



BRIEFING NOTE ON FAO ACTIONS ON FALL ARMYWORM

---Latest updates ---

Spread: FAW has spread in all Sub-Saharan Africa except two countries. In August 2018, the pest has been detected in Yemen and India. The latest map of FAW spread is found on page 7.

FAO Projects: Norway has funded the FAO Global Project for the Sustainable Management of the Fall Armyworm (FAW). In November 2018, the FAO Programme for Action in Africa, North Africa and the Middle East, was launched.

FAO FAW website: FAO has launched a new website on FAW, including maps of the latest situation (www.fao.org/fall-armyworm).

Early Warning System: Nuru, the artificial intelligence machine app detecting FAW damage on maize, is being embedded into the FAMEWS app and will be available soon after field validation.

Farmers Field Schools (FFS): several trainings were held for farmers and extension officers in Eastern and Western Africa in September 2018.

---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. Its modality of introduction along with its biological and ecological adaptation across Africa are still speculative.

FAW was first detected in Central and Western Africa in early 2016, and now it is in almost all of Sub-Saharan Africa, except in Djibouti and Lesotho. At the end of July 2018, FAW was detected in Yemen and in India as the first occurrence in Asia. A map on page 6 shows the spread of the pest to-date.

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

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---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 of the Fall Armyworm in Africa intended as a guide for the development of projects and programmes by the various stakeholders in the areas of their comparative advantages, including FAO.
2. FAO's over coordination role for the Global FAO Programme was confirmed at the Research for Development Conference held recently at the African Union Commission in Addis Ababa. FAO will be working very closely with the newly formed Research for Development Consortium to ensure close coordination and collaboration among "bottom-up" farmer-led innovations and research institutes and organizations. This will be done in the context of the FAW Technical Working Groups that FAO has been facilitating for over a year. FAO is also deepening its engagement in the national level FAW Task Forces, as well as coordinating closely with the AUC and RECs. **FAO FAW new website** has been recently launched: <http://www.fao.org/fall-armyworm>, and the web site has a direct link to the FAW Monitoring and Early Warning System (FAMEWS) platform.



---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 of November 2018, there is an active TCP for the regional level in Africa, in addition to a total of 16 FAW active projects currently operational in 16 African countries. These projects aim to provide awareness raising, sensitization and strengthening of pesticide management capacity at the producer level, strengthening capacity on early identification of FAW, efficient pesticide application and best practices, and the restoring of productive capacity. Government Cooperation Programmes (GCPs) for smallholder farmers in Mozambique and for revitalizing agricultural clusters through FFS in Malawi. Global GCP funded by Norway (1,247,661USD) was launched in November 2018 for the Sustainable Management of the Fall Armyworm (FAW)- FAO Programme for Action in Africa, North Africa and the Middle East. Belgium is supporting the FAW Programme with USD 1 million to improve and implement FAMEWS, its Platform, incorporate Nuru into FAMEWS, and FAWRisk and FAWImpact models and toolkits. FAO Special Relief operations (OSRO) funded project -USA and Ireland- are being implemented in East African countries to support the establishment of a community based FAW monitoring, forecasting, early warning, and management system, also three OSROs are implemented in Guinea- Bissau (AfDB), Cape Verde (AfDB) and South Sudan (Japan).
2. **FAW early warning system development:** FAO IT-Solutions has developed a mobile phone app (FAMEWS) to be used by farmers, community focal persons and extension agents to collect data when scouting fields and checking pheromone traps. FAMEWS will incorporate a tool to diagnose FAW damage and is linked to a web-based global early warning platform. The uptake and usage of the FAMEWS mobile app continues to increase in all countries. There are nearly 4,000 registered users. The app is now available on Google Play Store (<https://play.google.com/store/apps/details?id=org.fao.faw>) in 13 languages.

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Several other developments are underway:

- A new version of FAMEWS is under development to improve the usefulness of the app for the personal benefit of the user such as providing guidance, information and advice.
- The FAMEWS global platform (<http://www.fao.org/fall-armyworm>) has been substantially upgraded to provide more functionality to show maps and analytics of the current situation as well as relationships to farming practices, ecology and natural enemies. Work is continuing on the platform to provide further improvements. All suggestions are welcome.
- Nuru, the artificial intelligence, machine learning app that detects FAW damage on maize, is being embedded into the FAMEWS app. It will be available as soon as field validation has been completed by Penn State University and FAO.
- A new project with University of Barcelona and CYMMIT is exploring the use of drones combined with satellite imagery to help fill in the gaps of FAW monitoring and assess damage.
- FAO country offices are advocating national governments at the highest levels for adoption of the use of FAMEWS for all FAW data collection.



3. **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 FFS Master Trainers and many research institutions contributed. The guide has been launched on 16 February 2018.

During the year 2018 different training activities were conducted as follow;

- **National master trainers refresher training** involving three participants in Benin (February) and 63 in Uganda (April).
- **Regional master trainers refresher training** involving 31 participants in Cameroon (April) and 43 participants in Kenya (April).
- **Extension training** for 10 participants from Eastern Africa in Ethiopia (August), participants from 43 counties in Kenya (April-May), 100 participants in Nigeria (February & April), 500 participants in South Sudan (January- March) and for 40 participants in Rwanda (March).
- **Farmer field school on Maize** for 3750 participants in Nigeria (January 2017- March 2018) and 1200 participants also in Nigeria during May- June.
- **Open day exchange visits** were organized for 81 participants in Gabon (March-April), 287 participants in Guinea (May-June) and 113 participants in Guinea (August- September).
- Facilitating the participation of 33 participants from Eastern Africa in the mass media campaign that was organized in Thailand during September.
- **Research collaboration** involving 50 Researchers working on IPM and maize value chain development in Nigeria (April) and three students working on FAW research paper from Universite de Lome in Togo (2017-2018).
- **Training on the use of the pheromone traps and FAMEWS App** for 50 participants in Nigeria (September).
- **Facilitators refresher training** for 55 participants in Cameroon (June) and 79 participants in Senegal (June).
- **Short community course** involving 100 participants in Togo during May.
- **Study tour** for 162 participants in Togo during June.

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.

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4. **FAW risk assessment and modelling:** FAO and DFID have co-organized a workshop on 2 February, 2018 to assess the risk of household food insecurity due to FAW in Africa. The outcome of the workshop was to develop a model for risk assessment due to FAW.
5. **FAO technical working groups coordinated by FAO:** twelve technical working groups are coordinated by FAO, each led by the appropriate institute/organization; namely, 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.
6. **Technical Guidance Notes, Q&A, regular updates, maps, reports, guides, key messages** on FAW are regularly posted on the FAO FAW website (<http://www.fao.org/fall-armyworm/en/>). They are all being translated into the six official UN languages.
7. **Crowdsourcing knowledge on Fall Armyworm.** FAO is announcing a new effort to share knowledge more rapidly through PlantVillage. PlantVillage (<https://plantvillage.psu.edu/>) is a six-year old, public-good platform at Penn State University that has received over 8 million visitors and has about 100,000 new visitors/month.



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---Specific actions at regional level and sub-regional level---



AFRICA

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 the Central African region. At least 3 experts (NARS, FFS expert, NPPO) represented each country. Countries had 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. 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 is supporting FAW monitoring, coordination, and information sharing through the roll out of FAW dashboards across the East Africa region during the 2018 long rains. These dashboards provided information to decision makers on the prevalence of FAW at subnational level, populations affected, and status of FAW-related response programs. These dashboards will be continued during the upcoming rainy seasons, and will be further rolled out to other affected regions in the coming months.

Major activities were conducted in Eastern Africa within the framework of the USAID funded sub regional project on Fall Armyworm: "Establishing an Emergency Community-based Fall Armyworm Monitoring, Forecasting, Early Warning and Management System in Eastern Africa":

- Capacity building for Fall armyworm management was conducted in the 6 project countries Burundi, Ethiopia, Kenya, Rwanda, Tanzania and Uganda. A total of 87 professionals were trained during national training of trainers. At district level, a total of 1207 Community Focal Persons, Village Agricultural Officers and District Plant Protection Officers were trained.
- Monitoring and early warning of Fall Armyworm using FAMEWS app, a total of 300 mobile phones and 600 pheromone traps were distributed across the 300 project villages (50 villages per country) and season long monitoring using field scouting and pheromone traps data was conducted at village level on weekly basis and data transmitted by mobile phones using FAMEWS app.
- Translation of FAMEWS (Fall Armyworm Monitoring and Early Warning System) from English into 4 local languages was done and used by the communities at village level. The four local languages are: Amharic, Oromo, Kinyarwanda and Swahili.
- The Eastern Africa Fall Armyworm Strategy and Implementation Plan (EAFAMSIP) has been published.

Southern Africa

The workshop on "Improving monitoring of FAW risk, prevalence and impact at country level; experiences, options and ways forward" took place in Zambia at Twangale Park, in Lilayi from 18 to 21 September 2018. A total of 58 participants attended the workshop from Ministries of Agriculture of all SADC member states; FAO (Country, Sub-regional, Resilience Hub, Regional and HQ level) as well as from SADC, ECOWAS and CILSS. Accurate monitoring and measurement of prevalence and impact are fundamental for the successful implementation of the Partnership Programme for Management of the Fall Armyworm in Africa, a multi-

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stakeholder initiative which is coordinated by FAO. Specifically, the workshop focused on four tools: FAMEWS, FAW Risk-Map, FAW Impact and FAW Dashboard. FAOSFS supported national FAW Focal Points from Southern Africa and the Conservation Agriculture National Task Force members who constitute the CARWG (CA regional working group in Southern Africa) to the Second Africa CA Congress that was held in South Africa in October. FAO hosted a CA FAW side event at the Congress with the objective of showcasing the mitigation effects of CA on FAW damage. The side event was meant to advocate for increased promotion of scaling up the adoption of CA to leverage the opportunity for contribution to the sustainable management of FAW particularly for smallholder farmers in Africa.



Western Africa

FAO conducted a sub-regional FAW Training of Trainers in Abuja, Nigeria, 5-10 September 2017, to increase the skills and knowledge of national plant protection and extension experts and FFS practitioners on FAW in Western Africa. FAW is damaging vegetable gardens in Liberia. Mali has recently requested emergency support to contain FAW expansion in the country.

Near East

Based on the fast spread of FAW in Yemen, it was agreed on the need for a TCP on FAW. Accordingly, FAO is currently preparing for a TCP “Strengthening capacities and increase preparedness level for FAW” to be launched in December 2018 and ended by November 2020. The project is proposed to involve 12 countries in NENA region.

ASIA

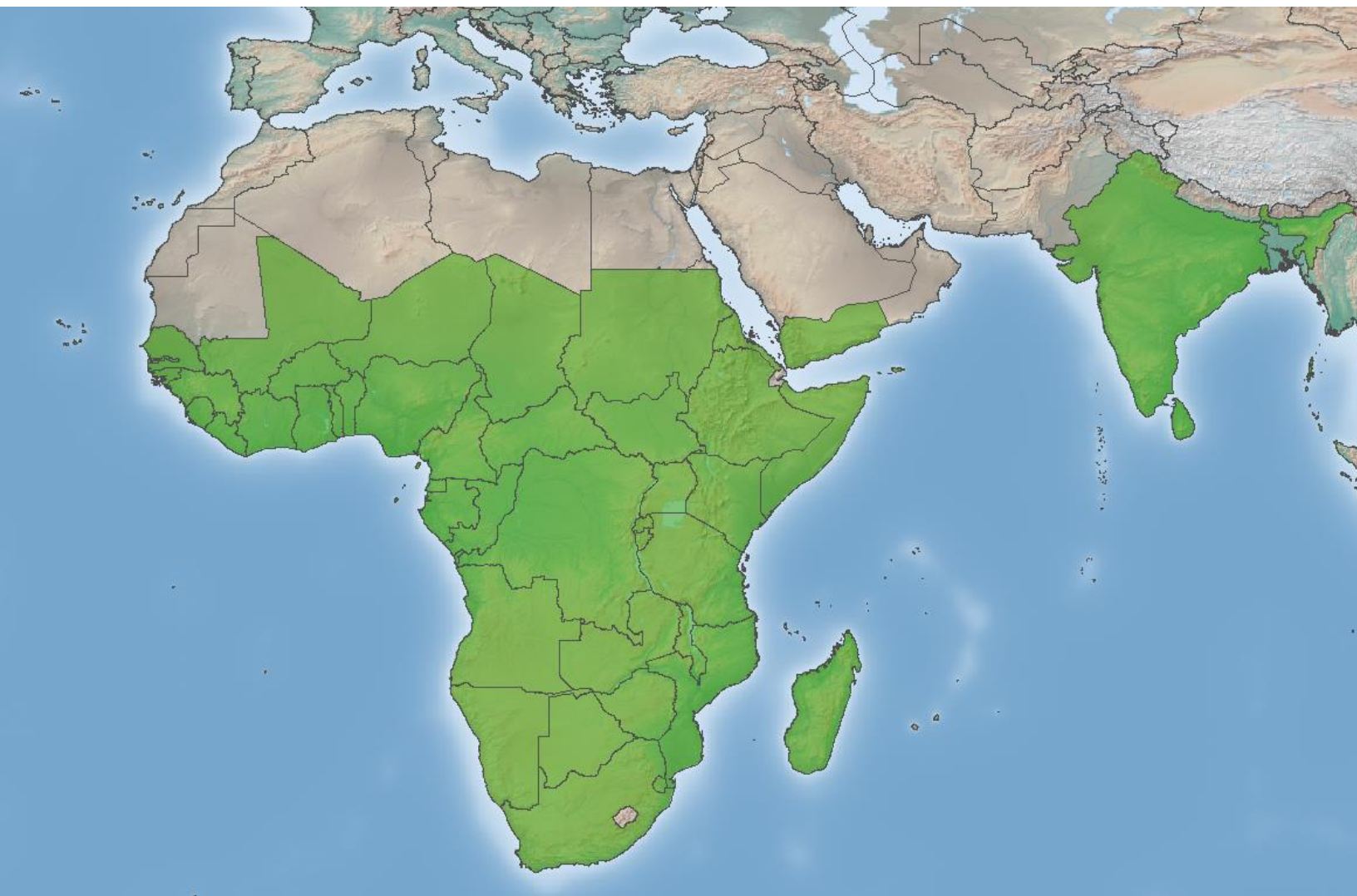
Upon the detection of FAW in India, the FAO RAP have taken instant actions including: sending alert to countries in August and updates of FAW in September and October. The office has also briefed 18 countries in a special session during a regional workshop APPPC/IPPC in September, and provided them with FAW reference materials including video, IPM and FFS guides as well as the mobile app for monitoring FAW. RAP conducts regular monitoring with NPPOs on the detection/outbreak status of FAW in the high risky countries. A special session of discussion on FAW was held with all FAORs in the region during the regional management meeting held from 5 to 7 November 2018.

FAO country office in India is assisting in the management of FAW through briefing and demonstrating FAO tools to the DG ICAR, Ministry of Agriculture and Farmers Welfare (MOAFW), Directors of key research institutes such as NBAIR and IIMR, and States in August 2018. The office has issued regular updates on FAW spread as it was detected in Madhya Pradesh and Gujarat bordering with Pakistan, and disseminated FAW management materials including video, factsheets, mobile app, IPM & FFS guidelines, FAQs to be taken up by various sources for states, NGOs, donors, etc.

The office has organized a training for the extension staff in Andhra Pradesh, developed materials and video in Telugu language in October/November 2018, and provided support for the participation of MOAFW and ICAR to the FAW Conference held in October in Addis.

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Map of areas affected by Fall Armyworm (as of December 2018)



 Fall Armyworm presence

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