

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Update for April, 2017 with a
Forecast till mid-June, 2017
Un résumé en français est inclus**

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹) situation remained calm in April in the Western Outbreak Region (WOR). Only a few solitary adults were reported in **Mauritania** and **Morocco**. Copulating adults and hoppers were controlled in **Algeria** during this month, but no locusts were reported elsewhere in the region during this month.

The Central Outbreak Region (COR) remained calm during April and only a few solitary adults were detected in the southeastern Red Sea coast in **Egypt**. No locusts were detected during surveys carried out in **Ethiopia, Sudan, Somalia, Oman or Saudi Arabia** and no surveys were conducted and no SGR was reported in Djibouti, Eritrea, Yemen or the rest of the Gulf States during April.

A few scattered solitary adults were detected in southeastern **Iran**, but the rest of the Eastern Outbreak Region (EOR) remained calm during this month.

Forecast: Small-scale breeding is in spring breeding areas in **Morocco** and

Algeria provided ecological conditions improve, but significant developments are not likely in WOR during the forecast period.

In COR, small scale breeding is likely in the interior of **Saudi Arabia** and perhaps **Yemen** in areas where rainfall was recorded during the last decade of March and April. The rest of COR will likely remain calm during the forecast period.

In EOR, limited SGR activities are likely in spring breeding areas in southeastern **Iran**, but significant developments are not likely during the forecast period.

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 has completed breeding and swarms may have begun developing during April in the outbreak areas in **Malawi, Mozambique, Tanzania** and **Zambia** where favorable ecological conditions persisted (IRLCO-CSA).

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts: No update was received on the Central Asia and the Caucasus (CAC) regions. However, some locust activities may have begun in a few places where

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

ecological conditions have started improving.

*Locust outbreaks were reported in **Bolivia** during March, but additional information was not available at the time this report was compiled.*

The African Armyworm (AAW):

AAW outbreaks were reported in **Kenya** where control operations were launched by affected farmers with technical and material assistance from the MoAs and increased moth catches were reported on southern **Ethiopia** during late April (DLCO/EA, IRLCO-CSA).

Fall armyworm (*Spodoptera frugiperda*) (SFR):



SFR continued affecting maize and other crops in many countries in sub-Saharan

Africa. The pest was reported in **Kenya, Tanzania, Ethiopia, Uganda, Rwanda, Angola, Malawi, and Zimbabwe** where it was causing damage to maize and other cereal crops during April.

In **Kenya**, the pest was reported attacking late planted maize crops on more than 100,000 ha in 18 Counties. In Tanzania, SFR was reported in attacking maize crops in seven regions. In **Malawi** and **Zimbabwe**, the pest was reported attacking irrigated maize crops. In **Ethiopia**, it was reported that the pest attacked

more than 22,900 ha of maize, rice, Enset and/or Taro in two regions, 17 zones, in 73 districts as of late April.



MoA/ETH estimates crop losses of up to 15–30% in SNNP and 5–10% in Oromia regions with some localities reporting 100% loss. In **Uganda**, AAW and FAW outbreaks

were reported in 20 districts across the country and continued spreading to other areas (MoA/ **Uganda** estimates a potential annual loss of some 450,000 MT of maize to unabated SFR. The pest has caused complete crop damage needing replanting in some localities in some countries. Control operations are being undertaken by the affected farmers with technical and material assistance from respective MoAs in affected countries (DLCO-EA, IRLCO-CSA, OCHA, PPD/ETH).

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.

USAID/OFDA/PSPM continues closely monitoring the SFR 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 13-15, 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. It is considered a pest to be on AU's phytosanitary quarantine pest list along with SFR or may already be on such list.

Catantopidae spp. A grasshopper species, and African Migratory Locust LMM persisted in some areas of the Kafue Flats in **Zambia** where ground control treated 5,502 ha in February and March 2017 with financial assistance from the GoZ. The grasshopper species was detected

attacking maize crops. Control operations were prevented in some areas due to flooding.

Quelea (QQU): QQU outbreaks were reported in April in Dodoma, Shinyanga and Singida Regions in **Tanzania** where they were seen attacking rice and sorghum crops. Plant Health Services of the Ministry of Agriculture, Food Security and Cooperatives continued survey operations to detect roosting sites. The pest was not reported in other countries during this month (DLCO-EA, IRLCO-CSA).

Note: IRLCO-CSA reported that **Malawi** through FAO/Malawi and USAID provided USD 77,796 to control NSE in Lake Chilwa/Lake Chiuta plains using a biopesticides. **Zambia** also provided USD 480,000 to enable survey and control operations against NSE in the Kafue Flats and Lukanga Swamps and **Tanzania** pledged to make resources available to IRLCO-CSA for survey and control operations.

IRLCO-CSA appreciates contributions and pledges made by these member-states and development partners, and appeals to other to follow the trend and provide additional resources to effectively conduct survey and control operations against these multiple transboundary crop pests and prevent the threats they pose on food security and livelihoods of rural communities.

End Note

During March USAID/OFDA's Senior Technical Advisor for pests and pesticides participated in the final inter-regional training-workshop and discussion meetings on the multi-donor funded Pesticide Stock Management System in Agadir, Morocco. Participants from 12 countries from the CLCPRO and CRC regions as well as the Executive Secretaries of the two regional commissions and the director of Agritech, Morocco also attended the event. Hands-on exercises on pesticide quality control, as well as theoretical and practical training were provided to the country reps and extensive discussions were held during this event.

The support for the PSMS from multi-donors, including USAID/OFDA and others were underscored and recognized by all participating countries and the two Commissions. USAID/OFDA Senior Technical Advisor for pests and pesticides underscored the importance of national and regional commitments to ensure sustainability and continuity of the usefulness of the PSMS post-donor support.

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 support being 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 en avril dans la Western Outbreak Region (WOR). Seuls quelques adultes solitaires ont été signalés en **Mauritanie** et au **Maroc**. Des copulants d'adultes et de larves ont été contrôlés en **Algérie** au cours de ce mois, mais aucun criquet n'a été signalé ailleurs dans la région au cours de ce mois.

La région d'émergence centrale (COR) est restée calme en avril et seulement quelques adultes solitaires ont été détectés dans la côte sud de la mer du sud-est en **Egypte**. Aucun criquet n'a été détecté au cours d'enquêtes menées en Éthiopie, au Soudan, en Somalie, en Oman ou en Arabie Saoudite et aucune enquête n'a été réalisée et aucun SGR n'a été signalé

en Djibouti, en Érythrée, au Yémen ou dans le reste des États du Golfe en avril.

Quelques adultes isolés dispersés ont été détectés dans le sud-est de l'Iran, mais le reste de la Région de l'Est (**EOR**) est resté calme pendant ce mois.

Prévisions: L'élevage à petite échelle se trouve dans les zones de reproduction du printemps au Maroc et en Algérie, à condition que les conditions écologiques s'améliorent, mais des développements importants ne sont pas probables dans **WOR** pendant la période de prévision.

En **COR**, l'élevage à petite échelle est probable dans l'intérieur de l'Arabie Saoudite et peut-être le Yémen dans les régions où les précipitations ont été enregistrées au cours de la dernière décade de mars et d'avril. Le reste du COR restera probablement calme pendant la période de prévision.

Dans l'**EOR**, les activités limitées de SGR sont probablement présentes dans les zones de reproduction printanière dans le sud-est de l'Iran, mais des développements importants ne sont pas probables pendant la période de prévision.

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.

Red (Nomadic) Locust (NSE):

NSE a complété l'élevage et les essais peuvent avoir commencé à se développer en avril dans les zones d'épidémies où des conditions écologiques persistent au Malawi, au Mozambique, en Tanzanie et en Zambie (IRLCO-CSA).

Italienne (CIT), Marocaine (DMA), Criminelles astronomiques

asiatiques (LMI): langage migrateur asiatique (LMI): aucune mise à jour n'a été reçue des régions d'Asie centrale et du Caucase (CAC). Cependant, certaines activités acridiennes ont commencé dans quelques domaines où les conditions écologiques ont commencé à s'améliorer.

Des épidémies ont été signalées en **Bolivie** en mars, mais les détails n'étaient pas disponibles au moment où ce rapport a été compilé.

Cheille Légionnaire (AAW): Des épidémies de AAW ont été signalées au Kenya et en Tanzanie et les opérations de contrôle sont lancées par les agriculteurs touchés avec une assistance technique et matérielle des MoA (DLCO / EA, IRLCO-CSA).

Goutte de l'armée de l'automne (Spodoptera. Frugiperda (SFR):

SFR a continué d'affecter le maïs et d'autres cultures dans de nombreux pays d'Afrique subsaharienne. Le

ravageur a été signalé au **Kenya**, en **Tanzanie**, en **Éthiopie**, en **Ouganda**, au **Rwanda**, en **Angola**, au **Malawi** et au **Zimbabwe**, où il a causé des dommages au maïs et à d'autres cultures de céréales en avril.

Au **Kenya**, le ravageur a été déclaré attaquant des cultures de maïs plantées tardivement sur plus de 100 000 ha dans 18 comtés. En **Tanzanie**, SFR a été signalé pour attaquer des cultures de maïs dans sept régions. Au **Malawi** et au **Zimbabwe**, on a signalé que l'organisme nuisible attaquait les cultures de maïs irriguées.

En **Éthiopie**, on a signalé que l'organisme nuisible a attaqué plus de 22 900 ha de maïs, riz, Enset et / ou Taro dans deux régions, 17 zones, dans 73 districts à la fin d'avril. MoA / ETH estime que les pertes de récolte atteignent jusqu'à 15 à 30% dans SNNP et 5 à 10% dans les régions d'Oromia, certaines régions signalant une perte de 100%.

En **Ouganda**, des épidémies d'AAW et de FAW ont été signalées dans 20 districts à travers le pays et ont continué à se propager dans d'autres régions (MoA / Ouganda estime une perte potentielle annuelle de quelque 450 000 tonnes de maïs à SFR sans relâche. L'organisme nuisible a causé des dommages récoltés complets nécessitant une replantation Certaines localités dans certains pays. Des opérations de contrôle sont entreprises par les agriculteurs

concernés avec une assistance technique et matérielle des MoA respectifs dans les pays touchés (DLCO-EA, IRLCO-CSA, OCHA).

L'organisme nuisible a causé des dommages récoltés complets nécessitant une replantation de certaines localités. Des opérations de contrôle sont entreprises par les agriculteurs touchés avec une assistance technique et matérielle des MoA respectifs dans les pays touchés (DLCO-EA, IRLCO-CSA, PPD / ETH).

Si l'on établit sur le continent, un phénomène qui semble être très probable compte tenu de la nature du parasite et des conditions favorables dans de nombreux pays, ce ravageur agressif et rapide continuera d'affecter la production agricole à travers le continent et menace la sécurité alimentaire et les moyens de subsistance de Des dizaines de millions de ménages.

Dans le prolongement de la réunion de Harare et en reconnaissance de la capacité du ravageur de menacer la sécurité alimentaire et les moyens de subsistance de dizaines de millions de personnes à travers le continent, des réunions de consultation technique et des parties prenantes ont eu lieu à Nairobi, au Kenya, au cours de la dernière semaine de Avril 2017.

Les experts techniques de différents domaines de recherche, de développement et de lutte antiparasitaire ont présenté des

comptes rendus détaillés de l'organisme nuisible, y compris sa biologie, sa phénologie, sa préférence pour l'habitat et l'hôte, le suivi et les interventions de contrôle et de gestion.

Les pays touchés ont signalé la situation de SFR dans leurs pays respectifs et les experts ont partagé leurs expériences avec les participants. Plusieurs éléments utilisables ont été identifiés et les organisations principales ont été désignées pour coordonner et explorer les moyens et moyens de les mettre en œuvre.

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 13-15 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.

Cataloipus spp. Une espèce de sauterelle et le LMM africain de la langouste migratrice ont persisté dans certaines régions des Kafue Flats en Zambie où le contrôle au sol a traité 5 502 ha en février et mars 2017 avec l'aide financière du GoZ. Les espèces de sauterelles ont été détectées en attaquant les cultures de maïs. Les opérations de contrôle ont été empêchées dans certaines zones en raison des inondations.

Quelea (QQU): des épidémies de QQU ont été signalées en avril dans les régions de Dodoma, Shinyanga et Singida en Tanzanie où l'on a vu attaquer des cultures de riz et de sorgho. Les services de santé végétale du ministère de l'Agriculture, de la Sécurité alimentaire et des Coopératives ont poursuivi les opérations d'enquête pour détecter les sites de repos. Le ravageur n'a pas

été signalé au Kenya, au Malawi, au Mozambique, en Zambie et au Zimbabwe au cours de ce mois (DLCO-EA, IRLCO-CSA).

Note: IRLCO-CSA a signalé que le **Malawi** par l'entremise de la **FAO** / Malawi et de l'**USAID** fournissait USD 77 796 pour contrôler NSE dans les plaines du lac Chilwa / Lac Chiuta en utilisant un biopesticide. La **Zambie** a également fourni 480 000 USD pour permettre des opérations de sondage et de contrôle contre NSE dans Kafue Flats et Lukanga Swamps et la **Tanzanie** ont promis de mettre à la disposition des IRLCO-CSA des ressources pour les opérations de prospection et de contrôle. L'IRLCO-CSA apprécie les contributions et les promesses faites par ces États membres et les partenaires du développement et fait appel à d'autres pour suivre la tendance et fournir des ressources supplémentaires pour mener efficacement des opérations de sondage et de contrôle contre ces organismes multi-organismes transfrontaliers et prévenir les menaces qu'ils posent sur les aliments La sécurité et les moyens de subsistance des communautés rurales. Note de fin

Au cours du mois de mars, le conseiller technique principal pour les organismes nuisibles et les pesticides de l'USAID / OFDA a participé au dernier atelier interrégional de formation-atelier et aux réunions de discussion sur le système de gestion des stocks de pesticides financé par

plusieurs donateurs à Agadir, au Maroc. Des participants de 12 pays des régions CLCPRO et CRC, ainsi que les secrétaires exécutifs des deux commissions régionales et le directeur d'Agritech, Maroc, ont également assisté à l'événement. Des exercices pratiques sur le contrôle de la qualité des pesticides, ainsi qu'une formation théorique et pratique ont été fournis aux représentants des pays et des discussions approfondies ont eu lieu au cours de cet événement.

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 WOR and only a few spots were reported in southwestern and southeastern **Morocco**, central Sahara **Algeria**, northern **Mauritania** and northern **Mali** where light rain fell during the 2nd dekad of April and spotty green vegetation (*Schouvia sp.*) was reported. Light showers were reported in southwestern and extreme south of **Tunisia** during April, but overall unfavorable ecological conditions persisted (CNLA/Chad, CNLA/Mauritania, CNLAA/Morocco, CNLP/Mali, CNLA/Tunisia, FAO-DLIS, NCLC/Libya).

COR: Rainfall was reported on the Red Sea coasts in **Eritrea, Egypt, Saudi Arabia** and Tihama **Yemen** during the 2nd second fortnight of April. Light showers were reported on the Red Sea hills of **Sudan** and eastern **Ethiopia, Somalia** plateau and Hageissa, but ecological conditions remained unfavorable in most of the winter breeding areas. Ecological conditions are expected to continue improving in spring breeding areas in **Saudi Arabia** and perhaps the interior of **Yemen** where heavy rain fell during previous month and perhaps in April as well, but the latter could not be confirmed. Seasonal rains

will likely create favorable conditions for locusts to begin appearing and breed on small-scale during the forecast period (DLCO-EA, DLMCC/Yemen, DLMC/Oman, FAO-DLIS, PPD/Sudan).

EOR: Light shower occurred in spring breeding areas in southeastern **Iran** where good rains fell in February and March causing ecological conditions to improve, but the rest of EOR remained dry during April (FAO-DLIS).

NSE Outbreak Region: The seasonal rain is tapering off in the NSE outbreak regions in **Mozambique** and **Tanzania**, and only moderate to light rain (3.2 mm in Kafue Flats and 97.7 mm in Malagarasi) was recorded during April (IRLCO-CSA).

CAC: No update was received for CAC during April. However, ecological conditions are expected to have begun improving and locust activities are expected to have commenced in a few places and will continue further developing during the forecast period.

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: In **Mauritania**, the SGR situation remained generally calm during April and only some mature and immature adults were located in Tiris Zemmour in the north (total treated areas remained unchanged - 17,472 ha). Copulating adults were detected near irrigated areas in central Sahara in **Algeria** where hoppers and mature adults were controlled on 32 ha. In **Morocco**, survey operations in the south in Oued Sakia el Hamra and southeast in the Bouafra area and other locations detected low density (10-20/ha) immature and maturing solitary adults. No locusts were reported in Adra des Iforas and Timetrine in northern **Mali** or in other countries in the region during April (CNLA/Chad, CNLP/Mali, CNLAA/Morocco) (CNLA/Mauritania, CNLA/Libya, CNLA/Tunisia, FAO-DLIS).

Forecast: Small-scale breeding will likely occur near irrigated fields and increase locust numbers in **Algeria**. Limited scale

breeding is also likely in southern **Morocco**. A few adults will begin heading southward from northern **Mauritania** (the country deployed a survey team to north of the country at the end of April to assess the locust situation and predict the potential risk for the next breeding season). In **Mali**, low numbers of adults may appear in Tamesna, Tietrine, and wadis in Adrar des Iforas and a similar situation is likely in northern **Niger** during the forecast period.

(CNLA/Chad, CNLP/Mali, CNLAA/Morocco) (CNLA/Mauritania, CNLA/Libya, CNLA/Tunisia, FAO-DLIS).

SGR (Desert Locust) - COR: A few scattered solitary adults were detected in the southeastern coast of **Egypt** during April, but no locusts were detected during surveys in eastern **Ethiopia, Sudan, Saudi Arabia, or northern Somalia** or in Musandam and Bureimi regions in **Oman**. Survey operations were not possible during April in **Yemen** due to security reasons and no locusts were reported. No surveys were carried out and no locusts were reported in the rest of the COR during April (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 perhaps **Yemen** in areas where rainfall occurred during the last dekad of March or later. A few isolated adults may appear in areas of recent rainfall in **Ethiopia** and **Oman**, but the rest of COR will likely remain calm during the forecast period (DLCO-EA, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Sudan).

SGR - EOR: The SGR situation in the EOR remained calm and only a few scattered solitary adults were detected in

southeastern coast of **Iran** during April (DPPQS/India, FAO-DLIS).

Forecast: In EOR, limited-scale SGR activities are likely in spring breeding areas in southeastern **Iran**, but significant developments are not likely 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 situation remained a concern in **Malawi** (Lake Chilwa/Lake Chiuta plains, Mpatasanjoka); **Tanzania** (Ikuu Katavi plains, Malagarasi Basin and Rukwa plains) and in **Mozambique** (Buzi Gorongosa and Dimba plains) as the pest is expected to have fledged and forming swarms in some areas during April. In **Zambia**, large populations of NSE, LMM, and a grasshopper species (*Cataloipus spp*) were reported in Kafue Flats where aerial and ground control operations by IRLCO-CSA and farmers treated more than 5,520 ha, respectively during the previous months with financial assistance from the GoZ and FAO.

Forecast: NSE fledging is expected to have ended and swarms may have started forming in a few places and this will likely continue in the primary outbreak areas in **Malawi, Tanzania, Mozambique** and **Zambia**. Uncontrolled swarms will migrate out of the breeding areas and likely begin invading neighboring countries - **Zimbabwe, Botswana, Democratic Republic of Congo, Uganda, and Rwanda** during the coming months. IRLCO-CSA argues

that unless necessary resources are made available, the organization and its PPD partners will not be able to track and control the swarms which will otherwise destroy cropping and pasture areas.

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 it requests to 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. Moisture associated with the cyclone will likely favor the development of locusts.

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): No update was received during April.

Forecast: Ecological conditions are expected to have begun improving and limited locust activities may have started appearing in a few places. The Aral Sea region, where large-scale egg laying of LMI occurred during 2016, will likely experience massive hatching and hopper developments in spring 2017. Other breeding areas such as northern

Afghanistan where undisturbed prolonged egg laying exploited the ongoing insecurity situation in the region will likely experience increased locust activities in 2017. 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 outbreaks were reported in Kwale, Kilifi and Taita Taveta counties in Coast Province in **Kenya**. The pest was reported damaging maize and pasture. Control was carried out by the affected farmers with technical assistance from Ministry of Agriculture extension staff (IRLCO-CSA).

Forecast: AAW outbreak season has come to an end in **Malawi, Mozambique, Zambia** and **Zimbabwe** and significant developments are not expected during the forecast period. However, the pest will continue its northward journey to eastern Africa – **Kenya** and northern **Tanzania** and likely start appearing in southern **Ethiopia** where high trap catches have been already reported in some areas which are already being battered by the ravaging fall armyworm (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/View/index.html?appid=9d2ab2f918284595819836d1f16a526f>

Fall armyworm (Spodoptera frugiperda) (SFR - FAW): SFR, a fast spreading, voracious multi-crop pest, that was previously reported causing damage to maize crops in dozens of countries across southern, southcentral, the greater lake and eastern Africa, including **Swaziland, South Africa, Botswana, DRC, Namibia, Zambia, Zimbabwe, Malawi, Mozambique, Uganda, Rwanda, Tanzania, Nigeria, Togo,**

Benin, Sao Tome and Principe, Cameroon and Ghana, has been reported in **Kenya, Ethiopia** and **Angola**, and may have reached a war torn **South Sudan**.

In **Ethiopia**, the pest was first detected in irrigated crops in SNNPR during the 1st week of March and by mid-April, the pest was reported attacking maize, rice, taro and Enset plants (false banana, the roots of which are the main source of staple food for millions of people in SNNPR of Ethiopia). Towards late April crop damage was reported on some 22,900 ha in 73 Weredas (districts) in 13 Zones in the SNNP Region and Oromia and continued spreading. Surveillance and control efforts are being launched by MoA and affected farmers (48,300 farmers participated in preventive and curative interventions, employing hand pick and pesticides). MoA/ETH estimates crop losses of up to 15–30% in SNNP and 5–10% in Oromia where some localities reported 100% loss). The pest is following the wind direction and spreading northward and is expected to threaten crops in the central and northern parts of the country during the forecast period. GoE is appealing to its partners for assistance (PPD/Ethiopia).

In **Uganda**, AAW and FAW outbreaks were reported in 20 districts across the country and continued spreading to other areas (MoA/ **Uganda** estimates a potential annually loss of some 450,000 MT of maize to unabated SFR. The pest has caused complete crop damage needing replanting in some localities in some countries. Control operations are being undertaken by the affected farmers with technical and material

assistance from respective MoAs in affected countries. In **Uganda**, AAW and FAW outbreaks were reported in twenty (20) districts across the Country and continued spreading to others during late April. The MoA extension staff and affected farmers were spraying with insecticides (MoA/Uganda estimates a potential annually loss of some 450,000 MT of maize to unabated SFR (DLCO-EA, OCHA).

In **Kenya**, SFR was reported attacking late planted maize crops on more than 100,000 ha in 18 Counties. In **Tanzania**, SFR was reported attacking maize crops in 7 regions. In **Malawi** and **Zimbabwe**, the pest was reported attacking irrigated maize crops (DLCO-EA, IRLCO-CSA).

SFR has been reported attacking maize crops in **Ghana** and neighboring countries in central-west Africa.

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 SFR damage has been reported on more than 300,000 ha of maize in sub-Saharan Africa just over the past five months. The Note estimates a predicted loss of more than USD 13.38 billion in maize, sorghum, rice and sugarcane – mostly rice paddy, maize and sugarcane

Maize is cultivated on over tens of million ha in Africa and SFR is a major threat and can cause more damage to maize crops over vast areas than the desert locust which does not reach some of the maize growing wetter regions of Africa.

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 and may even reach beyond sub-Saharan Africa. 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 winds.

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

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.

FAO in collaboration with national, regional, international entities convened a regional meeting in February in Harare, Zimbabwe where transboundary disease and pests, including FAW were discussed.

As a follow-up to the Harare meeting and in recognition of the pest's ability to threaten food security and livelihoods of tens of millions of people across the continent, a technical and a stakeholder consultation meetings were held in Nairobi, Kenya during the last week of April 2017.

Technical experts from different fields of research, development and pest management sectors presented detailed accounts of the pest, including its biology, phenology, habitat and host preference, monitoring and as well as control and management interventions.

Affected countries reported on the SFR situation in their respective countries and experts shared their experiences with participants. Several actionable items were identified and lead organizations were designated to coordinate and explore means and ways to implement them.

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

Locust outbreaks were reported in **Bolivia** during March, but updates were not available at the time this report was compiled.

Quelea (QQU): QQU outbreaks were reported in Dodoma, Shinyanga and Singida Regions in **Tanzania** where they were seen attacking rice and sorghum. Plant Health Services of the MoAFSC continued survey operations to detect roosting sites. No QQU outbreaks were reported in **Kenya, Mozambique, Malawi, Zambia** or **Zimbabwe** during this month (IRLCO-CSA).

Forecast: QQU birds are likely to be a problem to small grain cereal growers in the Rift Valley, Eastern and Nyanza Counties of **Kenya**, Kilimanjaro, Morogoro, Dodoma Singida and Shinyanga regions of **Tanzania** and to Irrigated wheat in **Zimbabwe** (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 April.

(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 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

In April control operations treated 32 ha in **Algeria** against SGR and tens of thousands of ha were treated against SFR in several sub-Saharan African countries.

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 l)
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	41,585 ^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>)
AELGA	Assistance for Emergency Locust Grasshopper Abatement
AFCS	Armyworm Forecasting and Control Services, Tanzania
AfDB	African Development Bank
AME	<i>Anacridium melanorhodon</i> (Tree Locust)
APLC	Australian Plague Locust Commission
APLC	Australian Plague Locust Commission Bands groups of hoppers marching pretty much in the same direction
CAC	Central Asia and the Caucasus
CBAMFEW	Community-based armyworm monitoring, forecasting and early warning
CERF	Central Emergency Response Fund
CIT	<i>Calliptamus italicus</i> (Italian Locust)
CLCPRO	Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)
CNLA(A)	Centre National de Lutte Antiacridienne (National Locust Control Center)
COR	Central SGR Outbreak Region
CPD	Crop Protection Division
CRC	Commission for Controlling Desert Locust in the Central Region
CTE	<i>Chortoicetes terminifera</i> (Australian plague locust)
DDLCC	Department of Desert Locust Control
DLCO-EA	Desert Locust Control Organization for Eastern Africa
DLMCC	Desert Locust Monitoring and Control Center, Yemen
DMA	<i>Dociostaurus maroccanus</i> (Moroccan Locust)

DPPQS	Department of Plant Protection and Quarantine Services, India	LMC	<i>Locusta migratoriacapito</i> (Malagasy locust)
DPV	Département Protection des Végétaux (Department of Plant Protection)	LMM	<i>Locusta migratoria migratorioides</i> (African Migratory Locust)
ELO	EMPRES Liaison Officers –	LPA	<i>Locustana pardalina</i>
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases	MoAFSC	Ministry of Agriculture, Food Security and Cooperatives
EOR	Eastern SGR Outbreak Region	MoAI	Ministry of Agriculture and Irrigation
ETOP	Emergency Transboundary Outbreak Pest	MoARD	Ministry of Agriculture and Rural Development
Fledgling	immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed	NALC	National Agency for Locust Control
GM	GreenMuscle® (a fungal-based biopesticide)	NCDLC	National Center for the Desert Locust Control, Libya
ha	hectare (= 10,000 sq. meters, about 2.471 acres)	NOAA (US)	National Oceanic and Aeronautic Administration
ICAPC	IGAD's Climate Prediction and Application Center	NPS	National Park Services
IGAD	Intergovernmental Authority on Development (Horn of Africa)	NSD	Republic of North Sudan
IRIN	Integrated Regional Information Networks	NSE	<i>Nomadacris septemfasciata</i> (Red Locust)
IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa	OFDA	Office of U.S. Foreign Disaster Assistance
ITCZ	Inter-Tropical Convergence Zone	PBB	Pine Bark Beetle (<i>Dendroctonus</i> sp. – true weevils)
ITF	Inter-Tropical Convergence Front = ITCZ)	PHD	Plant Health Directorate
FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service	PHS	Plant Health Services, MoA Tanzania
Hoppers	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)	PPD	Plant Protection Department
JTWC	Joint Typhoon Warning Center	PPM	Pest and Pesticide Management
Kg	Kilogram (~2.2 pound)	PPSD	Plant Protection Services Division/Department
L	Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)	PRRSN	Pesticide Risk Reduction through Stewardship Network
LCC	Locust Control Center, Oman	QQU	<i>Quelea Qulelea</i> (Red Billed <i>Quelea</i> 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

- PBB Pine Bark Beetle*
- PSPM Preparedness, Strategic Planning and Mitigation (formerly known as Technical Assistance Group - TAG)*
- 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.*
- USAID the United States Agency for International Development*
- UN the United Nations*
- WOR Western SGR Outbreak Region*
- ZEL Zonocerus elegans, the elegant grasshopper*
- ZVA Zonocerus variegatus, 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...*

Who to contact for more information:

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