

**Emergency Transboundary Outbreak Pest (ETOP) Situation Bulletin for
April 2020 with a forecast through mid-June**
résumé en français est inclus

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹): The SGR situation remained extremely serious in the central outbreak region (COR) during April as hopper bands and new swarms continued to form in northern and central **Kenya**, southern **Ethiopia** and **Somalia** posing an unprecedented threat to food security and livelihoods of affected people. Control operations were intensified in Ethiopia and Kenya where close to 100,000 ha and more than 14,000 ha were reported treated, respectively and 600 ha were treated in Somalia during April. In Uganda, several immature and maturing swarms appeared in the northeast and controlled during April. Mature swarms were also reported in southeastern South Sudan. In the Arabian Peninsula, control operations continued against hopper bands, and/or adult groups in **Saudi Arabia** (29,868 ha), **Iraq** (815 ha), and **UAE** (1,320 ha), and northern **Oman** (4,147 ha). In eastern outbreak region (**EOR**), hopper groups and bands were controlled in more than 98,650 ha in southern **Iran** and 50,290 ha in **Pakistan** in April. Limited control was carried out in India (1,970 ha) and Afghanistan (20 ha) during this month. The situation in the western outbreak region (WOR) remained calm during April <http://www.fao.org/ag/locusts/en/info/info/index.html>

Forecast: Efforts must continue to prevent the current upsurge from reaching a plague stage. In COR, swarms will continue maturing and breed, and hoppers, bands, and adult groups will continue to increase dramatically in the Horn of Africa – Ethiopia, Kenya, and Somalia from May through July and pose a serious threat to pasture and crops. Swarms that form in spring breeding areas in the coming weeks will likely move to summer breeding areas in **Yemen**, **Sudan** and some could continue to Sahel West Africa in June if they arrive in **Sudan** before the onset of the summer rains. In EOR, more hopper bands and swarms will likely form in spring breeding areas in southeast **Iran** and southwest Pakistan and supplement adult groups and swarms from Baluchistan, the Indus Valley, and Punjab in **Pakistan** and start to migrate to summer breeding areas along of the **Indo-Pakistan** borders during the coming months. In WOR, limited locust activities may begin appearing in northern Mali, northern Niger and southern Algeria. Host governments have been leading intensive surveillance and control operations, but the needs are outpacing efforts. If swarms remain unabated in the coming several weeks and months, we could see dramatic population increase, much worse than the situation witnessed since last year. Timely control interventions need to be supported with adequate resources to ensure early

¹ Definitions of all acronyms can be found at the end of the report.

detection and rapid control. Resources are also needed to protect the livelihoods of farmers and pastoralists and ensure they meet their immediate food needs and inputs to restore their livelihoods. The Food and Agriculture Organization of the United Nations (FAO) expects to revise its current Horn of Africa appeal to increase from USD 153.2 million to support other affected countries, including Pakistan, Iran and several frontline countries in the Sahel West Africa and elsewhere. So far donors and international partners have been generous and quick in their responses to the UN/FAO appeal <https://locust-hub-hqfao.hub.arcgis.com/> and this has been instrumental in strengthening coordination, preparedness and enable partners and host country governments to intensify surveillance, monitoring, control operations, and help safeguard livelihoods of vulnerable communities. It is critical that all frontline and invasion countries remain vigilant in surveillance, monitoring and timely control interventions. Development and humanitarian partners are encouraged to maintain their generosity and continue with their support to reduce the impact of the locust invasions on food security and livelihoods of vulnerable peoples and communities amidst rapid responses to the ongoing COVID-19 pandemic.

Red (Nomadic) Locust (*Nomadacris septemfasciata*) (**NSE**): NSE is expected to have fledged and started to form swarms in primary outbreak areas in Tanzania, Mozambique and Malawi.

African Migratory Locust: *Locusta migratoria migratorioides* (**LMM**): LMM outbreaks were reported in the Southern Province of Zambia during April.

Tree Locusts, *Anacridium spp.* (**ASP**): ASP report was not received during April.

Central American Locust, *Schistocerca piceiferons* (**CAL**): No update was received at the time this bulletin was compiled.

South American Locust, *Schistocerca cancellata* (**SCA**): SCA update was not received during the past months.

Italian (CIT), Moroccan (DMA), and Asian Migratory Locusts (LMI): No major activities were reported in CAC region during this month.

Fall Armyworm (*Spodoptera frugiperda*) (**FAW**): FAW was reported in Tanzania, Malawi, Mozambique, Zambia and Zimbabwe during April. It is likely that the pest was present elsewhere in maize and other cereal growing areas during this month.

African Armyworm (AAW) (*Spodoptera exempta*): AAW outbreaks were not reported during this month.

Quelea spp. (QSP): QSP outbreaks were reported in sorghum, rice and millet fields in several districts in Tanzania during April.

Active surveillance, monitoring and timely preventive and curative interventions as well as sharing ETOP information remain critical to abate the threats ETOPs pose to food security and livelihoods of vulnerable communities.

USAID/OFDA/PSPM regularly monitors ETOPs in close collaboration with its network of national PPDs/DPVs, regional and international pest monitoring and/or control entities, including FAO, CLCPRO, CRC, DLCO-EA, and IRLCO-CSA, and research centers, academia, private sector, NGOs and others and issues concise, analytical bulletins to stakeholders. **End summary**

RÉSUMÉ

La situation du Criquet pèlerin (*Schistoseca gregaria* - SGR): La situation SGR est restée extrêmement grave dans la région centrale de l'épidémie (COR) en avril, car des bandes larvaires et de nouveaux essaims ont continué de se former dans le nord et le centre du Kenya, le sud de l'Éthiopie et la Somalie, ce qui représente une menace sans précédent pour la sécurité alimentaire et les moyens de subsistance des personnes touchées. Les opérations de lutte se sont intensifiées en Éthiopie et au Kenya où près de 100 000 ha et plus de 14 000 ha ont été signalés traités respectivement et 600 ha ont été traités en Somalie en avril. En Ouganda, plusieurs essaims immatures et en cours de maturation sont apparus dans le nord-est et contrôlés en avril. Des essaims matures ont également été signalés dans le sud-est du Soudan du Sud. Dans la péninsule arabique, les opérations de lutte contre les bandes larvaires et / ou les groupes d'adultes se sont poursuivies en Arabie saoudite (29 868 ha), en Iraq (815 ha), aux Émirats arabes unis (1 320 ha) et dans le nord d'Oman (4 147 ha). Dans la région orientale de l'épidémie (EOR), des groupes et bandes larvaires ont été contrôlés dans plus de 98 650 ha dans le sud de l'Iran et 50 290 ha au Pakistan en avril. Un contrôle limité a été effectué en Inde (1 970 ha) et en Afghanistan (20 ha) au cours de ce mois. La situation dans la région ouest de l'épidémie (WOR) est restée calme en avril. <http://www.fao.org/ag/locusts/en/info/info/index.html>

Prévisions: Les efforts doivent se poursuivre pour empêcher que la recrudescence actuelle n'atteigne un stade de peste. En COR, les essaims continueront de mûrir et de se reproduire, et les larves, les bandes et les groupes d'adultes continueront d'augmenter considérablement dans la Corne de l'Afrique - Éthiopie, Kenya et Somalie de mai à juillet et constituent une menace sérieuse

pour les pâturages et les cultures. Les essaims qui se forment dans les zones de reproduction printanière dans les prochaines semaines se déplaceront probablement vers les zones de reproduction estivale du Yémen et du Soudan et certains pourraient continuer vers le Sahel en Afrique de l'Ouest en juin s'ils arrivent au Soudan avant le début des pluies d'été. Dans l'EOR, davantage de bandes larvaires et d'essaims se formeront probablement dans les zones de reproduction printanière du sud-est de l'Iran et du sud-ouest du Pakistan et compléteront les groupes d'adultes et les essaims du Baloutchistan, de la vallée de l'Indus et du Punjab au Pakistan et commenceront à migrer vers les zones de reproduction estivale le long de l'Indo. -Les frontières du Pakistan au cours des prochains mois. Dans WOR, des activités acridiennes limitées peuvent commencer à apparaître dans le nord du Mali, le nord du Niger et le sud de l'Algérie. Les gouvernements hôtes mènent des opérations intensives de surveillance et de contrôle, mais les besoins dépassent les efforts. Si les essaims restent inchangés dans les semaines et les mois à venir, nous pourrions voir une augmentation spectaculaire de la population, bien pire que la situation observée depuis l'année dernière. Les interventions de contrôle en temps opportun doivent être soutenues par des ressources adéquates pour assurer une détection précoce et un contrôle rapide. Des ressources sont également nécessaires pour protéger les moyens de subsistance des agriculteurs et des éleveurs et s'assurer qu'ils répondent à leurs besoins alimentaires et intrants immédiats pour restaurer leurs moyens de subsistance. L'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO) prévoit de réviser son appel actuel dans la Corne de l'Afrique pour passer de 153,2 millions de dollars à l'appui d'autres pays touchés, dont le Pakistan, l'Iran et plusieurs pays de première ligne au Sahel, en Afrique de l'Ouest et ailleurs. Jusqu'à présent, les donateurs et les partenaires internationaux ont été généreux et rapides dans leurs réponses à l'appel ONU / FAO <https://locust-hub-hqfao.hub.arcgis.com/> et cela a contribué à renforcer la coordination, la préparation et à permettre aux partenaires et les gouvernements des pays hôtes pour intensifier la surveillance, le suivi, les opérations de contrôle et aider à sauvegarder les moyens de subsistance des communautés vulnérables. Il est essentiel que tous les pays de première ligne et d'invasion restent vigilants dans les interventions de surveillance, de suivi et de contrôle en temps opportun. Les partenaires au développement et les partenaires humanitaires sont encouragés à maintenir leur générosité et à continuer à apporter leur soutien pour réduire l'impact des invasions acridiennes sur la sécurité alimentaire et les moyens de subsistance des populations et des communautés vulnérables au milieu des réponses rapides à la pandémie de COVID-19 en cours.

Criquet nomade (*Nomadacris septemfasciata*) (NSE): NSE devrait avoir fui et commencé à former des essaims dans les principales zones de flambée en Tanzanie, au Mozambique et au Malawi.

Criquet migrateur africain: *Locusta migratoria migratorioides (LMM)*: des foyers de LMM ont été signalés dans la province méridionale de la Zambie en avril.

Le criquet arborial, *Anacridium spp*: Aucun rapport ASP n'a été reçu en avril.

Criquet Amérique centrale, *Schistocerca piceifrons piceiferons (CAL)*: Aucune mise à jour n'a été reçue à la date de rédaction du présent bulletin.

Criquet d'Amérique du Sud, *Schistocerca cancellata (SCA)*: SCA ont été signalés en Argentine, en Uruguay et dans les régions voisines d'Amérique du Sud au cours des derniers mois.

Criquets italiens (CIT), marocains (DMA), Asian Migratory Locust (LMI): Aucune activité majeure n'a été signalée dans la région CAC au cours de ce mois.

Chenille Légionnaire d'automne (*Spodoptera frugiperda*) (FAW): La FAW a été signalée en Tanzanie et au Malawi, au Mozambique, en Zambie et au Zimbabwe en avril. Aucun rapport n'a été reçu dans d'autres pays, mais il est probable que l'organisme nuisible était présent dans le maïs et d'autres zones de culture de céréales au cours de ce mois.

Chenille Légionnaire africaine (AAW), *Spodoptera exempta*: aucune éclosion d'AAW n'a été signalée au cours de ce mois.

***Quelea spp. oiseaux (QSP)*:** Des flambées de QSP ont été signalées dans les champs de sorgho, de riz et de mil de plusieurs districts de Tanzanie en avril. Des foyers d'oiseaux QSP

La surveillance active, le suivi et les interventions préventives et curatives opportunes ainsi que le partage des informations ETOP restent essentiels pour réduire les menaces que les ETOP font peser sur la sécurité alimentaire et les moyens de subsistance des communautés vulnérables.

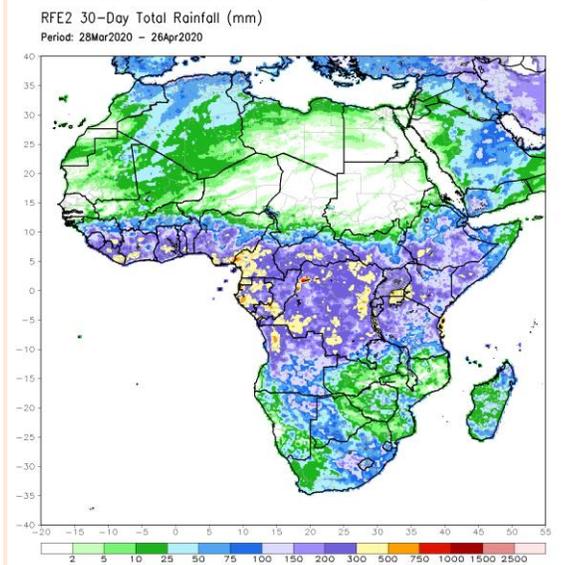
USAID / OFDA / PSPM surveille régulièrement les ETOP en étroite collaboration avec son réseau de PPD / DPV nationaux, d'entités régionales et internationales de surveillance et / ou de lutte antiparasitaire, y compris la FAO, la CLCPRO, le CRC, le DLCO-EA et l'IRLCO-CSA, et des centres de recherche, universités, secteur privé, ONG et autres et publie des bulletins analytiques concis à l'intention des parties prenantes. Fin de résumé

Note: All ETOP Bulletins, including previous issues can be accessed and downloaded on USAID Pest and Pesticide Monitoring website: [USAID Pest and Pesticide Monitoring](#)

Additional resources on ETOPs can be found on the last pages of this Bulletin.

Weather and Ecological Conditions

Rainfall was above-average over many places in much of **COR** in DRC, parts of South Sudan, Uganda, many parts of Ethiopia, much of Kenya, Somalia, Rwanda, Burundi, Tanzania, Angola, northeastern Namibia, Botswana, northern Zambia, central South Africa, Lesotho, and Eswatini most of April.



NOAA April 2020

These will create favorable conditions for locusts to breed and significantly increase in these areas in the coming months (DLIO/Djibouti, FAO-DLIS, NOAA, PPD/Ethiopia, PPD/Sudan).

In **EOR**, good rains were reported in spring breeding areas in southwest and southwest and southeastern interior of Iran during early April. Good rains were

also reported in north Sistan-Baluchistan and adjacent areas in southwestern Afghanistan. Breeding conditions continued becoming unfavorable in southwestern Pakistan (FAO-DLIS).

In **WOR**, ecological conditions remained generally dry during April except in a few places in the Draa Valley south of the Atlas Mountains in Morocco and in irrigated areas in Algeria (ANLA/Chad, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, CNLAP/Mali, FAO-DLIS).

Ecological conditions remained favorable in some of the NSE outbreak areas in Wembere and Rukwa Valley plains and Malagarasi Basin in Tanzania; Buzi-Gorongosa, Caia and Dimba in Mozambique and Kafue Flats in Zambia during April. Rainfall was low in other NSE outbreak areas (IRLCO-CSA)

CAC Region: Cool and dry weather is expected to have prevailed in CAC during this month.

Note: Changes in the weather pattern such as increased or decreased temperatures and precipitation can contribute to an ecological shift in ETOP habitats and could increase or decrease the risk of pest outbreaks, resurgence and/or emergence of new pests.

The ongoing SGR extended outbreaks and upsurges are also partially attributed to the change in the weather pattern – extended and above normal rainfall partly associated with 4-5 cycles that made landfall in the COR region, extending from Oman, Yemen, Southern Arabian Sea and the Horn of Africa between May 2018 to December 2019.

In Uzbekistan, **Moroccan locust** (DMA) which is normally a low to medium

altitude pest has shown a considerable vertical habitat expansion by up to 1,000 feet or 300 meters from its regular ambient altitude due to warmer higher elevations.

The **Asian migratory locust**, an insect that normally has one generation per year, has begun breeding twice a year. This phenomenon is largely attributed to change in weather pattern resulting in ecological shift and can become serious concerns to farmers, rangeland managers, crop protection experts, development and humanitarian partners, etc. Regular monitoring, documenting and reporting anomalies in pest behavior and on habitat shifts are crucial to help avoid/minimize potential damage to crops, pasture and reduce negative impacts on food security and livelihoods of vulnerable populations and communities.

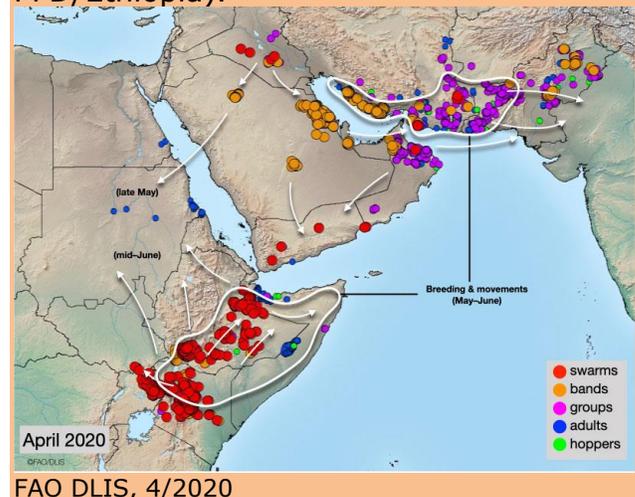
http://www.cpc.ncep.noaa.gov/products/international/casia/casia_hazard.pdf

End note.

Detailed Accounts of ETOP Situation and a Forecast for the Next Six Weeks are provided below

SGR – COR: The SGR situation remained extremely serious in the central outbreak region (COR) during April as hopper bands and new swarms continued to form in northern and central **Kenya**, southern **Ethiopia** and **Somalia** posing an unprecedented threat to food security and livelihoods of affected people. Control operations were intensified in Ethiopia and Kenya where close to 100,000 ha and more than 14,000 ha were reported* treated, respectively and 600 ha were treated in Somalia during April (during March, 51,630 ha were treated in Ethiopia and 38,378 ha were controlled in Kenya). Swarms appear to be increasing in size in some central and northern

areas in **Kenya** with some moving westwards. In Ethiopia, a large swarm was reported in the southern part of the country (SNNPR) on April 8th. In **Uganda**, several swarms from northwestern **Kenya** appeared in Amudat district in the northeast part of the country in the past few days. Control operations treated close to 607 ha during March (a late received report indicated that 3,467 ha were treated in February) (FAO-DLIS, PPD/Ethiopia).

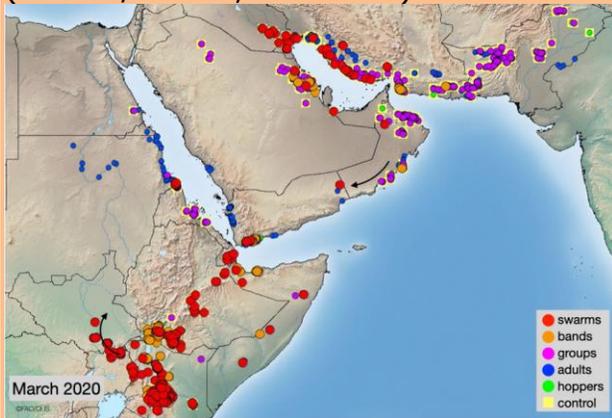


In **South Sudan (SSD)**, several mature and mature swarms from northeastern Uganda arrived in the southeast near Loboni Payam and continued north and reached Magwe in Eastern Equatoria from the first dekad of April. FAO in collaboration with DLCO-EA and PPD/South Sudan trained PPD staff others on locust biology and control. No activities were reported in **Tanzania** or **DRC** during this month and further developments are not expected in these countries during the forecast period. (DLCO-EA, FAO-DLIS, FAO-SSD).

In **Sudan**, survey continued and detected scattered immature adults along the southern Red Sea coasts and the Tokar Delta and mature adults were also detected in the Nile Valley (FAO-DLIS,

PPD/Sudan). In **Egypt**, isolated immature solitary adults were detected in the southern Red sea coasts. In **Eritrea**, no surveys were carried out and no locusts were reported during April. (FAO-DLIS). In **Djibouti**, a maturing swarm was detecting flying in the southwest near As Eylal on April 5th (FAO-DLIS, PPD/Djibouti, PPD/Sudan).

In the Arabian Peninsula, control operations continued against hopper bands, and/or adult groups in **Saudi Arabia** (29,868 ha), **Iraq** (815 ha), and **UAE** (1,320 ha), and northern **Oman** (4,147 ha) (FAO-DLIS, LCC/Oman, PPD/Djibouti, PPD/Sudan). In **Yemen**, on April 1st, an immature swarm from south Oman was reported arrived near Shehn in Al Mahara Province and later moved to the southwest towards AlGaydah. Several swarms were reported along both sides of the **Oman/ Yemen** border in the interior and on the coast during early April (DLMCC/Yemen, FAO-DLIS).



Forecast: Despite massive aerial and ground control operations, the presence of ample parental populations and the widespread and heavy rains will allow swarms to mature and lay eggs in COR in the coming months and increase locust numbers significantly. Egg laying, hatching and hopper, group and swarm formations will continue in southern

Ethiopia, Somalia, and northern and central Kenya. Several newly formed swarms in Kenya will settle, mature and lay eggs, while some may move to Uganda, South Sudan and Ethiopia. Hatching from the new swarms will form hopper bands and develop into new swarms by late June and July to coincide with the beginning of the harvest season. (DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Djibouti, PPD/Ethiopia, PPD/Sudan).

Resources availed by host countries, and through generous contributions from the donor communities, including USAID, the UN, bilateral and multilateral organizations, etc., are supporting surveillance, monitoring and control operations as well as availing the necessary materials, supplies, tools and equipment, e.g., spray and surveillance aircraft, transportation facilities, pesticides, PPE, surveillance tools, as well as supporting training, ensuring human and environmental safety and relief and rehabilitation. As of April 27, the UN/FAO appeal for USD 153.2 million has received USD 141.4 million.

SGR - EOR: In **EOR**, hopper groups and bands are present in southern **Iran** and **Pakistan** where control operations treated more than 98,650 ha and 50,290 ha, respectively in April. Limited control was carried out in India (1,970 ha) and Afghanistan (20 ha) during this month (FAO-DLIS).

Forecast: In **Iran**, more swarm and band formations are likely in the southern coastal areas and in adjacent areas in **Pakistan**. Swarms will begin arriving in

summer breeding areas along the Indo-Pakistan borders (FAO-DLIS).

SGR – WOR: Isolated locusts were reported in a few places where ecological conditions were limited in the Draa Valley in the southern Atlas region in Morocco and near irrigated areas in Algeria and some locations in northern Mali (ANLA/Chad, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, CNLAP/Mali, FAO-DLIS).

Forecast: Limited breeding is possible in Algeria and Morocco and the rest of the region will generally remain calm except for swarms likely arriving from the COR during the forecast period (ANLA/Chad, CNLAP/Mali, CNLA/Mauritania, CNLAA/Morocco, FAO-DLIS, INPV/Algeria).

Active surveillance, monitoring, preparedness and timely preventive and curative interventions are critical to avert any significant locust developments and the potential threat they pose to food security and livelihoods of vulnerable communities (FAO-DLIS, OFDA/PSPM).

Red (Nomadic) Locust (NSE): Hoppers that may have developed during previous months are expected to have fledged and formed immature adults during April (IRLCO-CSA).

Forecast: As vegetations begins drying and grass burning commencing, adult groups and swarmlets will begin concentrating. If left uncontrolled, the locusts will begin migrating to neighboring cropping areas. It is critical that national crop protection entities and IRLCO-CSA launch timely surveillance and control operations to avoid any major crop damage (IRLCO-CSA, OFDA/PSPM).

African Migratory Locust, *Locusta migratoria migratorioides* (LMM) (Linnaeus) (LMM): LMM outbreaks were reported in Kasanga, Nakalozya, Simalaha and Nakatindi zones of Southern Province in Zambia during April. The outbreaks were composed of different instar hoppers, fledglings and low-density swarms (IRLCO-CSA).

Tree Locusts, *Anacridium* spp. (ASP): No infestations were reported during this month.

Central American Locust - *Schistocerca piceifrons piceifrons* (CAL): No update was received at the time this Bulletin was compiled.

South American Locust, *Schistocerca cancellata* (SAL): SCA outbreaks were reported in Argentina, Uruguay and neighboring areas South America during the past months.

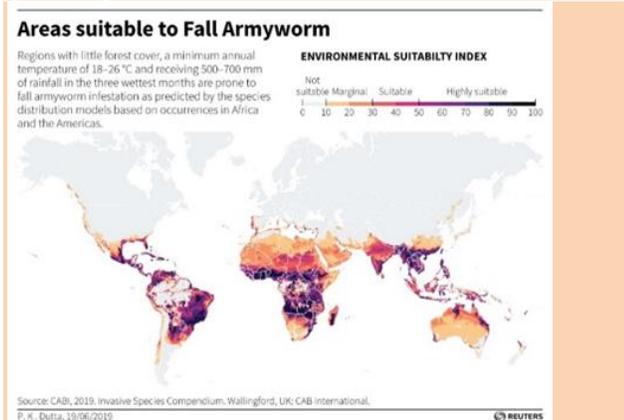
***Tropidacris collaris* (Tucura quebrachera - TCO** - grasshopper-): No update was received at the time this Bulletin was compiled.

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): No updates were received in CAC regions and activities are expected to start in the southern zone of the CAC (OFDA/PSPM).

Fall armyworm (FAW) was reported affecting late planted maize in Malawi, Mozambique, Zambia and Zimbabwe during April. The pest was also reported affecting early planted maize in Kenya. Control operations are carried out by the affected farmers with technical and material support from respective MinAgries (IRLCO-CSA). It is likely that

FAW has been affecting crops in other newly invaded areas.

Forecast: FAW will likely continue affecting rain-fed and irrigated maize and other cereal crops across sub-Saharan Africa, Asia, the Pacific Regions and elsewhere during the forecast period. Active monitoring, surveillance, reporting and preventive interventions remain critical to abate significant crop damage (OFDA).



Key Activity update: The USAID/OFDA sponsored Community-Based FAW Monitoring, Surveillance and Management project (CBFAMFEW) was implemented in six countries in eastern Africa from 2017 to August 2019. The project trained close to 1,400 senior PPD staff, district agricultural experts, extension agents, lead farmers and village leaders. More than 10,000 farmers and villagers were sensitized on FAW-360 in participating countries. A network of forecasters and scouts were established across 300 project villages in the six countries. Strong relationships and commitments have been established among experts, implementing partners and communities in participating countries to guarantee sustainability of project gains.

Scaling up of similar projects will ensure large number of farming communities in

several countries across different regions to benefit and is worth considering.

Note: Several species of FAW natural enemies have been identified in Ethiopia, Kenya, Tanzania, Madagascar, India, etc. and are being further studied to determine their efficacy, environmental impacts and safety. Some are being tested along-side other agro-ecological tools, e.g., push-pull technology, to develop effective, affordable, accessible, adaptable and sustainable means of managing the pest at different scales. It must be noted that highly hazardous pesticides cannot and must not be considered or used in FAW control. Safer, affordable, and adaptable IPM-based pest management remains crucial in abating FAW infestations to minimize crop damage. **End note.**

African Armyworm (AAW): AAW outbreaks were not reported during this month (IRLCO-CSA).

Forecast: AAW activities will likely remain calm in the primary outbreak areas during the forecast period (IRLCO-CSA, OFDA/PSPM).

Note: OFDA developed printable and web-based interactive maps for AAW: <http://usaid.maps.arcgis.com/apps/Viewer/index.html?appid=8ff7a2eefbee4783bfb36c3e784e29cb>

OFDA/PSPM is considering a similar map for the CBFAMFEW countries.

Southern Armyworm (*Spodoptera eridania*) (SAW/SER). SAW was not reported during this month.

Strong surveillance, monitoring and quarantine enforcement remain critical to prevent invasive pest species.

Quelea sp. (QSP): QSP bird outbreaks were reported in Shinyanga (Shinyanga Rural, Kishapu and Shinyanga Municipal), Tabora (Nzega, Uyui and Igunga), Mwanza (Sengerema), Geita (Geita and Chato), Singida (Itigi), Dodoma (Bahi), Iringa (Iringa Rural) and Mbeya (Mbarali) Regions in **Tanzania** where they were detected attacking millet, rice and sorghum crops. Aerial control operations were launched by the DLCO-EA in collaboration with the Tanzania Plant Health Services of the Ministry of Agriculture (DLCO-EA, IRLCO-CSA).

Forecast: QSP outbreaks are expected to continue being a problem to small grain cereal growers in Shinyanga, Tabora, Mwanza, Geita, Singida, Dodoma, Morogoro, Kilimanjaro and Mbeya Regions of Tanzania and likely in Kisumu, Busia, Siaya, Kirinyaga and, Narok Counties of Kenya (IRLCO-CSA).

Facts: QSP birds can travel ~100 km/day in search of food. An adult QSP can consume 3-5 grams of small grain and destroy the same amount each day. A medium density QSP colony can contain up to a million or more birds and is capable of consuming and destroying 6,000 to 10,000 kg of seeds/day, enough to feed 12,000-20,000 people/day (OFDA/AELGA).

Rodents: No update was received during this month, but rodent pests are constant pre- and post-harvest threats to crops, produce and infrastructure. Vigilance and rapid responses remain critical to abate any major damage.

FACTS: On average, an adult rat can consume 3-5 gm of food (grain, etc.) per day; a population of 200 rats/ha (an extremely low density/unit area) can consume a quantity enough to feed an adult sheep/day, not to mention the

amount of food the rats can damage, destroy, and contaminate making it unfit for human consumption, and the zoonotic disease this pest carry/transmit.

All ETOP front-line countries must maintain regular monitoring and surveillance and launch control interventions as needed. Regular crop scouting is critical to avoid damage/losses. Invasion countries should remain alert. Regional and national ETOP entities - DLCO-EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, National DPVs and PPDs, ELOs, etc., are encouraged to continue sharing ETOP information with stakeholders as often as possible. Lead farmers, field scouts, community forecasters and others must remain vigilant and report ETOP detections to relevant authorities as quickly as possible.

OFDA's Contributions to ETOP Abatement Interventions

USAID/OFDA/PSPM is sponsoring an operational research through Arizona State University to develop a tool to manage the Senegalese grasshopper (OSE).

OSE is a notorious pest of cereal crops and pasture causing serious damage to small-scale farmers in its wide geographic coverage which extends from the Canneries, Cape Verde to nearly all sub-Saharan Africa regions to India and neighboring countries. OSE occurs more frequently than several other grasshopper/locust species and is a constant threat to small-scale farmers. USAID/OFDA/PSPM is in communication with interested parties to explore means and ways to expand innovative technologies to countries affected by ETOP to help minimize their impacts on food security and livelihoods of vulnerable people and communities.

The online Pesticide Stock Management System (PSMS) that was developed by FAO with financial assistance from donors, including USAID/OFDA, that continued benefiting participating countries across the globe was halted due to lack of resources to maintain the system. FAO has agreed to search for resources and revive the PSMS system. Thanks to the system, SGR frontline countries and others had been able to effectively manage their strategic pesticide stocks and minimize/avoid accumulation of unusable pesticides and empty pesticide containers.

Note: A sustainable Pesticide Stewardship (SPS) can contribute to strengthening pesticide delivery system (PDS) at the national and regional levels. A strong and viable PDS can effectively reduce pesticide related human health risks, minimize environmental pollution, reduce pest control cost, improve food security and contribute to the national economy. A viable SPS can be effectively established by linking key stakeholders across political boundaries and geographic regions. **End note.**

OFDA/PSPM promotes an IPM approach to minimize risks associated with pesticide poisoning, stockpiling, and environmental contamination. An informed procurement and judiciously executed triangulations of surplus stocks from countries with large inventories of usable products to countries where they are much needed is worth considering

Inventory of Strategic Pesticide Stocks for SGR Control

Inventory of Strategic SGR Pesticide Stocks significantly changed in all regions except in WOR; more than 303,000 liters were utilized during April (Afghanistan =

20 ha; Ethiopia = 99,948; Iran = 98,658, India = 1,970; Iraq = 815; Kenya = 14,637*; Oman = 4,147, Pakistan = 50,289, Saudi Arabia = 29,868; Somalia = 600; UAR = 1,320; Uganda = ?
* = underreported

Table 1. Estimated inventory of strategic SGR Pesticide Stocks in Frontline Countries during this month

Country	Quantity, l/kg*
Algeria	1,186,034~
Chad	34,100
Egypt	10,253 ULV, 45,796
Eritrea	527~
Ethiopia	110,543~
Libya	24,930~
Kenya	~
Madagascar	206,000~ + 100,000 ^D
Mali	3,540
Mauritania	39,803
Morocco	3,412,374 ^D
Niger	75,701~
Oman	9,953~
Saudi Arabia	23,379~
Senegal	156,000~
Somalia	
Sudan	103,482
South Sudan	
Tunisia	62,200 obsolete
Uganda	
Yemen	35,000 ^D ; 180 kg GM~

*Includes different pesticides and formulations - ULV, EC and dust;

~ data may not be current;

^D = Morocco donated 100,000 l of pesticides to Madagascar and 10,000 l to Mauritania in 2015

^D = In 2013 Morocco donated 200,000 l to Madagascar

^D = Saudi donated 10,000 to Yemen and pledged 20,000 l to Eritrea

DM = Morocco donated 30,000 l of pesticides to Mauritania

GM = Green Muscle™ (fungal-based biological pesticide, e.g., NOVACRID)

LIST OF ACRONYMS

AAW	<i>African armyworm (Spodoptera expempta)</i>	CRC	<i>Commission for Controlling Desert Locust in the Central Region</i>
AELGA	<i>Assistance for Emergency Locust Grasshopper Abatement</i>	CTE	<i>Chortoicetes terminifera (Australian plague locust)</i>
AFCS	<i>Armyworm Forecasting and Control Services, Tanzania</i>	DDLC	<i>Department of Desert Locust Control</i>
AfDB	<i>African Development Bank</i>	DLCO-EA	<i>Desert Locust Control Organization for Eastern Africa</i>
AGRA	<i>Agricultural Green Revolution in Africa</i>	DLMCC	<i>Desert Locust Monitoring and Control Center, Yemen</i>
AME	<i>Anacridium melanorhodon (Tree Locust)</i>	DMA	<i>Dociostaurus maroccanus (Moroccan Locust)</i>
APLC	<i>Australian Plague Locust Commission</i>	DPPQS	<i>Department of Plant Protection and Quarantine Services, India</i>
APLC	<i>Australian Plague Locust Commission Bands groups of hoppers marching pretty much in the same direction</i>	DPV	<i>Département Protection des Végétaux (Department of Plant Protection)</i>
ASARECA	<i>Association for Strengthening Agricultural Research in Eastern and Central Africa</i>	ELO	<i>EMPRES Liaison Officers –</i>
CABI	<i>Center for Agriculture and Biosciences International</i>	EMPRES	<i>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases</i>
CAC	<i>Central Asia and the Caucasus</i>	EOR	<i>Eastern SGR Outbreak Region</i>
CBAMFEW	<i>Community-based armyworm monitoring, forecasting and early warning</i>	ETOP	<i>Emergency Transboundary Outbreak Pest</i>
CERF	<i>Central Emergency Response Fund</i>	Fledgling	<i>immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed</i>
CIT	<i>Calliptamus italicus (Italian Locust)</i>	GM	<i>GreenMuscle® (a fungal-based biopesticide)</i>
CLCPRO	<i>Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)</i>	ha	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>
CNLA(A)	<i>Centre National de Lutte Antiacridienne (National Locust Control Center)</i>	ICAPC	<i>IGAD’s Climate Prediction and Application Center</i>
COR	<i>Central SGR Outbreak Region</i>	IGAD	<i>Intergovernmental Authority on Development (Horn of Africa)</i>
CPD	<i>Crop Protection Division</i>	IRIN	<i>Integrated Regional Information Networks</i>
		IRLCO-CSA	<i>International Red Locust Control Organization for Central and Southern Africa</i>
		ITCZ	<i>Inter-Tropical Convergence Zone</i>
		ITF	<i>Inter-Tropical Convergence Front = ITCZ)</i>

FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service	SCA	<i>Schistocerca cancellata</i> (South American Locust)
Hoppers	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)	SFR	<i>Spodoptera frugiperda</i> (SFR) (Fall armyworm (FAW))
JTWC	Joint Typhoon Warning Center	SGR	<i>Schistoseca gregaria</i> (the Desert Locust)
Kg	Kilogram (~2.2 pound)	SPI	<i>Schistocerca piceifrons piceiferons</i> (Central American Locust)
L	Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)	SSD	Republic of South Sudan
LCC	Locust Control Center, Oman	SPB	Southern Pine Beetle (<i>Dendroctonus frontalis</i>) – true weevils
LMC	<i>Locusta migratoriacapito</i> (Malagasy locust)	SWAC	South West Asia DL Commission
LMM	<i>Locusta migratoria migratorioides</i> (African Migratory Locust)	PBB	Pine Bark Beetle
LPA	<i>Locustana pardalina</i>	PSPM	Preparedness, Strategic Planning and Mitigation (formerly known as Technical Assistance Group - TAG)
MoAFSC	Ministry of Agriculture, Food Security and Cooperatives	Triangulation	The process whereby pesticides are donated by a country, with large inventories, but often no immediate need, to a country with immediate need with the help of a third party in the negotiation and shipments, etc. Usually FAO plays the third-party role in the case of locust and other emergency pests.
MoAI	Ministry of Agriculture and Irrigation	UF	University of Florida
MoARD	Ministry of Agriculture and Rural Development	USAID	the United States Agency for International Development
NALC	National Agency for Locust Control	UN	the United Nations
NCDLC	National Center for the Desert Locust Control, Libya	WOR	Western SGR Outbreak Region
NOAA (US)	National Oceanic and Aeronautic Administration	ZEL	<i>Zonocerus elegans</i> , the elegant grasshopper
NPS	National Park Services	ZVA	<i>Zonocerus variegatus</i> , the variegated grasshopper, is emerging as a relatively new dry season pest, largely due to the destruction of its natural habitat through deforestation, land clearing, etc. for agricultural and other development efforts and due to climate anomalies
NSD	Republic of North Sudan		
NSE	<i>Nomadacris septemfasciata</i> (Red Locust)		
OFDA	Office of U.S. Foreign Disaster Assistance		
PBB	Pine Bark Beetle (<i>Dendroctonus sp.</i> – true weevils)		
PHD	Plant Health Directorate		
PHS	Plant Health Services, MoA Tanzania		
PPD	Plant Protection Department		
PPM	Pest and Pesticide Management		
PPSD	Plant Protection Services Division/Department		
PRRSN	Pesticide Risk Reduction through Stewardship Network		
QSP	<i>Quelea species</i> (Red Billed Quelea bird)		
SARCOF	Southern Africa Region Climate Outlook Forum		

Point of Contact:

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To learn more about our activities and programs, please, visit our website:

<https://www.usaid.gov/what-we-do/working-crises-and-conflict/responding-times-crisis/how-we-do-it/humanitarian-sectors/agriculture-and-food-security/pest-and-pesticide-monitoring>

Additional resources on SGR and other ETOPs**SGR**

USAID Pest Monitoring

<https://www.usaid.gov/what-we-do/working-crises-and-conflict/responding-times-crisis/how-we-do-it/humanitarian-sectors/agriculture-and-food-security/pest-and-pesticide-monitoring/archive>

UN/FAO Desert Locust Watch

<http://www.fao.org/ag/locusts/en/info/info/index.html>

DLCO-EA

<http://www.dlco-ea.org/final/index.php/about-us>

FAO/Central Region Locust Control Commission

<http://desertlocust-crc.org/Pages/index.aspx?CMSId=8&lang=EN>

FAO/Western Region Locust Control Commission

<http://www.fao.org/clcpro/fr/>

FAO Locust Watch - Central Asia and Caucasus

<http://www.fao.org/locusts-cca/en/>

FAO SGR Response Overview Dashboard

<http://www.fao.org/locusts/response-overview-dashboard/en/>

FAO Locust Hub

<https://locust-hub-hqfao.hub.arcgis.com/>
<http://www.fao.org/ag/locusts/en/activ/DLIS/eL3suite/index.html>

FAW

USAID FtF FAW

<https://www.agrilinks.org/post/fall-armyworm-africa-guide-integrated-pest-management>

FAW management animation SAWBO

<https://sawbo-animations.org/video.php?video=//www.youtube.com/embed/5rxlpXEK5q8>

<http://www.cabi.org/isc/datasheet/29810>

<http://www.fao.org/emergencies/resources/maps/detail/en/c/1110178/>

FAO NURU FAW Application

<http://www.fao.org/news/story/en/item/1141889/code/>

USAID FAW PERSUAP

<https://ecd.usaid.gov/repository/pdf/50065.pdf>

FAO FAW Monitoring and Early warning System

<http://www.fao.org/3/CA1089EN/ca1089en.pdf>

<https://acbio.org.za/sites/default/files/documents/BT%20Maize%20Fall%20Army%20Worm%20report.pdf>

<https://www.invasive-species.org/wp-content/uploads/sites/2/2019/03/Fall-Armyworm-Evidence-Note-September-2017.pdf>

AAW

<http://www.armyworm.org/latest-armyworm-forecast-irlco-csa-oct-2018/>