

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

## SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**<sup>1</sup>) continued developing in October in northwest **Mauritania** where control operations treated more than 8,187 ha in October. In southern **Morocco**, 72 ha were treated and **Algeria** controlled 280 ha during this month. No locusts were reported in **Libya, Tunisia, Chad** or other countries in the Western Outbreak Region (WOR) but the situation in northern **Mali** remains unclear.

The SGR also continued developing in October in the central outbreak region (COR). In **Yemen** locusts were observed on the Red Sea coasts and the Gulf of Aden during this month. Locusts continued appearing in eastern **Ethiopia** where 30 ha were treated and breeding occurred on the southern coastal areas in **Eritrea**. In **Sudan** outbreaks were reported in North Kordofan to east of the Nile Valley and more than 2,900 ha were treated during October. **Saudi Arabia** controlled 3,400 ha in the southern Red Sea coasts where breeding was reported. No locusts were detected in **Oman** or other countries in COR.

<sup>1</sup> Definitions of all acronyms can be found at the end of the report.

The eastern outbreak region (EOR) remained calm during October.

## Forecast

Locust numbers will likely increase in **Mauritania** and southern **Morocco**, but will remain low in other WOR countries during the forecast period.

Breeding will occur along the Red Sea coasts and Gulf of Aden and perhaps northwestern **Somalia** in COR.

EOR is expected to remain clam during the forecast period.

*Active surveillance and timely preventive interventions remain critical to abate any major threats in areas where locust activities are present.*

*Thanks to the efforts and commitments of national entities and the support from regional and international partners and donors, e.g., USAID, FAC, FAO, AFDB, etc., frontline countries in WOR, i.e., Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal and Tunisia, and several countries in the COR have fully operational national locust management entities or migratory pest control unit. This has enabled a number of countries to thwart potentially serious locust threats, such as the 2012 and 2015 locust emergencies as well as locust threats in 2016. The coordination and technical and material supports from CLCPRO, CRC, EMPRES programs,*

*FAO/ECLC and through USAID's cooperative agreement with FAO have proven absolutely valuable.*

**Red (Nomadic) Locust (NSE):** NSE persisted in October in **Tanzania, Malawi, Mozambique** and **Zambia** (IRLCO-CSA).

**Forecast:** Breeding will commence with the onset of the rains in November 2016. Swarms will form and leave breeding areas and invade crops and pasture. Timely control interventions remain crucial to avoid crop and pasture losses that could impact food security.

IRLCO-CSA has appealed to its Member Countries and partners for resources to undertake survey and control operations in time to avoid crop and pasture damage.

**Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts,** Central Asia and the Caucasus (CAC): The locust situation has progressively declined in several countries in CAC and all three species are expected to disappear by the end of the forecast period and will remain so until next spring.

**Tree locust (*Anacridium spp*):** Tree locust outbreaks persisted in Turkana County of the Rift Valley Region in **Kenya** where plans were underway to launch control operations. The locusts were reported feeding on Acacia sp. vegetation, the main source of food for the grazing animals.

**African Armyworm (AAW):** AAW infestations were not reported in the southern or central outbreak regions during October. IRLCO-CSA has distributed a total of 480 pheromone traps and 1,860 capsules and 2,580 restrainers among its 6 member states.

**Quelea (QQU):** QQU outbreaks were reported in irrigated rice fields in **Kenya** and in Kilimanjaro and Morogoro Regions in **Tanzania** and in wheat fields in **Zimbabwe**.

*USAID/OFDA's senior pest and pesticide management advisor travelled overseas to participate in a project inception meeting and observe master trainers training in Entebbe, Uganda from October 28 to November 10. He then travelled to Astana, Kazakhstan from 11-19 November, 2016 to attend an annual project accomplishment review and assessment.*

*During his trip to the project inception meeting and trainers training events, OFDA Advisor noted organizer's capacity and witnessed participants' enthusiasm and keen interests in the emergency locust prevention and control project which is being co-funded by OFDA, FAO and DLCO. The project is aimed at strengthening national and regional capacity for better management of locust control and prevention operations in the horn of Africa. The Advisor was pleased the way the meeting and training were organized and conducted and noted*

*the dedication and commitments demonstrated by the DLCO and FAO staff as well as participants who will be playing a key role in the implementation of the project.*

*During his trip to Astana, where he attended the final regional meeting of the locust project that is being co-funded by OFDA in ten countries in Central Asia and the Caucasus, the Advisor observed and witnessed discussions on issues that go as far back as the beginning of the project in 2011.*

*The status of the milestones that were set during the course of the inception year was discussed along with key constraints identified and remedial actions taken. Overall the project has recorded commendable results in different countries and at various levels. A few of the achievements were a reflection of each country's technical, material and human resources capacity to effectively absorb what was offered by the project.*

*There was a consensus among participants that the support provided by USAID, FAO, and Turkey through the locust project significantly improved their technical and material capacity to monitor, report and control locusts. He witnessed that participants were grateful for being exposed to new technologies such as ultralow volume sprayers, GIS based survey and reporting and many more. There was a consensus that the*

*project played a key role that it brought countries that were once at odds closer together and to be able share technical information and conduct jointly cross border locust surveillance and control interventions.*

*The Advisor noted a number of milestones that were accomplished over the past five years in such a vast region which covers ten countries with a modest funding from OFDA and other partners.*

*The Advisor also noted that FAO and participating countries expressed commitments that key activities will continue beyond OFDA funding that will end by April, 2017. To this effect, FAO is collaborating with participating countries to develop a concept note and circulate to explore the means and ways to build on the results that have been achieved over the past five plus years and maintain sustainability of the project.*

**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 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)** a continué de se

développer en octobre dans le nord-ouest de la Mauritanie où les opérations de lutte ont traité plus de 8 187 ha en Octobre. Au sud du Maroc, 72 ha ont été traités et l'Algérie contrôlé 280 ha durant ce mois. Aucun criquet n'a été signalé en Libye, en Tunisie, au Tchad ou dans d'autres pays de la Région de l'épidémie de l'Ouest mais la situation dans le nord du Mali reste incertaine.

Le SGR a également continué à se développer en octobre dans la région de l'épidémie centrale (COR). Au Yémen, des criquets ont été observés sur les côtes de la mer Rouge et le golfe d'Aden pendant ce mois. Les criquets ont continué de paraître dans l'est de l'Éthiopie, où 30 ha ont été traités et l'élevage a eu lieu sur les zones côtières du sud de l'Érythrée. Au Soudan, des flambées ont été signalées dans le nord du Kordofan, à l'est de la vallée du Nil, et plus de 2 900 hectares ont été traités en octobre. L'Arabie saoudite a contrôlé 3,400 ha dans les côtes méridionales de la mer Rouge étaient la reproduction a été signalé. Aucun criquet n'a été détecté à Oman ou dans d'autres pays du COR. La région de l'épidémie orientale (EOR) est restée calme et seulement quelques adultes solitaires ont été signalés dans le Cholistan Pakistan et les régions adjacentes dans le Rajasthan, Inde.

## Prévoir

Le nombre de criquets augmente probablement en Mauritanie et dans le sud du Maroc, mais restera faible dans d'autres pays du monde pendant la période de prévision.

L'élevage se fera le long des côtes de la mer Rouge et du golfe d'Aden et peut-être au nord-ouest de la Somalie dans le COR.

La région de l'épidémie orientale (EOR) est demeurée calme en octobre.

Une surveillance active et des interventions préventives opportunes demeurent essentielles pour réduire les menaces majeures dans les zones où les activités acridiennes sont présentes.

Grâce aux efforts et aux engagements des entités nationales et à l'appui des partenaires régionaux et internationaux et des bailleurs de fonds tels que l'USAID, la FAO, la BAD, etc., les pays de première ligne de l'OTAN, à savoir l'Algérie, le Tchad, la Libye, le Mali, la Mauritanie, Le Maroc, le Niger, le Sénégal et la Tunisie, et plusieurs pays du COR disposent d'entités nationales de gestion des acridiens pleinement opérationnelles ou d'unités de lutte contre les ravageurs migrants. Cela a permis à un certain nombre de pays de contrecarrer les menaces potentiellement graves pour les acridiens, comme les urgences

acridiennes 2012 et 2015 ainsi que les menaces acridiennes en 2016. La coordination et les appuis techniques et matériels de CLCPRO, CRC, EMPRES, FAO / ECLO et L'accord de coopération de l'USAID avec la FAO s'est révélé absolument précieux.

**Locust (NSE) rouge:** NSE a persisté en octobre en Tanzanie, au Malawi, au Mozambique et en Zambie (IRLCO-CSA).

**Prévision:** L'élevage commencera avec l'arrivée des pluies en novembre 2016. Des essaims formeront et laisseront les aires de reproduction et envahiront les cultures et les pâturages. Des interventions de lutte rapides demeurent essentielles pour éviter les pertes de cultures et de pâturages qui pourraient avoir un impact sur la sécurité alimentaire.

L'IRLCO-CSA a lancé un appel à ses Pays Membres et à ses partenaires pour les ressources nécessaires pour entreprendre des opérations d'enquête et de contrôle à temps afin d'éviter les dommages causés aux cultures et aux pâturages.

**Locomotives de l'Asie (CIT), Marocains (DMA), Asiatiques Migrateurs (LMI),** Asie Centrale et Caucase (CAC): La situation acridienne a progressivement diminué dans plusieurs pays de la CAC et les trois espèces devraient disparaître d'ici la fin de la période de prévision et le resteront jusqu'au printemps prochain.

**Criquet arbre (Anacridium spp):**

Des poussées acridiennes persistent dans le comté de Turkana de la région de la vallée du Rift, au Kenya, où des plans étaient en cours pour lancer les opérations de lutte. On a signalé que les criquets se nourrissaient de la végétation d'Acacia sp, principale source d'alimentation des animaux de pâturage.

**Cheille Légionnaire Africain**

**(AAW):** Les infestations d'AAW n'ont pas été signalées dans les régions du sud ou de l'éclosion centrale au cours du mois d'octobre. IRLCO-CSA a distribué un total de 480 pièges à phéromones et 1 860 capsules et 2 580 restrainers parmi ses 6 états membres.

**Quelea (QQU):** Des éclosions de QQI ont été signalées se nourrissant de riz irrigué à Mwea au Kenya et dans la région du Kilimandjaro en Tanzanie

Le conseiller principal de l'USAID / OFDA en matière de lutte contre les ravageurs et les pesticides s'est rendu à l'étranger pour participer à une réunion de lancement du projet et observer la formation des maîtres formateurs à Entebbe (Ouganda) du 28 octobre au 10 novembre. Il a ensuite voyagé à Astana, Kazakhstan du 11 au 19 novembre 2016 pour assister Un examen annuel des réalisations du projet et une évaluation.

Lors de son voyage à la réunion de lancement du projet et aux formations

des formateurs, le conseiller de l'OFDA a pris note de la capacité de l'organisateur et a été témoin de l'enthousiasme des participants et du vif intérêt du projet de prévention et de lutte antiacridienne d'urgence cofinancé par l'OFDA, la FAO et DLCO. Le projet vise à renforcer les capacités nationales et régionales pour une meilleure gestion des opérations de prévention et de prévention du criquet pèlerin dans la Corne de l'Afrique. Le Conseiller s'est félicité de la façon dont la réunion et la formation ont été organisées et menées et a noté le dévouement et les engagements démontrés par le DLCO et le personnel de la FAO ainsi que les participants qui joueront un rôle clé dans la mise en œuvre du projet.

Lors de son voyage à Astana, où il a participé à la dernière réunion régionale du projet acridien cofinancé par l'OFDA dans dix pays d'Asie centrale et du Caucase, le Conseiller a observé et assisté à des discussions sur des questions qui remontent à Début du projet en 2011.

Le statut des jalons qui ont été fixés au cours de la première année a été discuté, ainsi que les principales contraintes identifiées et les mesures correctives prises. Dans l'ensemble, le projet a enregistré des résultats louables dans différents pays et à divers niveaux. Quelques-unes des réalisations reflétaient la capacité technique, matérielle et humaine de chaque pays à absorber efficacement ce qui était offert par le projet.

Les participants se sont accordés à penser que le soutien fourni par l'USAID, la FAO et la Turquie grâce au projet acridiens améliorerait considérablement leur capacité technique et matérielle de surveillance, de signalement et de lutte contre les acridiens. Il a été témoin que les participants étaient reconnaissants d'être exposés à de nouvelles technologies telles que les pulvérisateurs à volume ultra-bas, l'enquête et la production de rapports basés sur le SIG et bien d'autres encore. Un consensus s'est dégagé sur le fait que le projet a joué un rôle clé car il a permis de rapprocher les pays qui étaient autrefois en désaccord et de pouvoir échanger des informations techniques et mener des activités conjointes de surveillance et de lutte contre le criquet transfrontalier.

Le conseiller a noté certains nombre de jalons qui ont été accomplis au cours des cinq dernières années dans une région si vaste qui couvre dix pays avec un financement modeste de l'OFDA et d'autres partenaires.

Le Conseiller a également noté que la FAO et les pays participants ont déclaré que les activités clés se poursuivraient au-delà du financement de l'OFDA qui prendra fin d'ici avril 2017. À cet effet, la FAO collabore avec les pays participants pour élaborer une note conceptuelle et De s'appuyer sur les résultats obtenus au cours des cinq dernières

années et de maintenir la durabilité du projet.

**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 countries 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. Through this project, a number of technical staff from **Sahel West Africa, Northwest Africa, Eastern and Northeastern Africa, CAC, and the Middle East** continue receiving training in several fields, including Health Safety and Environmental Monitoring as related to ETOP operations and many more. During the first dekad of September, 2016, several technical staff from **Sahel West Africa and North Africa** received training on *Health Safety and Environmental Monitoring* in **Morocco**.

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

### Weather and Ecological Conditions

**Western Outbreak region:** Ecological conditions were favorable in Sahel West Africa resulting from good rains in Mauritania and light to moderate rains that were recorded in **Morocco** in the south and southwestern parts of the country improved ecological conditions in these regions.

In **Chad**, the 2<sup>nd</sup> dekad of October remained calm no rain was reported in the SGR outbreak areas during this dekad. Ecological conditions continued deteriorating for the most part with soil moisture drying up and annual vegetation disappearing except in a few wadis and perennial vegetation.

In **Mali**, below average rainfall was reported in the central and the southern parts of the country. Dry weather and dust storm are affecting Timbuktu, Gao and Kidal in the north causing moderately reduced visibility. The ITF mostly hovered

over Mopti. Moist soil and some annual and perennial plants are observed in a few places in the outbreak areas.

**Central Outbreak Region:** Moderate to good rains were recorded in the summer breeding areas in **Sudan** and southeast of Egypt during and light showers were reported in Yemen and Eritrea during October.

**Eastern Outbreak Region:** The EOR remained mostly dry and only light showers were reported in the highlands in southeast Iran.

### NSE Outbreak Region

The rain commenced in October in some of the NSE outbreak areas primarily in Malawi (5.5 ml in Salinas), Mozambique (33 in Buzi-Gorongosa plains) and Tanzania (80 ml in Malagarasi Basin) and this will likely trigger breeding of the NSE.

In CAC, dry and cool weather prevailed in most of the locust breeding areas during October.

[http://www.cpc.ncep.noaa.gov/products/international/casia/casia\\_hazard.pdf](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.

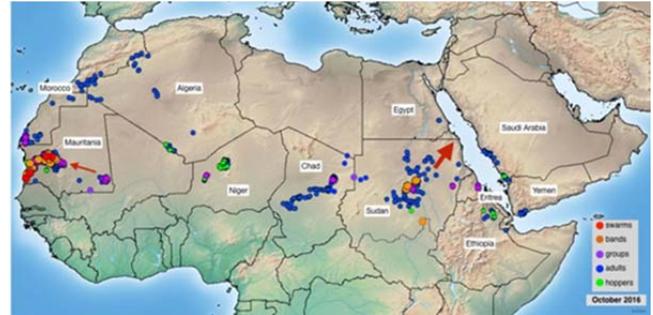
The **Pine Bark Beetle** has been escalating in the western hemisphere due to the rise in winter temperatures and decreased precipitation. Warmer weather means lesser egg/grub death from severe cold temperatures and less precipitation means weaker trees that succumb to the beetle attack.

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 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 a Forecast for the Next Six Weeks

**SGR – Western Outbreak Region:** In **Mauritania** several swarms and groups of mature adults at densities up to 35,000 adults/ha ( $<4/m^2$ ) and varying in size from 20 to 140 ha appeared in Trarza, Adrar and Inchiri early in the month. A very small swarm of 50 ha was reported near Nouakchott. Egg-laying was underway and hatching commenced, causing small first and second instar hopper bands to form. Ground control treated more than 8,187 ha during

October in the northwestern part of the country.



SGR situation in November, FAO-DLIS

**Morocco**, the SGR situation generally remained calm during the first dekad of October. In southern Morocco, scattered adults appeared in the Adrar Settouf. Ecological conditions were favorable in the south and south eastern region in Morocco for SGR to survive and breed. Three survey teams were mobilized during this dekad in the South and Southeast regions of the country where solitary adults maturing and mature individual was observed at densities ranging from 5 to 20 adults/ha on areas ranging 5 to 10 ha. Control operations treated 72 ha with Chlorpyrifos 240 ULV between 21-26 October.

Small-scale concentrations may be present in northern **Mali**, but could not be confirmed due to the ongoing security situation.

In **Chad**, low density solitary immature, maturing and mature adults were observed in a few places in Fada, Kalait and Salal. Hoppers were also detected in Fada. Four survey teams that were deployed earlier to Arada, Kalait, Salal, and Fada were recalled to Abeche base by mid-October as ecological conditions further deteriorated in the outbreak areas signaling the absence of significant

number of locusts. No control operations were conducted and SGR pesticide stocks at ANLA central store in Abeche remained unchanged during the 2<sup>nd</sup> dekad of October.

### Forecast

A new generation of adults will form groups and small swarms from about mid-November onwards in western **Mauritania**. It is likely that the outbreak will extend into areas of recent heavy rains in the north of the country as well as in **Western Sahara** where breeding and limited control operations are in progress. A failure to control the outbreak combined with any unusually heavy and widespread rainfall might eventually lead to an upsurge in northwest Africa next spring but this is far from certain. In **Morocco**, the presence of locally bred solitary adults and those that arrive in the southern part of the country, perhaps from **Mauritania**, will likely cause small-scale breeding during the forecast period. Overall, the SGR situation will likely remain calm in other countries in WOR (CNLA/Mauritania, CNLAA/Morocco, FAO-DLIS, NALC/Chad, NLCC/Libya).

### SGR (Desert Locust) - Central

**Outbreak Region:** In **Sudan** survey operations covered vast areas in the summer breeding areas in North Kordofan, River Nile, Kassala and the Northern States during October where an outbreak developed. Ground and aerial control treated close to 3,000 ha of hopper groups and bands. Some of the hoppers have fledged and start forming immature adults and perhaps small swarms and move to the winter breeding areas along the Red Sea, initially to northeast **Sudan** and possibly

southeast **Egypt** where good rains fell in later October that will allow adults to mature and lay eggs. Breeding continued in the southern Red Sea coast in **Saudi Arabia** where control operations treated more than 3,400 ha and on the coastal areas in Gulf of Aden in **Yemen** during October.

During October, 3 teams from the MoA/**Ethiopia** conducted survey covering some 7,815 ha in the eastern region where they detected low density (50 insects/ha) solitary immature adults on 70 ha at 104652N/0423422E and solitary adults and hopper bands on 170 ha at 122801N/41 1325E in the Afar region where hoppers were controlled on 30 ha during this time. No major infestations were reported in **Eritrea** during the 2<sup>nd</sup> dekad of October. However, a few groups of adults were reported breeding along the southern Red Sea coasts. The situation remained calm in Oman in October and no locusts were observed during surveys that were conducted in Musandam and Dhofar Regions.

**Forecast:** Breeding will likely continue along the Red Sea coasts and on the Gulf of Aden and northwestern Somalia.

*(Note: In 2007, several swarms developed in **Yemen** and crossed the Red Sea and the Gulf of Aden and invaded eastern **Ethiopia**, northern **Somalia**, and **Djibouti**. The swarms progressively reached northern **Kenya** and hundreds of kilometers farther west into southwest and western **Ethiopia** where they were reported threatening crops and pasture over vast areas. **End note**).*

**SGR - Eastern Outbreak Region:** The SGR situation in the EOR remained calm during October (DPPOS/India, FAO-DLIS).

**Forecast:** The EOR will remain calm 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 in areas where locust activities are present (DLCO-EA, DLMCC/Yemen, DPPOS/India, FAO-DLIS, LCC/Oman, OFDA/AELGA, PPD/Sudan).

**Red (Nomadic) Locust (NSE):** NSE persisted in Malagarasi Basin, Ikuu plains in **Tanzania**, Lake Chilwa/Lake Chiuta plains, Mpatasanjoka Dambo in **Malawi**; Buzi Gorongosa plains, Dimba plains in **Mozambique** and in the Kafue and Lukanga Swamps in **Zambia** (IRLCO-CSA).

**Forecast:** Breeding will commence with the onset of the rains in November 2016. As a result of lack of control operations large residual populations are likely present in the outbreak areas and this will increased breeding causing considerable number of hopper bands to appear sometime through January and February 2017. If left uncontrolled the hoppers will likely form swarms April/May. If so, swarms will leave breeding areas and invade crops and pasture and impact food security. Timely control operations remain critical to avoid loses of food security.

*IRLCO-CSA, the only entity in the southern region with the mandate to survey, monitor, prevent and control locusts, armyworm and quelea birds, continues appealing to its member-states to avail resources to carry out timely surveys, monitoring and control operations and contribute to food security and livelihoods of vulnerable populations*

*in the region that has already been battered by multiple calamities. It is in the interest of all concerned that IRLCO-CSA's member-states positively and generously respond to the Organization's please for resources and enable it to abate, prevent and control these pests successfully and prevent them from reaching a plague stage and ravage crops and pasture and end up being unstoppable (IRLCO-CSA, OFDA-AELGA).*

**Madagascar Migratory Locust (LMC):** No update was received at the time this report was compiled.

[www.fao.org/emergencies/crisis/madagascar-locust/en/](http://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):** Significant activities were not reported in CAC region during October.

**Forecast:** No locust activities are expected during the forecast period in CAC. 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 in the region may also experience increased locust activities in 2017. Vigilance, marking egg laying grounds remain essential to plan for the next campaign in 2017.



CAC countries affected by CIT, DMA and LMI species (source: FAO-ECLC).

**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

October, but it is likely that ETOPs continued to be present.

**African Armyworm (AAW):** AAW infestations were not reported in the southern or central outbreak regions during October. IRLCO-CSA has distributed a total of 480 pheromone traps and 1,860 capsules and 2,580 restrainers among its 6 member states.

**Forecast:** AAW season will likely commence in the southern outbreak region during the forecast period. Frontline countries are advised to exercise readiness for 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).

*It is to be recalled that during earlier months local farmers and communities trained by **OFDA-funded CBAMFEW** project were the first to report the presence of AAW in southeastern and northern regions of Ethiopia. The CBAMFEW's timely actions enabled MinAgri staff and local communities to avert what could have otherwise caused a serious damage to crops and pasture (PPD/Ethiopia, 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/Viewer/index.html?appid=9d2ab2f918284595819836d1f16a526f>

**Quelea (QQU):** QQU outbreaks were reported in irrigated rice in Busia, Siaya, Kirinyaga counties in **Kenya**. In Busia and Siaya counties was carried out using Fenthion 640 ULV by the Plant Protection Division in collaboration with Desert Locust Control Organization for Eastern Africa (DLCO-CSA). The birds were also reported in Kilimanjaro and Morogoro Regions in **Tanzania** where they were attacking irrigated rice. Aerial control was launched by Plant Health Services in collaboration with DLCO-EA. QQU outbreaks were also reported in Matebeleland North and South Provinces in **Zimbabwe**. The birds were reported attacking irrigated winter wheat. Control was undertaken using ground based platforms.

**Forecast:** QQU birds will likely continue being a problem to irrigated rice growers in Busia, Siaya, Kisumu and, Kirinyaga counties of **Kenya**, Kilimanjaro Region in **Tanzania** and Mashonland in **Zimbabwe** and likely cause damage to small grain cereals in mid-January, 2017 (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:** Serious rodent infestations were observed in **Georgia** where the pest was seen damaging serial and vegetable crops.

**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**

In October, control operations treated 8,189 ha in **Mauritania**, 30 ha in **Ethiopia**, 280 ha in **Algeria**, 2,900 ha in **Sudan**, 72 ha in **Morocco** and 3,400 ha in **Saudi Arabia**.

**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	38,300
Egypt	68,070~ (18,300 ULV, 49,770 l)
Eritrea	18,250~ + 20,000 <sup>D</sup>
Ethiopia	9,711~
Libya	25,000~
Madagascar	206,000~ + 100,000 <sup>D</sup>
Mali	16,190
Mauritania	25,737 <sup>DM</sup>
Morocco	3,491,025 <sup>D</sup>
Niger	75,800~
Oman	10,000~
S. Arabia	97,000~
Senegal	156,000~
Sudan	171,780~
Tunisia	68,514 obsolete
Yemen	41,585 <sup>D</sup> + 180 kg GM~

\* Includes different kinds of pesticide and formulations - ULV, EC and dust;

~ data may not be current;

<sup>D</sup> = Morocco donated 100,000 l of pesticides to Madagascar and 10,000 l to Mauritania in 2015

<sup>D</sup> = In 2013 Morocco donated 200,000 l to Madagascar

<sup>D</sup> = Saudi donated 10,000 to Yemen and pledged 20,000 l to Eritrea

<sup>DM</sup> = Morocco donated 30,000 l of pesticides to Mauritania

GM = *GreenMuscle*<sup>TM</sup> (fungal-based biological pesticide)

## LIST OF ACRONYMS

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

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

- 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...

Tel.: + 1-202-712-1859

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### **Who to contact for more information:**

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

Yeneneh Belayneh, PhD.  
[ybelayneh@usaid.gov](mailto:ybelayneh@usaid.gov)