

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Update for May, 2017 with a
Forecast till mid-July, 2017**
[Un résumé en français est inclus](#)

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹) situation remained calm in the Western Outbreak Region (WOR) and control operations only treated 710 ha against hoppers and immature adults in **Morocco** and **Algeria** during May.

The Central Outbreak Region (COR) remained calm during May, but the situation in **Yemen** remained unclear due to the absence of survey operations.

In the Eastern Outbreak Region (EOR) a few scattered adults were detected in southeastern **Iran** where small-scale was reported.

Forecast: Small-scale breeding is likely in spring breeding areas in **Morocco** and **Algeria** during the forecast period provided ecological conditions improve, but significant developments are not expected.

In COR, small scale breeding is likely in areas where rainfall was recorded in the interior of **Saudi Arabia** and **Yemen**, but a significant development is not likely.

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

In EOR, limited SGR activities are likely in summer breeding areas along the Indo-Pakistan borders during the forecast period, but significant activities are not expected.

Active surveillance and timely preventive interventions remain critical at all time in areas where locust activities persist to abate any threats SGR may pose to crops and pasture.

Red (Nomadic) Locust (NSE): NSE persisted in Lake Chilwa/Lake Chiuta plains in **Malawi** and **Mozambique** in May. IRLCO-CSA continued aerial survey and control operations in Malawi with financial assistance from FAO/Malawi.

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts: DMA commended hatching in Azerbaijan and most of the Central Asian countries during April. Cold and dry weather delayed seasonal hatching of LMI and CIT in the Caucasus during April, but may have begun in most of the CA countries during May.

The African Armyworm (AAW): AAW infestations were reported in Oromya and SNNP regions in **Ethiopia** where control operations were carried out during May. AAW outbreaks were also reported in West Nile Region in **Uganda** and affected farmers launched control operations with material and technical assistance from the MoAs (DLCO-EA, IRLOC-CSA, PPD/Uganda).

Fall armyworm (*Spodoptera frugiperda*) (SFR): SFR continued affecting maize and other crops in many countries including **Ethiopia, Kenya, Uganda, Malawi, Zambia** and **Zimbabwe** during May. No update was received on SFR (FAW) in West and Central Africa regions and significant developments are not expected during this period.

It was reported that the SFR had spread to 162 districts in SNNP, Oromya and Gambella administrative regions in **Ethiopia**, to 27 of the 47 counties in **Kenya**, and in more than 78 districts in **Uganda** and continues spreading to other areas. The pest may have also reached **South Sudan**, but this was not possible to confirm due to the ongoing security situation. The Republic of **Sudan** has taken a preventive action to get ahead of a potential FAW invasion by sending PPD experts to Ethiopia to observe and learn (DLCO-EA, IRLCO-CSA, PPD/Ethiopia, PPD/Uganda, PHS/Tanzania).

USAID/OFDA/PSPM continues closely monitoring the SFR (FAW) situation and engaging with key national, regional and international partners to explore and investigate the most effective ways to address the looming threat to food security and livelihoods of vulnerable populations and provide advice and updates (for further detail, please, see pages 10-12, below).

Tomato leaf miner (*Tuta absoluta* - TAB) infestations were reported in

Botswana during February. TAB is native to the tropical South America and alien to the African continent. Since it was first detected in 2006 in Spain it has reached dozens of countries across Europe, Mediterranean, Middle East, Asia, Russia, Japan and many more countries.

In Africa, TAB was first detected during 2008 and has since spread to over 16 countries stretching from North Africa to Central West Africa to East Africa and to Southern Africa. It will continue spreading over much of Africa and seriously affect tomatoes, other vegetables and fruits. TAB is expected to have been on AU's phytosanitary quarantine pest list along with SFR or may have already may be on such list.

Quelea (QQU): QQU outbreaks were reported in **Kenya, Tanzania** and **Zimbabwe** where aerial and/or ground control operations were in progress (DLCO-EA, IRLCO-CSA).

The **USAID/OFDA PSPM and ECA** co-funded Horn of Africa sub-regional emergency desert locust management project that is being implemented by FAO and DLCO-EA showing progress. Technical and material supports that are provided to participating locust-prone countries through the project is improving capacity to better monitor, report and prevent locusts in the sub-region. Participants that received training and surveillance materials are

monitoring the locust situation and sharing reports.

USAID/OFDA/PSPM continuously monitors ETOPs in close collaboration with its network with national PPDs/DPVs, Migratory Pest Units and international and regional organizations, including FAO, CLCPRO, CRC, DLCO-EA, IRLCO-CSA and provides timely updates and advices to HQ, field staff, partners and others as often as necessary. **End summary**

RÉSUMÉ

Le criquet pèlerin (Schistoseca gregaria – SGR): La situation du Criquet pèlerin (Schistoseca gregaria - SGR) est restée calme dans la région de Western Outbreak Region (WOR) et les opérations de contrôle n'ont traité que 710 ha contre les larves et les adultes immatures au Maroc et en Algérie en mai.

La Région centrale d'épidémie (COR) est restée calme en mai, mais la situation au Yémen est restée incertaine en raison de l'absence d'opérations d'enquête.

Dans la région d'évasion de l'est (EOR), quelques adultes dispersés ont été détectés dans le sud-est de l'Iran, où une petite échelle a été rapportée.

Prévisions: l'élevage à petite échelle est probable dans les zones de reproduction du printemps au Maroc et en Algérie pendant la période de prévision, à condition que les

conditions écologiques s'améliorent, mais des développements importants ne sont pas attendus.

En COR, l'élevage à petite échelle est probable dans les zones où des précipitations ont été enregistrées dans l'intérieur de l'Arabie saoudite et du Yémen, mais un développement important n'est pas probable. Dans l'EOR, les activités limitées de SGR sont probablement présentes dans les zones de reproduction estivale le long des frontières indo-pakistanaïses pendant la période de prévision, mais des activités importantes ne sont pas prévues.

La surveillance active et les interventions préventives en temps voulu restent critiques en tout temps dans les zones où les activités acridiennes persistent pour réduire les menaces que les SGR peuvent poser aux cultures et aux pâturages.

Criquet Rouge (Nomadic) (NSE): NSE a persisté dans les plaines du lac Chilwa / Lac Chiuta au Malawi et au Mozambique en mai. L'IRLCO-CSA a poursuivi les opérations de surveillance et de contrôle aérien au Malawi avec l'aide financière de la FAO / Malawi.

Italienne (CIT), Marocaine (DMA), Criminelles astronomiques asiatiques (LMI): DMA a recommandé l'éclosion en Azerbaïdjan et la plupart des pays d'Asie centrale en avril. Le temps froid et sec a retardé l'éclosion saisonnière d'IMT et

de CIT dans le Caucase en avril, mais peut avoir débuté dans la plupart des pays de CA en mai.

Cheille Légionnaire (AAW): Les infestations AAW ont été signalées dans les régions Oromya et SNNP en Éthiopie, où des opérations de contrôle ont été effectuées en mai.

Des épidémies d'AAW ont également été signalées dans la région du Nil occidental en Ouganda et les agriculteurs touchés ont lancé des opérations de contrôle avec l'assistance matérielle et technique des MoA (DLCO-EA, IRLOC-CSA, PPD / Ouganda).

Goutte de l'armée de l'automne (Spodoptera. Frugiperda (SFR): SFR a continué à affecter le maïs et d'autres cultures dans de nombreux pays, notamment l'Éthiopie, le Kenya, l'Ouganda, le Malawi, la Zambie et le Zimbabwe en mai. Aucune mise à jour n'a été reçue sur SFR (FAW) dans les régions de l'Afrique de l'Ouest et du Centre et des développements importants ne sont pas attendus pendant cette période.

Il a été signalé que le SFR s'était propagé à 162 districts de SNNP, des régions administratives Oromya et Gambella en Éthiopie, à 27 des 47 comtés au Kenya et dans plus de 78 districts en Ouganda et qui continuent de se propager dans d'autres régions. Le ravageur peut également avoir atteint le Sud-Soudan, mais cela n'a pas été possible de confirmer en

raison de la situation de sécurité en cours. La République du Soudan a pris une mesure préventive pour aller au-devant d'une éventuelle invasion de FAW en envoyant des experts PPD en Éthiopie pour observer et apprendre (DLCO-EA, IRLCO-CSA, PPD / Éthiopie, PPD / Ouganda, PHS / Tanzanie).

L'USAID / OFDA / PSPM continue de suivre de près la situation de la SFR et de s'engager avec des partenaires nationaux, régionaux et internationaux clés pour explorer et étudier les moyens les plus efficaces de faire face à la menace imminente pour la sécurité alimentaire et les moyens de subsistance des populations vulnérables et fournir des conseils et des mises à jour. *Détail*, s'il vous plaît, voir les pages 10-12 ci-dessous).

Les infestations de mine de feuilles de tomates (*Tuta absoluta* - **TAB**) ont été signalées au Botswana en février. TAB est originaire de l'Amérique du Sud tropicale et étranger au continent africain. Depuis qu'il a été détecté pour la première fois en 2006 à Sprain, il a atteint des dizaines de pays traversant l'Europe, la Méditerranée, le Moyen-Orient, l'Asie, la Russie, le Japon et bien d'autres pays.

En Afrique, le TAB a d'abord été détecté en 2008 et s'est propagé depuis plus de 16 pays s'étendant de l'Afrique du Nord au centre-ouest de l'Afrique en Afrique de l'Est et en

Afrique australe. Il continuera à se répandre sur une grande partie de l'Afrique et affectera sérieusement les tomates, les autres légumes et les fruits. Il est considéré comme un parasite sur la liste de parasites de la quarantaine phytosanitaire de l'UA avec SFR ou peut-être déjà figurer sur cette liste.

Quelea (QQU): des allumettes QQU ont été signalées au Kenya, en Tanzanie et au Zimbabwe, où des opérations de contrôle aérien et / ou terrestre étaient en cours (DLCO-EA, IRLCO-CSA).

Le soutien du PSMS auprès des donateurs multiples, y compris l'USAID / OFDA et d'autres, a été souligné et reconnu par tous les pays participants et les deux Commissions. Le conseiller technique principal de l'USAID / OFDA pour les ravageurs et les pesticides a souligné l'importance des engagements nationaux et régionaux pour assurer la durabilité et la continuité de l'utilité du soutien post-donateur du PSMS.

Le projet PSPM et ECA de l'USAID / OFDA a cofinancé le projet sous-régional de gestion des criquets pèlerins d'urgence de la Corne de l'Afrique qui est mis en œuvre par la FAO et DLCO-EA montrant les progrès réalisés. Le soutien technique et matériel fourni aux pays participants actives par les acridiens dans le cadre du projet améliore la capacité de mieux surveiller, signaler et prévenir les sauterelles dans la sous-région.

Les participants qui ont reçu du matériel de formation et de surveillance surveillent la situation acridienne et partagent des rapports.

USAID / OFDA / PSPM surveille ETOPS de près par le biais du réseau STI avec PPDs / DPV, unités nuisibles migrateurs nationales et les organisations internationales et régionales, des friandises, y compris la FAO, la CLCPRO, CRC, DLCO-EA, IRLCO-CSA et fournit des mises à jour en temps opportun et de conseils à l'AC, champ le personnel, les partenaires et les autres aussi souvent que nécessaire. Note de fin

OFDA's Contributions to ETOP Activities

The online Pesticide Stock Management System (PSMS) that was developed with financial assistance from USAID/OFDA and other partners has been installed in some 65 countries around the globe and is helping participating countries maintain inventories. Thanks to this tool many counties have been able to avoid unnecessary procurements and stockpiling of pesticides and helping them avoid costly disposal operations and improve safety and well-being of their citizens and shared environment.

The USAID/OFDA funded community-based armyworm monitoring, forecasting and early warning (CBAMFEW) project that was concluded last September has been incorporated in the annual work plan of the national crop protection departments in all participating countries <http://bit.ly/1C782Mk>. The project enabled farmers to detect and report

AAW and prevent major crop/pasture damage. Participating countries continue expressing their gratitude for having the project implemented in their countries. USAID/OFDA/PSPM will maintain a line of communication with participating countries and monitor progresses.

OFDA/PSPM is working with other interested parties to explore means and ways to expand this innovative technology to other AAW affected countries and benefit farmers and rural communities.

OFDA/PSPM's interests in sustainable pesticide risk reduction in low income countries to strengthen their capacities and help improve safety of vulnerable populations and shared environment continued. It intends to expand this initiative to other parts of Africa, the Middle East, CAC, etc., as needed. OFDA continued its support for DRR programs to strengthen national and regional capacities for ETOP operations. The program which is implemented through FAO has assisted several frontline countries to mitigate, prevent, and respond to ETOP outbreaks. It has helped participating countries avoid from misuse and mishandling of pesticides, pesticide-incorporated materials and application platforms.

USAID/OFDA-sponsored project implemented by FAO to strengthen national and regional capacity for locust control and prevention and help more than 25 million people in Caucasus and Central Asia (CAC) live of agriculture and livestock ended this month. The project has promoted and created collaboration among neighboring countries for joint monitoring, surveillance, reporting and preventive interventions for three major

*locust species in the region. Thanks to this project, dozens of technical staff from **Sahel West Africa, Northwest Africa, Eastern and Northeastern Africa, CAC, and the Middle East** were trained in health and safety of rural communities and Environmental Monitoring in ETOP operations and PSMS management.*

Note: ETOP SITREPs can be accessed on USAID Pest and Pesticide Management website: [USAID/OFDA PPM Website](#)

Weather and Ecological Conditions

WOR: Ecological conditions remained unfavorable in most parts of the WOR during May. Only patches of green vegetation persisted in a few places, e.g., southern and southeastern **Morocco**, grangerization areas in **Mali**, and irrigated areas in **Algeria** during this period. In **Mali** annual plants started appearing in areas where the seasonal rains have commenced and moist winds were predominantly southwesterly (**a situation that needs to be closely watched as this could impact the migration of the FAW in the months to come**). In **Chad** no rain was reported and annual vegetation remained dry in the gregarization zones and only a few perennial vegetation may be present in Fada and Kalait during May (CNLA/Chad, CNLA/Mauritania, CNLAA/Morocco, CNLP/Mali, CNLA/Tunisia, FAO-DLIS, NCLC/Libya).

COR: In COR, light to moderate rain was reported in Egypt, Eritrea, Ethiopia, Northern Somalia, and Sudan during May. Heavy rains were also reported in summer and spring breeding areas in Saudi Arabia and Yemen and causing flooding in several wadis in Yemen during

May (DLMCC/Yemen, DLCO-EA, DLMO/Oman, FAO-DLIS, PPD/Sudan).

EOR: Light rains were reported in the summer breeding areas along the Indo-Pakistan borders during May, but the rest of EOR remained dry during this month (FAO-DLIS).

NSE Outbreak Region: The seasonal rain has tapered off in the NSE outbreak regions with light rain reported in **Mozambique** and moderate to heavy rains reported in **Uganda** some with thunderstorms during May, and showing quick decline in many places, but Vegetation remained green in most parts of the country during May (IRLCO-CSA, PPD/Uganda).

CAC: In Central Asia, the weather was unstable with localized rain, but becoming progressively suitable for locust hatching and hopper development in April and is expected to have continued improving during May. In the Caucasus, cool to cold weather persisted during April and expected to have begun improving during May.

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

Note: *Changes in the weather pattern and the rise in temperature can contribute to ecological shift in ETOP habitats and increase the risk of pest outbreaks, resurgence and emergence of new pests. 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 normal ambient altitude due to warmer higher elevations.*

*The **Asian migratory locust**, an insect that bred just once a year, recently began exhibiting two generations per year. These anomalous manifestations and phenomena, which are largely attributed to the change in the weather pattern and associated ecological shift, are a serious concern to farmers, rangeland managers, crop protection experts, development and humanitarian partners and others. Regular monitoring, documenting and reporting anomalous manifestations in pest behavior and habitat remain critical to help avoid and minimize potential damages to crops, pasture and livestock and reduce subsequent negative impacts on food security and livelihoods of vulnerable populations and communities. **End note.***

Detailed Accounts of ETOP Situation and Forecast for the Next Six Weeks

SGR – WOR: SGR situation remained calm in most of the WOR. Control operations treated 443 ha against hoppers, and immature adults in Guelmin Province in **Morocco** in May (the country treated 965 ha in total since 22 October 2016). In **Algeria** 276 ha were treated near irrigated areas during this month. No locusts were reported in Chad, Libya, Mali, Niger, or Tunisia during this month (CNLA/Chad, CNLP/Mali, CNLAA/Morocco) (CNLA/Mauritania, CNLA/Libya, CNLA/Tunisia, FAO-DLIS).

Forecast: In **Morocco** only insignificant numbers of isolated adults will likely appear in a few places where favorable ecological conditions are present, but significant developments are unlikely. In **Mali**, unfavorable ecological conditions will force SGR to remain in patches of perennial vegetation and a similar situation may occur in **Niger**. No SGR

activities are expected in **Chad** or other countries in the region during the forecast period (CNLA/Chad, CNLP/Mali, CNLAA/Morocco) (CNLA/Mauritania, CNLA/Libya, CNLA/Tunisia, FAO-DLIS).

SGR (Desert Locust) - COR: No locusts were reported in Djibouti, Egypt, Eritrea, Ethiopia, Oman, Somalia, or Sudan during May. Survey operations were not possible in **Yemen** due to security reasons (DAF/Djibouti, DLCO-EA, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Eritrea, PPD/Sudan).

Forecast: In COR, small scale breeding is likely in the interior of **Saudi Arabia** and adjacent areas in **Yemen** where light to heavy rainfall was reported during early May. A few isolated adults may appear in areas of recent rainfall in **Ethiopia**, northern **Somalia** and **Oman**, but significant developments are unlikely during the forecast period (DLCO-EA, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Sudan).

SGR - EOR: The SGR situation remained calm in the region and only a few scattered solitary adults were reported breeding on small-scale in southeastern coast of **Iran** during May (DPPQS/India, FAO-DLIS).

Forecast: Small-scale breeding is likely along the **Indo-Pakistan** border where light rain was reported during May and the Monsoon rains will create favorable conditions during the forecast period.

Active monitoring, timely reporting and preventive interventions remain critical to abate any major developments that could pose serious threats to crops and pasture in areas where locust activities are present.

Red (Nomadic) Locust (NSE): NSE concentrations and swarms persisted in Lake Chilwa/Lake Chiuta plains in **Malawi** and **Mozambique** (freshly fried locusts were being soled in the market in Zomba, 40 Km north of Lake Chilwa, Malawi) during this month. IRLCO-CSA in collaboration with MoA/Malawi and with financial assistance from FAO/Malawi continued aerial survey and control operations. Surveys were not conducted in **Tanzania** or **Mozambique** during this period, but it is expected that NSE swarms have been forming in Malagarasi Basin, Ikuu-Katavi plains in **Tanzania** and in Buzi-Gorongosa and Dimba plains of **Mozambique** during May (IRLCO-CSA).

In **Zambia**, escapee populations of NSE, African Migratory Locust and *Catolipus spp* (grasshopper) continued to form concentrations/swarms in the Kafue Flats. IRLCO-CSA continues its appeal for resources from its member-states to carry out essential survey and control operations before they begin laying eggs.

Forecast: With the vegetation burning in progress, it is expected that more swarms and concentrations of locusts will form during the coming months. If left uncontrolled, these swarms will migrate and invade cultivated crops/pastures and become a threat to vulnerable populations (IRLCO-CSA, AELGA/OFDA).

IRLCO-CSA, the only regional entity in the southern region with the mandate to survey, monitor, prevent and control locusts, armyworm and quelea birds, continues appealing to its member-states to avail resources to carry out timely survey, monitoring and control operations. It is in the interest of all

concerned that IRLCO-CSA member-states positively respond to the Organization's appeal for resources to prevent and control these pests successfully from ravaging crops and pasture (IRLCO-CSA, OFDA-AELGA).

Madagascar Migratory Locust (LMC):

No update was received at the time this report was compiled. Locust activities are expected to have continued in the primary outbreak areas in the central plateau and other parts of the country.

www.fao.org/emergencies/crisis/madagascar-locust/en/.

<http://www.fao.org/emergencies/resources/videos/video-detail/en/c/430729/>

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): A late received report indicated that cold and relatively dry weather conditions delayed hatching of most of the three locust species in Central Asia and the Caucasus (CAC) regions during April. Only DMA began hatching in Azerbaijan and most of the Central Asian countries during April control operations treated hoppers and bands. Hatching of DMA is expected to have continued and CIT and LMI have likely begun in most of the CA countries during May.

Forecast: Ecological conditions are expected to have improved and locust activities will continue developing in most of breeding areas. The Aral Sea region, where large-scale egg laying of LMI occurred during 2016, will experience considerable development in the coming months. Other breeding areas such as northern **Afghanistan** where undisturbed prolonged egg laying exploited the ongoing insecurity situation in the region

are expected to experience increased locust activities. Vigilance, mapping hatching grounds remain essential to plan effective interventions during 2017.

Note: Italian, Migratory and Moroccan locusts and some grasshopper species are a constant threat to the CAC region. They profusely multiply and attack tens of millions of hectares of crop and pasture and adversely affect food security and livelihoods of more than 20 million vulnerable inhabitants that eke out a living primarily from farming and herding. With the ability to travel more than 100 km (60 miles) each day, these locusts can decimate dozens of hectares of cereal crops, pasture, cotton, fruit trees, leguminous plants, sunflower, tobacco, vineyard, vegetable and others over vast areas. Many CAC countries affected by these locusts lack robust and well established capacity to effectively prevent and control these pests, but do their level best and invest tremendous amounts of resources to keep these pests under control. USAID/OFDA has been supporting a DRR program to strengthen national and regional capacity to help abate these beasts (for further detail, refer to page 6, column two paragraph two). End note.

African Armyworm (AAW): AAW infestations were reported in 13,925 ha in 13 districts in Oromya and SNNP regions in Ethiopia where control operations treated some 3460 ha during May. AAW outbreaks were also reported in Arua and Moyo districts in West Nile Region in Uganda where MoA provided pesticides and technical support to affected farmers to control the outbreaks (DLCO-EA, IRLOC-CSA), PPD/Uganda).

Forecast: AAW outbreaks will likely occur in northern Kenya, in the eastern and northern parts of Uganda and in the western, southeastern and Rift Valley regions of Ethiopia during the forecast period (DLCO-EA, IRLCO-CSA, PPD/Ethiopia).

Where applicable, CABMFEW forecasters must remain vigilant and report any trap catches on time to concerned authorities to facilitate rapid interventions (DLCO-EA, IRLCO-CSA, OFDA/AELGA).

Note: PSPM continuous developing and improving AAW information in both the SOR and COR and so far, printable and web-based maps have been developed for AAW outbreak and invasion countries in the central and southern regions (click on the below link for the maps (OFDA/PSPM in collaboration with the GIU will develop a similar map for FAW) :

<http://usaid.maps.arcgis.com/apps/Viewer/index.html?appid=9d2ab2f918284595819836d1f16a526f>

Fall armyworm (*Spodoptera frugiperda*) (SFR - FAW): SFR continued affecting maize and other crops in many countries in sub-Saharan Africa.

In **Ethiopia**, FAW (SFR) has spread to SNNP, Oromya and Gambella Region in May and ground operations controlled 53,659 ha using pesticides (44,686 l reported sprayed), cultural and mechanical means. Surveillance and control efforts are being coordinated and launched by MoA with the participation of affected farmers (48,300 farmers participated in control operations, with hand picking and pesticides). In previous month, MoA/Ethiopia estimated crop

losses of up to 15–30% in SNNP and 5–10% in Oromia where some localities reported 100% loss). This estimate could increase as the pest continuous affecting crops and pasture. GoE and its partner have developed an action plan with a budget of USD 12 million plus and appealing to its partners for assistance.

In **Kenya**, the pest has been reported in 27 of the 47 counties threatening more than 200,000 ha of maize crops. Ground control operations continued in all affected areas by farmers with assistance and coordination from the MoA. It is worth noting that most of the infestations in Kenya were reported in the western and Rift Valley parts of the country which suggests that the pest might have migrated from Uganda.

SFR may have crossed into **South Sudan**, but it was not possible to confirm at the time this report was compiled due to the ongoing security situation.

The **Republic of Sudan** has taken a proactive action to get ahead of a potential FAW invasion and to this effect, it sent a team of PPD experts to Ethiopia to observe outbreaks and learn ways and means to tackle the problem (PPD/Ethiopia).

In **Uganda**, FAW outbreaks continued spreading and reached 78 districts by May (by late April 60 districts were reported affected). The pest was detected in Moyo, Kotido, Karamajo and other districted in North Eastern part of the country where late rains were reported. MoA/Uganda provided pesticide to affected farmers and sprayers to model farmers to demonstrate appropriate control

operations (PPD/Uganda). The pest was reported causing a total crop loss in some places where replanting was necessitated. MoA/**Uganda** estimates a potential annual loss of some 450,000 MT of maize to established and unabated SFR outbreaks. GoU developed an action plan with a budget of USD 1 million before the pest migrated to that several dozen districts and it is expected to have revised the action plan after the pest continued affecting many more districts (MoA/Uganda).

Rwanda has developed an action plan for USD 700,000 with USD 200,000 from its own and the rest soliciting from partners.

Burundi requested an emergency technical assistance from FAO and FAO is considering a TCP project to assist with FAW issues (FAO-SFE)

Tanzania has developed an action plan to carry out surveillance and monitoring during the coming seasons.

Forecast: With the Intertropical Front moving northward during the coming months, it is likely that the pest will continue its northward trajectory and threaten crops in many countries. In Ethiopia, the pest will likely follow the seasonal wind direction and continue spreading north and westward and affect the central, northwestern and northern parts of the country. In Kenya and Uganda, it will *likely continue spreading further north into the western and the Rift Valley, northern and north-eastern Uganda and perhaps reach South Sudan and other areas during the forecast period.*

If established on the continent, a phenomenon that appears to be highly likely given the nature of the pest and the favorable conditions in many countries, this aggressive and fast spreading pest will likely continue affecting agricultural production across the continent and threaten food security and livelihoods of tens of millions of households.

According to a preliminary Evidence Note recently released by CABI, SFR is expected to have caused damage to an estimated 13.5 million tons of maize (valued at US\$3 billion). So far different scale of SFR damage have been reported on more than 300,000 ha of maize in sub-Saharan Africa just over the past six or so months. The Evidence Note estimates a predicted loss of more than USD 13.38 billion in maize, sorghum, rice and sugarcane – mostly rice paddy, maize and sugarcane. This information document is being revised and updated to reflect an ongoing and evolving situation of the SFR (FAW).

As a new pest to the continent, extensive studies are required to better understand its biological behavior, host preference, habitat selection, means and range of migration, and competition between indigenous species is ever more important to develop effective control tools.

Awareness raising and training local communities, agricultural agents and other concerned entities are important for effective identification, detection surveillance, monitoring as well as to implement preventive and curative control interventions.

As part of a long-term preventive and curative control options, identification and selection of resistance crop varieties remain critical to implement effective and more sustainable management strategies. The search and research for biological control tools - parasitoids, parasites, predators, pathogens, needs to pursue to help develop an array of control tools in a tool box.

Active surveillance, preventive interventions as well as timely reporting and information sharing within and outside the affected regions remain critical to abate this unstoppable movement of the pest.

This pest can travel up to 100 km/day with the capacity to reach more than 1,000 km during its life and even further with the support of strong trade winds.

It is highly likely that the pest will remain active in late planted or irrigated maize crops during the forecast period. However, it is not clear how this will further develop and impact crops and pasture, but regardless, affected communities/countries must remain vigilant and maintain active monitoring, surveillance and implement preventive interventions as needed. Neighboring countries must remain alert. All countries are strongly encouraged to share information on SFR sightings in their respective countries with their neighbors.

USAID/OFDA/PSPM will continue monitoring the situation and provide updates and offer guidance as often as necessary.

Quelea (QQU): QQU outbreaks were reported in Timau area, Meru County, **Kenya** where preparation for aerial

control is in progress. QQU outbreaks were also reported in Dodoma, Singida and Mbeya regions in **Tanzania** and aerial control operations by a DLCO-EA aircraft continued in Bahi and Kidaru districts, in Dodoma and Singida regions. The birds were also reported attacking sorghum in Matebeleland North Province in **Zimbabwe** where ground control operations were in progress (DLCO-EA, IRLCO-CSA).

Forecast: QQU birds are likely to be a problem to small grain cereal growers in Siaya, Busia, Kisumu, Narok, Nakuru, Meru, Kitui and Makueni counties of **Kenya**; Morogoro Singida, Shinyaga, Manyara and Kilimanjaro regions of **Tanzania** and in Provinces in **Zimbabwe** where Irrigated wheat is grown (DLCO-CE, IRLCO-CSA).

Facts: QQU birds can travel ~100 km/day in search of food. An adult QQU bird can consume 3-5 grams of grain and destroy the same amount each day. A medium density QQU 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 information was received on rodent situation during May.

(Note: On average an adult rat can consume 3-5 gm of food (grains etc.)/day and a population of 200 rats/ha (a very low density) could consume what a sheep can eat in one day (not to mention the amount they can damage, destroy or pollute making it unfit for human consumption) and the zoonotic diseases they can transmit.)

All ETOP front-line countries must maintain regular monitoring. Invasion countries should remain alert. DLCO-EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, national DPVs and PPDs, ELOs are encouraged to continue sharing ETOP information with stakeholders as often as possible and on a timely basis. Lead farmers and community forecasters must remain vigilant and report ETOP detections to relevant authorities immediately.

Inventories of Pesticide Stocks for ETOP Prevention and Control

During May, 443 ha were treated against hoppers and immature adults in southern and southeaster **Morocco** and some 267 ha were treated in **Algeria**.

Control operations continued against AAW and SFR (FAW) in several **Sub-Saharan African** countries where hundreds of thousands of ha were affected and treated during this month.

Note: *A Sustainable Pesticide Stewardship (SPS) can strengthen pesticide delivery system (PDS) at the national and regional levels. A strong PDS can effectively reduce pesticide related human health risks, minimize environmental pollution, increase food security and contribute to the national economy. An SPS can be effectively established by linking key stakeholders across political borders. End Note.*

OFDA/PSPM encourages alternatives such as IPM to reduce risks associated with pesticide stockpiling. A judiciously executed triangulation of surplus stocks from countries with large inventories to countries in need is a win-win situation worth considering.

Table 1. ETOP Pesticide Inventory in Frontline Countries during March, 2016

Country	Quantity (l/kg)*
Algeria	1,188,815~
Chad	38,300
Egypt	68,070~ (18,300 ULV, 49,770 I)
Eritrea	17,124~ + 20,000 ^D
Ethiopia	9,681~
Libya	25,000~
Madagascar	206,000~ + 100,000 ^D
Mali	7,000
Mauritania	14,998 ^{DM}
Morocco	3,490,732 ^D
Niger	75,750~
Oman	10,000~
S. Arabia	89,357~
Senegal	156,000~
Sudan	169,710~
Tunisia	68,514 obsolete
Yemen	40,090 ^D + 180 kg GM~

* Includes different kinds of pesticide 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 = *GreenMuscle*TM (fungal-based biological pesticide)

LIST OF ACRONYMS

AAW	African armyworm (<i>Spodoptera expempta</i>)	DPPQS	Department of Plant Protection and Quarantine Services, India
AELGA	Assistance for Emergency Locust Grasshopper Abatement	DPV	Département Protection des Végétaux (Department of Plant Protection)
AFCS	Armyworm Forecasting and Control Services, Tanzania	ELO	EMPRES Liaison Officers –
AfDB	African Development Bank	EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases
AME	<i>Anacridium melanorhodon</i> (Tree Locust)	EOR	Eastern SGR Outbreak Region
APLC	Australian Plague Locust Commission	ETOP	Emergency Transboundary Outbreak Pest
APLC	Australian Plague Locust Commission Bands groups of hoppers marching pretty much in the same direction	Fledgling	immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed
CAC	Central Asia and the Caucasus	GM	GreenMuscle [®] (a fungal-based biopesticide)
CBAMFEW	Community-based armyworm monitoring, forecasting and early warning	ha	hectare (= 10,000 sq. meters, about 2.471 acres)
CERF	Central Emergency Response Fund	ICAPC	IGAD's Climate Prediction and Application Center
CIT	<i>Calliptamus italicus</i> (Italian Locust)	IGAD	Intergovernmental Authority on Development (Horn of Africa)
CLCPRO	Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)	IRIN	Integrated Regional Information Networks
CNLA(A)	Centre National de Lutte Antiacridienne (National Locust Control Center)	IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa
COR	Central SGR Outbreak Region	ITCZ	Inter-Tropical Convergence Zone
CPD	Crop Protection Division	ITF	Inter-Tropical Convergence Front = ITCZ)
CRC	Commission for Controlling Desert Locust in the Central Region	FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service
CTE	<i>Chortoicetes terminifera</i> (Australian plague locust)	Hoppers	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)
DDLC	Department of Desert Locust Control	JTWC	Joint Typhoon Warning Center
DLCO-EA	Desert Locust Control Organization for Eastern Africa	Kg	Kilogram (~2.2 pound)
DLMCC	Desert Locust Monitoring and Control Center, Yemen	L	Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)
DMA	<i>Dociostaurus maroccanus</i> (Moroccan Locust)	LCC	Locust Control Center, Oman

LMC	<i>Locusta migratoriacapito</i> (Malagasy locust)	PBB	Pine Bark Beetle
LMM	<i>Locusta migratoria migratorioides</i> (African Migratory Locust)	PSPM	Preparedness, Strategic Planning and Mitigation (formerly known as Technical Assistance Group - TAG)
LPA	<i>Locustana pardalina</i>	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.
MoAFSC	Ministry of Agriculture, Food Security and Cooperatives	USAID	the United States Agency for International Development
MoAI	Ministry of Agriculture and Irrigation	UN	the United Nations
MoARD	Ministry of Agriculture and Rural Development	WOR	Western SGR Outbreak Region
NALC	National Agency for Locust Control	ZEL	<i>Zonocerus elegans</i> , the elegant grasshopper
NCDLC	National Center for the Desert Locust Control, Libya	ZVA	<i>Zonocerus variegatus</i> , the variegated grasshopper, is emerging as a fairly 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...
NOAA (US)	National Oceanic and Aeronautic Administration		
NPS	National Park Services		
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</i> sp. – 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		
QQU	<i>Quelea Qulelea</i> (Red Billed Quelea bird)		
SARCOF	Southern Africa Region Climate Outlook Forum		
SFR	<i>Spodoptera frugiperda</i> (SFR) (Fall armyworm (FAW))		
SPB	Southern Pine Beetle (<i>Dendroctonus frontalis</i>) – true weevils		
SGR	<i>Schistoseca gregaria</i> (the Desert Locust)		
SSD	Republic of South Sudan		
SWAC	South West Asia DL Commission		

Who to contact for more information:

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