

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Update for July, 2016 with a
Forecast till mid-September, 2016
Un résumé en français est inclus**

SUMMARY

The **Desert Locust (SGR¹)** situation continued further developing in **Yemen** in July where more swarms and adult groups were forming in the interior of the country and some have moved to the central highlands and other to the southern coast. Survey and control operations continued to be undermined by the ongoing security situation and lack of resources.

Scattered isolated solitary adults were detected in northern **Sudan** and eastern **Ethiopia** and a similar situation is likely in western **Eritrea**.

Isolated adults were reported in summer breeding areas in Sahel West Africa and small-scale breeding commenced in southern **Mauritania**. A similar situation is likely in northern **Mali** and **Niger**. No locusts were reported elsewhere in the Western Outbreak Region (WOR) and a few scattered adults were reported along the **Indo-Pakistan** borders during July.

Forecast:

Swarms that formed in the interior of **Yemen** will continue moving to the

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

highlands, the Red Sea coasts and neighboring areas in **Saudi Arabia** and **Oman**. There is a slight risk that some swarms may reach the Horn of Africa during the forecast period. Breeding may commence in the interior of **Sudan** and western **Eritrea**, but elsewhere the situation will likely remain calm during the coming months.

Small-scale breeding is likely in areas of recent rainfall in southern **Mauritania**, northern **Mali**, **Niger**, **Chad** and southern Algeria and slightly increase locust numbers during the forecast period.

Small-scale breeding is likely in the summer breeding areas along the **Indo-Pakistan** borders 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 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 swarms were detected in southern **Malawi** and control operations treated 6,460 ha in **Tanzania** during July. Lack of resource undermined control operations on 12,000 ha in Malagarasi Basin in **Tanzania**. NSE swarms were reported in the Kafue Flats in **Zambia** and Buzi-Gorongosa and Dimba plains in **Mozambique** are expected to harbor swarms resulting from favourable breeding conditions.



A cloud of low flying NSE swarms in Nsanje, Malawi (July 2016, IRLCO-CSA)

There is a high risk of swarms escaping from **Tanzania, Malawi, Mozambique** and **Zambia** and invading neighboring areas. Urgent interventions are required to abate potential threats to food security of vulnerable populations.

Madagascar Migratory Locust (LMC):

No update was received at the time this report was compiled, but the final phase of the 3-year campaign was expected to have concluded by end of June, 2016.

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts,

Central Asia and the Caucasus (CAC): DMA, CIT continued to develop and breed in several countries in the CAC where control operations continued during July.

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 hatchings of the DMA.

African Armyworm (AAW):

The AAW season has ended in the southern outbreak region and no outbreaks were reported in the central and northern region during July no activities are expected during the forecast period.

Quelea (QQU): QQU bird outbreaks were reported in several regions in **Kenya** where control operations treated 23.5 million birds and sporadic outbreaks of QQU birds were reported in Matabeleland in **Zimbabwe** during July.

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 (SGR) situation relative au Criquet pèlerin a continué à développer davantage au Yémen en Juillet où plusieurs essaims et groupes d'adultes se formaient à l'intérieur du pays et certains se sont déplacés vers les hautes terres centrales et d'autres sur la côte sud. Les opérations de surveillance et de contrôle ont continué d'être compromis par la situation de sécurité en cours et en raison du manque de ressources.

Des ailés épars solitaires isolés ont été détectés dans le nord du Soudan et l'est de l'Ethiopie et une situation similaire est probable dans l'ouest de l'Erythrée.

Des ailés isolés ont été signalés dans les zones de reproduction estivale du

Sahel en Afrique de l'Ouest et une reproduction à petite échelle ont commencé dans le sud de la Mauritanie. Une situation similaire est probable dans le nord du Mali et du Niger. Aucun criquet n'a été signalé ailleurs dans la région de l'Ouest Outbreak (WOR) et quelques ailés épars ont été signalés le long des frontières indo-pakistanaïses en Juillet.

Prévoir:

Les essaims qui se forment dans l'intérieur du Yémen continuera à faire progresser vers les hauts plateaux, les côtes de la mer Rouge et des zones voisines en Arabie Saoudite et Oman. Il y a un léger risque que quelques essaims peuvent atteindre la Corne de l'Afrique au cours de la période de prévision. La reproduction peut débuter à l'intérieur du Soudan et de l'Erythrée occidentale, mais ailleurs la situation restera probablement calme au cours des prochains mois.

Une reproduction à petite échelle est probablement dans les zones de pluies récentes dans le sud de la Mauritanie, le nord du Mali, le Niger, le Tchad et le sud de l'Algérie et légèrement augmenter les effectifs acridiens au cours de la période de prévision.

Une reproduction à petite échelle est probablement dans les zones de reproduction estivale le long des frontières indo-pakistanaïses 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): essaims NSE ont été détectés dans le sud du Malawi et les opérations de lutte ont traité 6.460 ha en Tanzanie en Juillet. Le manque de ressources miné les opérations de contrôle sur 12.000 ha dans le bassin de Malagarasi en Tanzanie. essaims NSE ont été signalés dans la Kafue en Zambie et Buzi-Gorongosa et dimba plaines au Mozambique devraient abriter des essaims résultant de conditions favorables à la reproduction.

Un nuage de faibles essaims volant de NSE à Nsanje, Malawi (Juillet 2016, IRLCO-CSA) Il y a un risque élevé d'essaims échappant de la Tanzanie, le Malawi, le Mozambique et la Zambie et envahissent les zones voisines. interventions urgentes sont nécessaires pour réduire les menaces potentielles pour la sécurité alimentaire des populations vulnérables.

Locust Madagascar migratrices (LMC): Aucune mise à jour a été reçue au moment où ce rapport a été établi, mais il a été prévu la phase finale de la campagne de 3 ans d'avoir conclu d'ici la fin de Juillet 2016.

Italien (CIT), du Maroc (DMA), d'Asie migrants (IMT) Criquets, l'Asie centrale et du Caucase (CAC): DMA, CIT a continué à développer et se reproduire dans plusieurs pays dans le CAC, où les opérations de lutte se sont poursuivies au cours de Juillet.

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 hachures de la DMA.

Chenille de Légionnaire africaine (AAW): La saison AAW a pris fin dans la région sud de l'épidémie et aucun foyer n'a été signalé dans la région centrale et norther en Juillet aucune activité sont attendus au cours de la période de prévision.

Quelea (qqu): foyers d'oiseaux de qqu ont été signalées dans plusieurs régions du Kenya, où des opérations de lutte ont traité 23,5 millions d'oiseaux et des flambées sporadiques d'oiseaux qqu ont été signalés dans le Matabeleland au Zimbabwe en Juillet.

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: Seasonal rains which began in June in several places across northern Sahel from Mauritania to Sudan continued during July and created favorable conditions for locusts to begin breeding.

Central Outbreak Region: With the northerly migration of ITF in progress light to heavy rains fell in northern Sudan, the Horn of Africa, western lowlands in Eritrea, Yemen, southern mountains of Saudi Arabia and eastern Ethiopia during July.

Eastern Outbreak Region: In **India**, hot and cloudy weather with light to moderate rainfall was reported in Phalodi, Jodhpur, Jalore, Suratgarh, Nagaur and Palanpur area and moderate to heavy rainfall recorded in Churu area during the 1st dekad of July. However, no rainfall was reported near the Indo-Pak border of SDA. Greenness maps show patches of green vegetation in Nagaur, Jodhpur, Barmer, Churu, Jalore district and near the Indira Gandhi Canal in Jaisalmer of SDA of Rajasthan during this dekad (DPPQS/India).

NSE Outbreak Region: Cool dry weather prevailed in most of the NSE outbreak areas except in Buzi-Gorongosa plains in Mozambique where light rains were recorded. The Bahi Valley and Wembere plains were extensively flooded due to above normal rains which fell in the catchment areas from the past rains. In Lake Chilwa/Lake Chiuta plains in Malawi below normal rains favored extensive vegetation burning.

In **CAC**, warmer and dry weather prevailed in the locust breeding areas in Georgia during late in July. The situation improved in most of the CAC allowing locusts to hatch, mate, lay eggs and form groups. Above normal temps persisted across Central Asia and eastern Kazakhstan and likely to continue with near to below-normal temperatures expected for the remainder of the region.

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** appears 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:

Isolated adults were reported in summer breeding areas in Sahel West Africa and small-scale breeding commenced in southern **Mauritania**. A similar situation is likely in northern **Mali** and **Niger**. No locusts were reported elsewhere in the Western Outbreak Region (WOR). In Mauritania where summer rains have commenced and ecological conditions have begun improving, CNLA/Mauritania deployed survey and monitoring teams to Tiris Zemmour Tagant and Hodh Echargui to determine the SGR situation in light of rainfalls during mid-to late June and the first dekad of July. Adult locusts were detected in Tiris Zemmour Tagant and Hodh Echargui and small-scale breeding and limited hatching were reported in the southern part of the country, but control operations were not necessitated during this time (cumulative total areas treated since November 2, 2015 remained unchanged - 8,413 ha).

Forecast: Small-scale breeding will likely commence in southern and southeastern **Mauritania**, northern **Niger**, northern **Mali** and northern **Chad** and extreme southern **Algeria** during the forecast period in areas where seasonal rains have commenced and adult locusts are present (CNLA/Mauritania, CNLAA/Morocco, FAO-ECLO, NALC/Chad, NLCC/Libya, OFDA/AELGA).

SGR (Desert Locust) - Central Outbreak Region:

SGR continued further developing in **Yemen** where more swarms and adult groups were forming in the interior of the country and some have been reported moved to the central

highlands and other to the south coast. Survey and control operations are undermined by the ongoing insecurity situation and due to lack of resources and logistical problems. FAO is providing financial and technical support for survey and control operations, but the insecurity and remoteness continue being a problem to gather sufficient information and launched comprehensive interventions.

In **Sudan** scattered isolated solitary adults were detected in the northern part of the Nile Valley. No locusts were reported in the summer breeding areas in the western lowlands in **Eritrea** in during surveys carried out the last week of July. In **Ethiopia**, low density adults were detected during ground surveys carried out in early July in Teru in the Afar region as well as Aysha in the Somali region (DLCO-EA, DLMCC/Yemen, DPPQS/India, FAO-DLIS, LCC/Oman, OFDA/AELGA, PPD/Sudan).

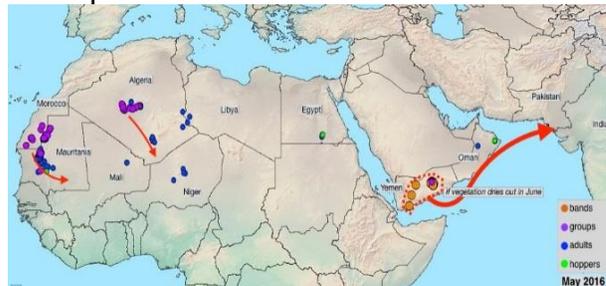


(SGR rooting on bushes in Yemen, June 2016; DLMCC/Yemen)

Forecast:

Swarms that formed in the interior of **Yemen** will continue moving to the highlands, the Red Sea coasts and neighboring areas in **Saudi Arabia** and **Oman**. There is a slight risk that some swarms may reach the Horn of Africa during the forecast period. Breeding may commence in the interior of **Sudan** and

western **Eritrea**, but elsewhere the situation will likely remain calm during the coming months. Scattered adults may appear in a few places in areas of recent rainfall in northwestern Somalia where and may begin breeding if conditions remain, but significant developments are not expected.



(Potential migration of SGR beginning July, 2016, FAO-DLIS/July)

SGR - Eastern Outbreak Region:

India remained free from SGR activities during the 1st half of July and no locusts were observed at any of the 116 locations surveyed in the Scheduled Desert Areas (SDA) of Rajasthan and Gujarat during this time and only a few scattered solitary adults were reported along the **Indo-Pakistan** borders during July. (DPPQS/India, FAO-DLIS).

Forecast: Given ecological conditions improving due to rains that fell during the 1st dekad of July and in anticipation of further improvement in ecological conditions, locusts will likely appear and breed in the SDA during the forecast period. A similar situation is likely in the summer breeding areas along the **Indo-Pakistan**. There is a slight chance of a few swarms arriving from southern **Yemen** and perhaps begin breeding along the **Indo-Pakistan** borders, but significant SGR developments are not expected during the forecast period.

Red (Nomadic) Locust (NSE): NSE swarms were reported in Nsanje district in southern **Malawi** where they were seen damaging irrigated maize crops (see picture below, IRLCO) and sugarcane plantation and efforts were underway to launch control operations.

In **Tanzania**, swarms with densities ranging from 10-50 insects/m² were controlled in 6,460 ha (2,500 ha in Iku Katavi Plains and 3,960 ha in Malagarasi Basin) during July. Larger swarms at densities ranging from 5 to 30 insects/m² covering an estimated 12,000 ha were left uncontrolled in Malagarasi Basin due to lack of resources. Infestations continued in the Kafue Flats in **Zambia**. In **Mozambique**, Buzi-Gorongosa plains and Dimba plains where favorable breeding conditions from the past rain season exist are expected to have harbored swarms (IRLCO-CSA).



Partially damaged maize crops in Nsanje, Malawi (8/2016, IRLCO-CSA)

Forecast:

The risk of swarms migrating from the outbreak areas in **Tanzania, Malawi, Mozambique** and **Zambia** and invading pasture and cropping areas in neighboring areas is high. Timely interventions are necessary to contain the locusts and avert damage to food security of vulnerable populations.

Note: NSE swarms remain a serious threat to food security and livelihoods of vulnerable communities in southcentral and southern Africa where the on-going drought has adversely affected agriculture and livestock. Recent surveys revealed an increase in NSE populations in **Zambia, Tanzania** and **Malawi** compared to previous years, a situation most likely associated with low rains and less flooded fields favoring increased hatchings and hopper developments.

The International Red Locust Control Organisation for Central and Southern Africa has alerted its Member States and partners the imminent danger of escapee swarms causing damage to crops and pasture in neighboring areas likely exacerbating the already precarious food security situation in the southern region and that resources are critical to launch timely control operations (IRLCO-CSA, OFDA/AELGA).

Madagascar Migratory Locust (LMC):

The final phase of the 3-year campaign that began on 26 August, 2015 is in progress and is expected to have been concluded by June 2016.

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

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): DMA continued laying eggs in all Central Asian countries and Azerbaijan. CIT was fledging in most of the countries and laying eggs in most of the infested countries except in Armenia and Russia. LMI has begun fledging everywhere and egg-laying in most of the infested countries except in Armenia and Russia.

Control operations of the locust campaign are coming to an end in almost all CCA countries. However, control operations against LMI will continue a bit longer in Uzbekistan. In July, more than 1.8 million ha were treated against the three locust pests, mainly against CIT.

A late received report indicated that 8,655 ha were treated against CIT in Georgia during June. Large populations of grasshoppers caused damage to crops in Khaketi, Georgia during June. DMA continued developing in many countries in the region where hoppers fledged and bands were detected.



Forecast: CIT will complete egg laying in the Caucasus by the end of August and no update was received from other countries in the region, but all three species of locusts are expected to have completed seasonal breeding and developments by the end of the forecast period.

Italian, Migratory and Moroccan locusts are a constant threat to the CAC region. These pests can 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 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. Most of the countries affected by the three locust species lack well established capacity to effectively prevent and control these pests.

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

African Armyworm (AAW): AAW outbreaks were controlled in 2,795 ha in 9 districts in Tigray Region in July using pesticides and non-chemical control alternatives. AAW season had ended in the southern outbreak region and no outbreaks were reported in the southern region during July (DLCO-EA, IRLCO-CSA).

A late received report indicated that AAW outbreaks occurred in Amhara, Oromya and Tigray regions of **Ethiopia** where 29,158 ha of crops and grazing land were infested in June and control operations treated 15,034 ha with insecticides and 2,011 ha with non-insecticides (DLCO-EA, PPD/Ethiopia).

Forecast during August, 2016

AAW infestations will likely continue in northern and northwestern **Ethiopia** and follow the ITF and pest migration pattern and spread to southern and central parts of **Eritrea** during the forecast period (may cross the Red sea riding the southwesterly monsoon trade wind?). CBAMFEW and non-CBAMFEW forecasters

are advised to vigilantly monitor and report AAW sightings and report to concerned authorities to abate crop and/or pasture damage (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): QQU bird outbreaks consisting of an estimated 5.5 million birds in 8 roosts were reported causing damage to rice and controlled in Kisumu county in Kenya. In Narok County, 10.5 million birds that were reported attacking wheat crops were controlled. In Nakuru, Kenya, ground operations controlled 7.5 million QQU birds. Sporadic outbreaks of QQU birds were reported from Matabeleland in **Zimbabwe** during July (IRLCO-CSA).

A late received report indicated that aerial operations controlled QQU outbreaks the Northern Zone in **Arusha, Kilimanjaro, Mbeya and the Southern Zone in Manyara** regions in Tanzania in June.

Forecast: QQU birds will likely continue being a problem to small grain cereal growers in **Kenya** and irrigated wheat in **Zimbabwe** during the forecast period.

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 July. 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 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

Algeria, Mauritania and **Yemen** treated 38 ha, 375 ha, and 365 ha, respectively (778 ha in total) during June. Georgia treated 12,030 ha during July. Ethiopia treated 784 ha during this month and Tanzania treated 6,460 ha against NSE. Tanzania and Kenya treated hundreds of ha against QQU birds during July.

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	44,500
Egypt	68,070~ (18,300 ULV, 49,770 l)
Eritrea	18,250~ + 20,000 ^D
Ethiopia	10,000~
Libya	25,000~
Kenya	-D
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~
Tanzania	-D
Tunisia	68,514 obsolete
Yemen	41,635 ^D + 180 kg GM~
*Includes different kinds of pesticide and formulations - ULV, EC and dust;	
-D = data not available	
~ 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 (Spodoptera expempta)*
- AELGA *Assistance for Emergency Locust Grasshopper Abatement*
- AFCS *Armyworm Forecasting and Control Services, Tanzania*
- AfDB *African Development Bank*
- AME *Anacridium melanorhodon (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	adults, but lacks fully developed reproductive organs to breed
CBAMFEW	Community-based armyworm monitoring, forecasting and early warning	GM
CERF	Central Emergency Response Fund	GreenMuscle® (a fungal-based biopesticide)
CIT	<i>Calliptamus italicus</i> (Italian Locust)	ha
CLCPRO	Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)	hectare (= 10,000 sq. meters, about 2.471 acres)
CNLA(A)	Centre National de Lutte Antiacridienne (National Locust Control Center)	ICAPC
COR	Central SGR Outbreak Region	IGAD's Climate Prediction and Application Center
CPD	Crop Protection Division	IGAD
CRC	Commission for Controlling Desert Locust in the Central Region	Intergovernmental Authority on Development (Horn of Africa)
CTE	<i>Chortoicetes terminifera</i> (Australian plague locust)	IRIN
DDLC	Department of Desert Locust Control	Integrated Regional Information Networks
DLCO-EA	Desert Locust Control Organization for Eastern Africa	IRLCO-CSA
DLMCC	Desert Locust Monitoring and Control Center, Yemen	International Red Locust Control Organization for Central and Southern Africa
DMA	<i>Dociostaurus maroccanus</i> (Moroccan Locust)	ITCZ
DPPQS	Department of Plant Protection and Quarantine Services, India	Inter-Tropical Convergence Zone
DPV	Département Protection des Végétaux (Department of Plant Protection)	ITF
ELO	EMPRES Liaison Officers -	Inter-Tropical Convergence Front = ITCZ)
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases	FAO-DLIS
EOR	Eastern SGR Outbreak Region	Food and Agriculture Organizations' Desert Locust Information Service
ETOP	Emergency Transboundary Outbreak Pest	Hoppers
Fledgling	immature adult locust /grasshopper that has pretty much the same phenology as mature	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)
		JTWC
		Joint Typhoon Warning Center
		Kg
		Kilogram (~2.2 pound)
		L
		Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)
		LCC
		Locust Control Center, Oman
		LMC
		<i>Locusta migratoriacapito</i> (Malagasy locust)
		LMM
		<i>Locusta migratoria migratorioides</i> (African Migratory Locust)
		LPA
		<i>Locustana pardalina</i>
		MoAFSC
		Ministry of Agriculture, Food Security and Cooperatives
		MoAI
		Ministry of Agriculture and Irrigation
		MoARD
		Ministry of Agriculture and Rural Development
		NALC
		National Agency for Locust Control
		NCDLC
		National Center for the Desert Locust Control, Libya
		NOAA (US)
		National Oceanic and Aeronautic Administration
		NPS
		National Park Services

NSD Republic of North Sudan
 NSE *Nomadacris septemfasciata* (Red Locust)
 OFDA Office of U.S. Foreign Disaster Assistance
 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 you should contact:

If you have any questions, comments or suggestions or know someone who would like to freely subscribe to this report, please, feel free to contact us:

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