

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Update for August, 2016 with a
Forecast till mid-October, 2016**
[Un résumé en français est inclus](#)

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹) situation continued developing in the central outbreak region in August. In **Yemen** swarms were observed on the Red Sea coasts, in the interior of the country and the Gulf of Aden. A few small swarms from **Yemen** were reported reached **Djibouti**, eastern **Ethiopia** and the northern **Somalia** and breeding. Scattered adult locusts were present in the interior of **Sudan** and on the Red Sea coastal plains in **Saudi Arabia**. Elsewhere the situation remained calm during August.

More groups and swarms are likely to form in **Yemen** and move to the Red Sea coast, **Saudi Arabia** and the Horn of Africa and breed and cause locust numbers to increase. Breeding will also occur in the interior of **Sudan**, **Eritrea**, eastern **Ethiopia** and northwestern **Somalia** during the forecast period.

In the western outbreak region, low numbers of scattered solitary adults were reported in southern **Mauritania** and **Chad**. A similar situation is likely in northern **Mali** and **Niger**, but could

not be confirmed. With ecological conditions in the summer breeding progressively improving, locust numbers will increase in the western outbreak region during the forecast period.

In the eastern outbreak region, a mature swarm from **Yemen** was reported on the Uthal coast in central-southwestern **Pakistan** where local breeding was in progress. Some scattered mature adults were present in Cholistan **Pakistan** and adjacent areas of Rajasthan, **India** during August.

Small-scale breeding may continue in **Pakistan** and along the borders with **India** during the forecast period.

Active surveillance and timely preventive interventions are critical to abate any major threats.

It is worth noting that during the 2003-05 locust upsurges, locust-affected frontline countries in Sahel West Africa and North Africa lacked well-equipped, well-organized autonomous locust control units. The regional organization that was mandated coordination and strengthening regional collaborations was struggling to build its own capacity. Thanks to the efforts and commitments of national authorities and the supports from regional and international communities, development and humanitarian donors, including USAID, FAC, FAO, AFDB and many more, frontline

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

countries, i.e., Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal and Tunisia, have since established fully operational autonomous locust management and control entities at the national level. These entities have been able to abate several locust threats, including a potentially devastating locust emergency in 2012 and again in 2015. The coordination and support that CLCPRO has been providing to the frontline countries remain invaluable.

Red (Nomadic) Locust (NSE): NSE remained a cause for concern in **Tanzania, Zambia and Malawi** where swarms continued developing and persisted during August. In **Malawi**, survey and control operations were carried out with financial assistance from GoM (IRLCO-CSA).

Forecast: Swarms will likely move from breeding areas to invasion areas and impact food security and livelihoods of vulnerable populations.

IRLCO-CSA appeals for further support from Member States to launch timely survey and control interventions to avert any crop damage in a region that has already been hit by an unprecedented drought (IRLCO-CSA, OFDA/AELGA).

Madagascar Migratory Locust (LMC): No update was received at the time this report was compiled and the 3-year campaign had ended.

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts, Central Asia and the Caucasus (CAC): No update was received at the time this report was compiled. DMA, CIT and LMI activities are expected to have been progressively mating and laying in some countries and diminishing in others during August. All species are expected to gradually disappear during the end of and after the forecast period before they re-emerge next spring.

USAID/OFDA senior pest and pesticide management specialist visited joint locust survey operations in Georgia during the second dekad of May. He travelled with the team to Kakheti District in southern and southeastern parts of Georgia along the Caucasus Mountains adjacent to Azerbaijan and Russian Federation.



During the survey operations, the technical advisor observed early hatching of locusts (see picture above, Belayneh, 5/2016).

Tree locust (*Anacridium spp*): Tree locust outbreaks were reported in the Turkana County in **Kenya** where the pest is reported infested some 9,250

ha of *Acacia* trees. The Ministry of Agriculture was preparing to undertake control operations at the time this update was compiled.

African Armyworm (AAW): Ground control operations were launched against a secondary outbreak of AAW in 5 districts in northern **Ethiopia** where 2,882 ha of Sorghum and Teff crops were protected against the pest.

Quelea (QQU): QQU outbreaks were controlled by aerial operations during August in Narok and Kisumu, **Kenya** counties and in southern **Ethiopia**. QQU outbreaks were also reported in the Coastal Region of **Tanzania** and Mashonaland Central, East and West provinces in **Zimbabwe** threatening late planted wheat crop. The situation is being closely monitored.

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

RÉSUMÉ

Le (*Schistoseca gregaria* - SGR) situation relative au Criquet pèlerin a poursuivi le développement dans la région de l'épidémie centrale en Août. Au Yémen essaims ont été observés sur les côtes de la mer Rouge,

l'intérieur du pays et dans le golfe d'Aden. Quelques petits essaims en provenance du Yémen ont été signalés ont atteint Djibouti, est de l'Ethiopie et les frontières du nord de la Somalie et ont commencé la pose et la formation de bandes larvaires. aillés épars étaient présents à l'intérieur du Soudan et dans les plaines côtières de la mer Rouge, en Arabie Saoudite. Ailleurs la situation est restée calme en Août.

Plus de groupes et essaims sont susceptibles de se former au Yémen et passer à la côte de la mer Rouge, en Arabie Saoudite et dans la Corne de l'Afrique et se reproduire et provoquer augmentation des effectifs acridiens. La reproduction se produira également à l'intérieur du Soudan, l'Erythrée, l'Ethiopie orientale et nord-ouest de la Somalie au cours de la période de prévision.

Dans la région de l'épidémie occidentale, de faibles effectifs d'aillés solitaires épars ont été signalés dans le sud de la Mauritanie et le Tchad. Une situation similaire est probable dans le nord du Mali et du Niger, mais n'a pas pu être confirmée. Avec des conditions écologiques dans la reproduction estivale progressivement l'amélioration, les effectifs acridiens augmenteront dans la région de l'épidémie occidentale pendant la période de prévision.

Dans la région de l'éclosion de l'Est, un essaim mature du Yémen a été rapporté est arrivé sur la côte sud-

ouest du Pakistan Uthal dans des œufs qui éclosent posé et formé trémie au cours Août. Des ailés matures épars étaient présents dans le Cholistan Pakistan et les zones adjacentes de Rajasthan, en Inde.

Une reproduction à petite échelle peut se poursuivre au Pakistan et le long des frontières avec l'Inde au cours de la période de prévision.

La surveillance active et les interventions préventives en temps opportun sont essentielles pour réduire les menaces majeures.

Il est à noter qu'au cours de 2003-05 recrudescences acridiennes, les pays de première ligne acridienne touchées au Sahel en Afrique occidentale et en Afrique du Nord manquaient bien équipées, autonomes unités de lutte antiacridienne bien organisés. L'organisation régionale qui a été chargé de la coordination et le renforcement de la collaboration régionale a du mal à construire sa propre capacité. Merci aux efforts et aux engagements des autorités nationales et les supports des communautés régionales et internationales, le développement et les donateurs humanitaires, y compris l'USAID, FAC, FAO, BafD et beaucoup d'autres, les pays de première ligne, à savoir, l'Algérie, le Tchad, la Libye, le Mali, la Mauritanie, Maroc, le Niger, le Sénégal et la Tunisie, ont depuis établi des entités de gestion et de lutte antiacridienne autonomes pleinement opérationnels au niveau

national. Ces entités ont été en mesure de diminuer plusieurs menaces acridiennes, y compris une urgence acridienne potentiellement dévastateur en 2012 et de nouveau en 2015. La coordination et le soutien que CLCPRO a fourni aux pays de première ligne restent une valeur inestimable.

Rouge (Nomadic) Locust (NSE):

NSE est resté une source de préoccupation en Tanzanie, en Zambie et au Malawi, où des essaims développés et ont persisté en Août. Au Malawi, les opérations de prospection et de lutte ont été réalisées avec l'aide financière du GoM (IRLCO-CSA).

Prévisions: Les essaims vont probablement se déplacer des zones de reproduction dans les zones d'invasion et la sécurité alimentaire de l'impact et les moyens de subsistance des populations vulnérables.

IRLCO CSA appels pour un soutien supplémentaire des États membres à lancer des interventions de l'enquête et de contrôle en temps opportun pour éviter tout dommage des cultures dans une région qui a déjà été frappé par une sécheresse sans précédent (IRLCO-CSA, OFDA / AELGA).

Locust Madagascar migratrices

(LMC): Aucune mise à jour a été reçue au moment où ce rapport a été compilé et la campagne de 3 ans avait pris fin.

Italien (CIT), du Maroc (DMA), d'Asie migrants (IMT) Criquets, l'Asie centrale et du Caucase (CAC): Aucune mise à jour ont été reçues au moment où ce rapport a été compilé. activités DMA, CIT et IMT devraient avoir été progressivement diminuer dans certains pays et a continué l'accouplement et la pose dans d'autres cours Août. Toutes les espèces devraient disparaître progressivement pendant et après la période de prévision avant qu'ils ne réapparaissent au printemps prochain.

USAID / OFDA spécialiste de la gestion des ravageurs et des pesticides supérieurs a visité des opérations conjointes de l'enquête acridienne en Géorgie au cours de la deuxième décennie de mai. Il a voyagé avec l'équipe à Kakheti District dans le sud et sud-est de la Géorgie le long des montagnes Caucase adjacentes à l'Azerbaïdjan et la Fédération de Russie. Au cours des opérations d'enquête, le conseiller technique observé début éclosion du DMA (voir les photos ci-dessus, Belayneh, 5/2016 - asticots blanchâtres 1er larves de stade 3 et points noirs sur la roche sont 2e larves de stade).

Criquet arbre (*Anacridium spp*): les foyers d'arbre de ont été signalés dans le comté de Turkana au Kenya où le ravageur est signalé infestant quelque 9.250 ha d'arbres Acacia. Le ministère de l'Agriculture se prépare à entreprendre des opérations de contrôle au moment de cette mise à jour a été compilé.

Chenille de Légionnaire africaine (AAW): Les opérations de lutte terrestre ont été lancées contre 2 AAW génération dans 5 districts dans la région d'Amhara en Ethiopie où 2882 ha de cultures de sorgho et de teff ont été protégés.

Quelea (qqu): les épidémies de qqu ont été contrôlés par les opérations aériennes au cours de Août à Narok et Kisumu, comtés du Kenya et dans le sud de l'Ethiopie. épidémie qqu a également été signalé dans la région côtière de la Tanzanie. populations de qqu significatives ont été rapportées dans les provinces du Mashonaland Central, Est et Ouest au Zimbabwe menace la récolte de blé fin planté. La situation est surveillée de près.

USAID / OFDA / PSPM surveille ETOPS de près grâce à son réseau avec PPDs / DPV, unités ravageurs migrants et les organisations internationales et régionales, y compris la FAO, la CLCPRO, CRC, DLCO-EA, IRLCO-CSA. Il fournit des mises à jour en temps opportun et de conseils à l'AC, le personnel de terrain, les partenaires et les autres aussi souvent que nécessaire. Résumé 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 be able 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 partners 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 is sponsoring project activities through the UN/FAO to help strengthen/re-build national and regional capacity to prevent and control the threats the locusts pose to the 25 million plus vulnerable people that eke a living from agriculture and livestock in CAC. The program is on track and it has enabled collaboration among neighboring countries where joint monitoring, surveillance, reporting and preventive interventions have been realized to minimize the threats of ETOPs to food security and livelihoods of vulnerable population.

Note: ETOP SITREPs can be accessed on USAID Pest and Pesticide Management website: USAID/OFDA PPM Website

Weather and Ecological Conditions

Western Outbreak region: Ecological conditions were favorable in Sahel West Africa resulting from good rains from June, July and August.

Central Outbreak Region: Moderate to heavy rains fell in **Yemen** and parts of the Horn of Africa creating favorable ecological conditions for locusts to persist and breed



(see picture, DLMCC/Yemen).

Eastern Outbreak Region: The eastern outbreak region received good monsoon rains.

NSE Outbreak Region

Dry and warm weather prevailed in NSE outbreak areas where vegetation had dried except in extensively flooded areas in Wembere plains and Malagarasi Basin in **Tanzania**. Extensive vegetation burning continued in outbreak areas in **Malawi, Mozambique** and **Zambia** significantly reducing locust habitat and forcing them to move out to invasion areas in search of food and shelter (IRLCO-CSA).

In CAC, warmer and dry weather prevailed in most of the locust breeding areas during late July and August with the exception of some rain in Kazakhstan and some other places. Above normal temperatures persisted across Central Asia and eastern Kazakhstan.

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 **Pine Bark Beetle** has been escalating in the western hemisphere due to the rise in winter temperatures and decreased precipitation. Warmer weather means lesser egg/grab death from severe*

cold temperatures and less precipitation means weaker trees that succumb to the beetle attack.

*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 habitats remain critical to help avoid and minimize potential damages to crops, pasture, livestock and reduce subsequent negative impacts on food security and livelihoods of vulnerable populations and communities. **End note.***

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

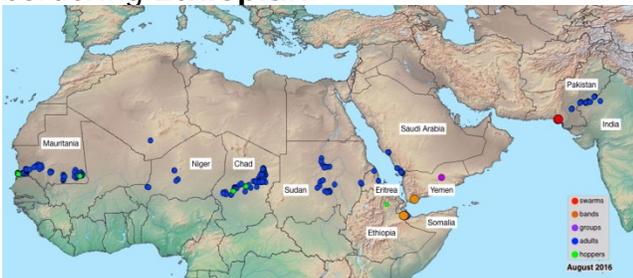
SGR – Western Outbreak Region: Low numbers scattered solitary adults were reported in southern **Mauritania** and **Chad**. A similar situation may be present in northern **Mali** and **Niger**, but could not be confirmed due to the ongoing insecurity situation. No crop or pasture damage was reported in the frontline countries and the situation remained calm in other outbreak countries in the region during this period.

Forecast: Small-scale breeding will likely commence in areas where seasonal rains have commenced and adult locusts are present in southern and southeastern **Mauritania**, northern **Niger**, northern **Mali** and northern **Chad** and extreme

southern **Algeria** during the forecast period (CNLA/Mauritania, CNLAA/Morocco, FAO-ECLO, NALC/Chad, NLCC/Libya, OFDA/AELGA).

SGR (Desert Locust) - Central

Outbreak Region: The SGR situation remained serious during August in the Central Outbreak Region. In **Yemen**, 2nd generation breeding occurred on the Gulf of Aden and the interior of the country and caused new hopper bands to appear. A few small swarms from **Yemen** arrived along the borders of **Djibouti**, **Ethiopia** and northern **Somalia** during late July into August. Egg laying, hatching and hopper formations were reported in August in eastern **Ethiopia** where ground survey by PPD covered more than 1,100 ha. A small, medium density swarm, mature adults, hatchings and 2nd to 5th instar hoppers were detected in different locations in the Afar Region of **Ethiopia** during August. Early to late instar hoppers were also detected on the northwest coastal plains of Somalia where 2nd and 5th instar hopper bands and isolated mature solitary adults were present on the escarpment in areas bordering **Ethiopian**.



SGR sites in August, FAO-DLIS, 9/2016.

An unconfirmed report of small mature swarms moving back and forth across the **Ethiopian** border was reported earlier. In **Sudan**, scattered solitary mature adults were present near Kassala and the Nile Valley. Immature and mature adults were also detected in North Kordofan and White Nile States where surveys

commenced on July 13th and covered thousands of ha in the summer breeding areas in the Northern, River Nile, White Nile and North Kordofan States and west of the Red Sea Hills during the 2nd dekad of the month. A few isolated immature and mature solitary adults were detected at several locations on the northern Red Sea coastal areas in **Eritrea**. No crop or pasture damage has been reported in the outbreak countries and the situation remained calm in other countries in the region during the reporting month (DLCO-EA, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Sudan).

Forecast: Given the presence of favorable conditions, further breeding and hopper and swam developments will likely continue in the region. In **Yemen**, locusts will move to the highlands towards the Red Sea coasts as well as adjacent areas in **Saudi Arabia**. Some may also reach the Horn of Africa and begin breeding and increase locust numbers. Small-scale breeding will likely commence in the interior of **Sudan** and on the Red Sea coasts of **Saudi Arabia** and cause locust numbers to increase during the forecast period (In 2007, several swarms developed in **Yemen** and crossed the Red Sea and invaded eastern **Ethiopia**, northern **Somalia**, and **Djibouti** and later extended as far as northern **Kenya** and Western **Ethiopia** threatening crops and pasture over vast areas).

SGR - Eastern Outbreak Region: A mature swarm from **Yemen** arrived in early July on the central southern coast of **Pakistan** where local breeding had already formed hopper groups and ground teams controlled 410 ha. Gregarious and scattered mature adults were detected in Cholistan **Pakistan**. A

few gregarious mature adults were also detected in Rajasthan **India**, but significant populations were not observed in the Scheduled Desert Areas during this month (DPPOS/India, FAO-DLIS).

Forecast: Small-scale breeding will likely continue in the summer breeding areas along the **Indo-Pakistan** borders and increase locust numbers during the forecast period.

Vigilance, timely reporting and preventive interventions remain critical to abate any major developments that could pose serious threats to crops and pasture (DLCO-EA, DLMCC/Yemen, DPPOS/India, FAO-DLIS, LCC/Oman, OFDA/AELGA, PPD/Sudan).

Red (Nomadic) Locust (NSE): NSE remained a cause for concern in **Tanzania, Zambia** and **Malawi** where swarms developed and persisted during August. Survey teams comprised of IRLCO-CSA and MoA/**Malawi** staff detected low to medium density (up to 20 insects/m²) swarms over 7,000 ha in Lake Chilwa/Lake Chiuta plains and Mpatsanjoka Dambo in **Malawi** during August. Control operations were carried out with financial assistance by the Government of **Malawi**. In **Tanzania**, NSE swarms persisted in Malagarasi Basin over an estimated area of 12,000 ha. The pest was also reported in Buzi-Gorongosa and Dimba plains in **Mozambique** and Kafue Flats in **Zambia**, but no information was received on crop/pasture damage at the time this report was compiled (IRLCO-CSA, OFDA-AELGA).

Forecast: The NSE situation will likely diminish in Malagarasi Basin in **Tanzania**, Buzi Gorongosa and Dimba plains in **Mozambique** and Kafue Flats in **Zambia** where extensive vegetation burning

continues forcing locusts to congregate and form swarms and groups and migrate to other locations in search of food and shelter. If left unabated the pest will significantly impact food security and livelihoods of vulnerable populations in areas that have already suffered from prolonged drought. IRLCO-CSA is seeking further support from Member States to undertake timely survey and control interventions (IRLCO-CSA, OFDA/AELGA).

Swarms of the **African Migratory Locust**, *Locusta Migratoria migratorioides* (LMI) persisted in Nsanje district in southern **Malawi** where 250 ha of sugar cane field sustained a significant damage. Given the presence of favorable conditions, LMI will likely persist and perhaps breed. IRLCO-CSA continues to monitor the situation within its reach to determine control operations (IRLCO-CSA).

Madagascar Migratory Locust (LMC):

The 3 year project has ended and no additional update was available at the time this report was compiled.

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

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): No update was available at the time this report was compiled. However, given the favorable weather conditions that persisted over the past months, the three locust species and grasshoppers appear to have taken advantage of the change in weather and associated ecological improvements.

Forecast: Locust activities will progressively come to an end in a number of CAC countries during the forecast period although others will

continue with their final stages of development. LMI is expected to persist in Russia, Kazakhstan and Uzbekistan through the forecast period where large-scale egg laying occur in the Aral Sea region paving the way for massive hatching the hopper developments during next spring. Some breeding areas, e.g., northern Afghanistan, may also experience more locust activities in 2017 due to undisturbed prolonged egg laying resulting from ongoing insecurity situation. Vigilance, marking egg laying grounds remain essential to plan for the next campaign in 2017.



CAC countries affected by CIT, DMA and LMI species.

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.

Timor and South Pacific: No update was received from East Timor during August, but it is likely that ETOPs continued to be present.

African Armyworm (AAW): Ground control operations were carried in August against secondary AAW outbreaks in 5 districts in northern **Ethiopia** where 2,882 ha of Sorghum and *Teff* crops were protected against AAW attacks. A late received update indicated that local farmers and communities that were trained by **OFDA-funded CBAMFEW** project were monitoring, forecasting and reporting the presence of AAW in southeastern and northern regions of **Ethiopia**. As a result of the timely reporting by the **CBAMFEW** forecasters, MinAgri staff and local communities were able to avert what could have otherwise caused a serious damage to crops and pasture (PPD/Ethiopia, OFDA/AELGA).

Forecast: AAW season will likely commence in the southern outbreak region, but end in the central and northern outbreak regions during the forecast period. Frontline countries are advised to exercise readiness to launch monitoring and forecasting on a timely basis. CABMFEW forecasters must remain vigilant and report trap catches to concerned authorities on time to facilitate

rapid interventions (DLCO-EA, IRLCO-CSA, OFDA/AELGA).

Note: OFDA/PSPM continued developing and improving AAW information in both the SOR and COR. So far, printable and web-based maps have been developed for AAW outbreak and invasion countries in the central and southern regions (click here for the SOR maps):

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

Quelea (QQU): In **Ethiopia**, DLCO-EA-lead aerial operations controlled QQU outbreaks in the southern part of the country. The aerial operations also controlled large numbers of QQU in Narok and Kisumu counties in **Kenya** during August. In **Tanzania**, QQU outbreaks were reported in the Coastal Region. Significant QQU bird populations were also reported in Mashonaland Central, East and West provinces in **Zimbabwe** where the birds posed a threat to late planted wheat crops. The situation is being closely monitored. The situation remained calm in other frontline/invasion countries during this period (DLCO-EA, IRLCO-CSA, PPD/Ethiopia).

Forecast: QQU birds will likely persist in **Kenya**, but diminish in other IRLCO and DLCO countries during the forecast period. Member States are advised to remain vigilant and share QQU sightings on a timely fashion to avert crop damage.

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 update was received on rodent outbreaks in August. However, these pests are a constant threat to crops in the field as well as storage and must be regularly monitored and abated.

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

Ethiopia and **Pakistan** treated 208 and 401 ha, respectively during August. A late received report indicated that close to 1.8 million ha were treated against the three species of locust in CAC during July and control operations continued during August in some countries in the region.

Note: SGR invasions countries in West and North West Africa reported large inventories of obsolete stocks, some dating as far back as 2003-05 locust campaigns and even earlier than that. Countries in Central Asia and the Caucasus also carry large stocks of obsolete pesticides that date as far back as the old Soviet era. Safe disposal of these stocks requires considerable resources, but can significantly minimize

health risks and environmental pollution associated with the stocks. **End note.**

Note: A Sustainable Pesticide Stewardship (SPS) can strengthen the 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/AELGA encourages exploring 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 3. ETOP Pesticide Inventory in Frontline Countries during March, 2016

Country	Quantity (l/kg)*
Algeria	1,189,349~
Chad	40,300
Egypt	68,070~ (18,300 ULV, 49,770 I)
Eritrea	18,250~ + 20,000 ^D
Ethiopia	9,712~
Libya	25,000~
Madagascar	206,000~ + 100,000 ^D
Mali	27,000
Mauritania	26,000 ^{DM}
Morocco	3,491,025 ^D
Niger	75,800~
Oman	10,000~
S. Arabia	100,000~
Senegal	156,000~
Sudan	171,780~

Tunisia	68,514 obsolete
Yemen	41,635 ^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 = <i>GreenMuscle</i> 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	<i>Commission de Lutte Contre le Criquet Pèlerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)</i>	ICAPC	<i>IGAD's Climate Prediction and Application Center</i>
CNLA(A)	<i>Centre National de Lutte Antiacridienne (National Locust Control Center)</i>	IGAD	<i>Intergovernmental Authority on Development (Horn of Africa)</i>
COR	<i>Central SGR Outbreak Region</i>	IRIN	<i>Integrated Regional Information Networks</i>
CPD	<i>Crop Protection Division</i>	IRLCO-CSA	<i>International Red Locust Control Organization for Central and Southern Africa</i>
CRC	<i>Commission for Controlling Desert Locust in the Central Region</i>	ITCZ	<i>Inter-Tropical Convergence Zone</i>
CTE	<i>Chortoicetes terminifera (Australian plague locust)</i>	ITF	<i>Inter-Tropical Convergence Front = ITCZ)</i>
DDLC	<i>Department of Desert Locust Control</i>	FAO-DLIS	<i>Food and Agriculture Organizations' Desert Locust Information Service</i>
DLCO-EA	<i>Desert Locust Control Organization for Eastern Africa</i>	Hoppers	<i>young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)</i>
DLMCC	<i>Desert Locust Monitoring and Control Center, Yemen</i>	JTWC	<i>Joint Typhoon Warning Center</i>
DMA	<i>Dociostaurus maroccanus (Moroccan Locust)</i>	Kg	<i>Kilogram (~2.2 pound)</i>
DPPQS	<i>Department of Plant Protection and Quarantine Services, India</i>	L	<i>Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)</i>
DPV	<i>Département Protection des Végétaux (Department of Plant Protection)</i>	LCC	<i>Locust Control Center, Oman</i>
ELO	<i>EMPRES Liaison Officers –</i>	LMC	<i>Locusta migratoriacapito (Malagasy locust)</i>
EMPRES	<i>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases</i>	LMM	<i>Locusta migratoria migratorioides (African Migratory Locust)</i>
EOR	<i>Eastern SGR Outbreak Region</i>	LPA	<i>Locustana pardalina</i>
ETOP	<i>Emergency Transboundary Outbreak Pest</i>	MoAFSC	<i>Ministry of Agriculture, Food Security and Cooperatives</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>	MoAI	<i>Ministry of Agriculture and Irrigation</i>
GM	<i>GreenMuscle® (a fungal-based biopesticide)</i>	MoARD	<i>Ministry of Agriculture and Rural Development</i>
ha	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>	NALC	<i>National Agency for Locust Control</i>
		NCDLC	<i>National Center for the Desert Locust Control, Libya</i>
		NOAA (US)	<i>National Oceanic and Aeronautic Administration</i>
		NPS	<i>National Park Services</i>
		NSD	<i>Republic of North Sudan</i>
		NSE	<i>Nomadacris septemfasciata (Red Locust)</i>
		OFDA	<i>Office of U.S. Foreign Disaster Assistance</i>

PBB *Pine Bark Beetle (Dendroctonus 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 *Quelea Qulelea (Red Billed Quelea bird)*

SARCOF *Southern Africa Region Climate Outlook Forum*

SPB *Southern Pine Beetle (Dendroctonus frontalis) – true weevils*

SGR *Schistoseca gregaria (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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