	Some 24 FFS facilitators and 26 extension officers trained on IPM technologies, use of the FAMEWS app, plus monitoring and pheromone traps. Over 1 500 farmers sensitized on FAW identification and IPM options.	Challenges include weak coordination in public and private sector at national and regional levels; inadequate communication, awareness-raising, training, and capacity building; inadequate national monitoring, early warning systems and reporting; the cumulative effects of prolonged drought, especially in the low altitude regions.	Conduct technology evaluation at demonstration plots; conduct monitoring activities; conduct three-year comprehensive analysis; field days at demonstration plots to disseminate best practices; conduct geozone trainings with pilot countries; hold webinars for dissemination and adoption of best practices; and mobilize resources for upscaling best practices in IPM technologies.
Malawi	Five technologies evaluated, validated; 800 staff and 480 000 farmers trained in FAW management; 28 FFS established (one per district); 25 000 information materials on FAW management (leaflets, flyers, posters) printed and distributed; 140 plant clinics established and operational. FAW management demonstrated at four sites, two farmer tours conducted, 12 field days held (local and international).		Building capacity of NFPs to generate FAW risk and prevalence maps at national and local levels using FAMEWS; training community-based groups on monitoring FAW; training staff on biopesticides and biocontrol options; fast-track disbursement and provision of funds under the GA workplan.

Appendix 3: Participants List

	Given name, surname	Role, Organization/Institution
Annual Meeting (Africa) Attendees		
1.	Mr Jingyuan Xia	Director, Plant Production and Protection Division (NSP), Executive Secretary of the FAW Secretariat, FAO
2.	Mr Buyung Hadi	Agricultural Officer, FAW Secretariat, Plant Production and Protection Division (NSP), FAO
3.	Mr Maged Elkahky	Agricultural Officer, FAW Secretariat, Plant Production and Protection Division (NSP), FAO
4.	Ms Anne Sophie Poisot	Agricultural Officer, FAW Secretariat, Plant Production and Protection Division (NSP), FAO
5.	Mr Bekouanan Clovis Nabie	Ministry of Agriculture and Food Security, Burkina Faso (NFP)
6.	Mr Colince Nguelo	Directorate of Agricultural Development, Ministry of Agriculture and Rural Development, Cameroon (NFP)
7.	Ms Ida Mwato	Department of Crops, Ministry of Agriculture, Malawi (NFP)
8.	Ms Rose Kamau	Plant Protection and Food Safety Directorate, Kenya
9.	Ms Teresia Karanja	Plant Protection and Food Safety Directorate, Ministry of Agriculture, Kenya (NFP)
10.	Mr Copperfield K. Banini	Deputy Director, Ministry of Food and Agriculture, Ghana
11.	Mr Kuate Sebua	Plant protection officer, Ministry of Agricultural Development and Food Security, Botswana
12.	Ms Carla Tavares	Director, Plant Protection Ministry of Environment, Agriculture and Fishing, Cabo Verde
13.	Mr Eric Adossu	Chef Service de la Protection des végétaux et du Controle Phytosanitaire Benin
14.	Mr Adama Malle	Chief de Division Surveillance of plant protection office, Ministry of Agriculture, Mali
15.	Mr Garmonyou A. Sam	Entomologist, Ministry of Agriculture, Liberia
16.	Mr Ebenezer Idachaba	Deputy Director Nigeria Agricultural Quarantine Service (NAQS)
17.	Mr Moses Adegboyega Adewumi	Ministry of Agriculture, Nigeria
18.	Ms Mamissi Epse Karamoko Coulibaly	Chef de Service de la Protection Phytosanitaire, Côte d'Ivoire
19.	Mr Ousmane Diene	Government of Senegal
20.	Mr Landing Sonko	Director, Plant Protection Services Yundum, Gambia
21.	Mr Salissou Oumarou	Directeur des Études Biologiques à la Direction Générale de laProtection des vegetaux, Niger
22.	Ms Raymonda Johnson	Assistant Director/Head of Crop Protection, Ministry of Agriculture, Forestry and Food Security (MAFFS), Sierra Leone
23.	Mr Zinha Adriano da Costa	Guinea Bissau

24.	Mr Wubante Girma	Senior Entomologist Ministry of Agriculture, Plant Protection Directorate, Ethiopia
25.	Mr Stephen Tibeijoka Byantwale	Commissioner, Crop Protection Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Uganda
26.	Mr Claver Ngaboyisonga	Rwanda Agriculture and Animal Resources Development Board, Government of Rwanda
27.	Mr George Tokporo Tadu	Senior Research Scientist Ministry of Agriculture and Food Security, South Sudan
28.	Ms Itangishaka Goreth	Directrice de la Protection des Vegetaux, Burundi
29.	Mr Sergei Mitahiwa	Ministry of Agriculture, Tanzania
30.	Mr Sidonio Mateus	Head of the Plant Health Department of the National Directorate of Agriculture, Angola
31.	Mr Simphiwe Mnguni	Ministry of Agriculture, South Africa
32.	Mr Oumar Barry	Cabo Verde
33.	Ms Antonia A.Sabonete Tombolane	Head of Plant Health Department National Directorate of Agriculture and Forestry, Mozambique
34.	Mr Alick Daka	Deputy Director of Crops Production, Ministry of Agriculture Zambia
35.	Ms Norah Zindoga Mangezi	Principal Research Officer, Department of Research and Specialist Services, Zimbabwe
36.	Ms Onidera Randriamampianina	Chef de Service de la Surveillance et de la. Lutte contre les Ravageurs, Ministère de l'Agriculture et de l'Elevage, Madagascar
37.	Ms Rorisang Mantutle	Ministry of Agriculture, Lesotho
38.	Mr Njabulo Mkhonta	Plant Protection Officer, Ministry of Agriculture, Eswatini
39.	Ms Paulina Shilunga	Government of Botswana
40.	Mr Kontuchi Kokouvi	Chief Agricultural Entomology and Plant Quarantine Section, Phytosanitary Certification Officer, Togo
Food and Agriculture Organization of the UN		
41.	Ms Gherda Barreto	FAO Representative, Angola
42.	Mr Mustapha Masanneh Ceesay	Assistant FAO Representative, Gambia
43.	Mr George Phiri	Assistant FAO Representative, Malawi
44.	Mr Ibrahim Ouedraogo	Assistant FAO Representative, Burkina Faso
45.	Mr Oyetounde Djiwa	Assistant FAO Representative, Programmes, Togo
46.	Mr Suleiman Abubakar	Assistant FAO Representative, Nigeria
47.	Mr Benjamin Adjei	Assistant FAO Representative, Ghana
48.	Mr Banaou Djibo	Assistant FAO Representative, Programmes, Niger
49.	Mr Makhfousse Sarr	Assistant FAO Representative, Senegal

50.	Mr Octavius Quarbo	Assistant FAO Representative, Programmes, Liberia
51.	Mr Souleymane Traore	Agricultural Officer, FAO Burkina Faso
52.	Mr Hamisi Williams	IPM/Entomology Specialist, FAO SFE
53.	Mr Adin Bloukounon-Goubalan	Agricultural Officer, FAO Subregional Office for West Africa
54.	Mr Jean Bahama	Regional Coordinator for Africa, Global Action for FAW Control, FAO RAF
55.	Ms Sarah Brunel	Programme Officer, FAO NSP
56.	Mr Mathew Abang	Plant Production & Protection Officer, FAO Subregional Office for Southern Africa (SFS)
57.	Mr Mouhaman Bioyerima	Programme Assistant, FAO Benin
58.	Mr Mushobozi Baitani	Programme Officer, FAO Tanzania
59.	Mr Modibo Toure	Plant Production and Protection Specialist, FAO Malawi
60.	Mr Stanley Kimereh	Programme Associate, FAO Kenya
61.	Mr Mohamed Fadiga	Sub-regional resilience specialist FAO Subregional office for Western Africa (SFW)
62.	Mr Gnantin Gbohou	Côte d'Ivoire, FAO
63.	Ms Vanessa Correia	Programme Assistant, FAO Guinea-Bissau
64.	Mr Joseph Brima	Country Programme Officer, International Fund for Agricultural Development, Sierra Leone
65.	Mr Mpanzo Domingos	Senior Pest Management expert, FAO Angola
66.	Mr Fidele Kengni	Cameroon, FAO
67.	Mr Mahama Zoungrana	Consultant international en Politiques Agricoles et Systmes Alimentaires (CFIE), FAO
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