

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Update for September with a
Forecast till mid-November, 2015
avec un résumé en français**

SUMMARY

The **Desert Locust (SGR¹)** situation remained calm and only a few isolated solitary adults were detected in Sahel West Africa, the Red Sea coast and southwest Asia during September.

Forecast: Adults will likely concentrate in a few places where ecological conditions are favorable in Sahel West Africa and Sudan and breed on a small-scale during the forecast period.

OTHER ETOPS

Red (Nomadic) Locust (NSE): NSE concentrations persisted in the primary outbreak areas in **Tanzania, Malawi, and Mozambique** and low to medium-density populations were reported in other outbreak areas in these countries as well as **Zambia** (IRLCO-CSA).

Madagascar Migratory Locust (LMC): The third and final phase of the three-year locust campaign began in late August, 2015. The first ground surveys confirmed the presence of reduced locust numbers. An aerial

operation will soon commence to augment ground operations.

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): The locust campaign has ended in the CAC region and only late seasonal egg field surveys are in progress. During the 2015 locust campaign, more than 4.9 million ha were reported treated in the region (FAO-ECLO).

African Armyworm (AAW): AAW situation remained calm in all outbreak areas in September and some activities are expected during the forecast period.

Quelea quelea (QQU): QQU birds were reported attacking crops in Busia, Siaya and Nyahururu counties and feeding on irrigated rice crops in Dominion, Bunyala, and Anyiko in **Kenya**. QQU infestations were also reported in the southwest, eastern and northeastern **Ethiopia**, Mashonaland Central, East and West, Matebeleland North and Midlands Provinces in **Zimbabwe** (IRLCO-CSA).

A Yellow-Spined bamboo locust – **Ceracris kiangsu** - outbreak was reported in northern Laos (USAID, FAO).

Active surveillance and monitoring as well as timely preventive interventions remain essential to avoid unexpected

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

surprises in all ETOP outbreak countries.

USAID/OFDA Plant Health and Pesticide unit (AELGA) will continue monitoring ETOP situations closely and provide updates and advices as often as necessary. **End summary**

RÉSUMÉ

La situation acridienne (**SGR**) est restée calme et à seulement quelques ailés solitaires isolés ont été détectés dans quelques pays d'Afrique de l'Ouest du Sahel, la côte de la mer Rouge et au sud-ouest Asie au cours de Septembre.

Prévisions: adultes vont probablement se concentrer dans quelques endroits où les conditions écologiques sont favorables. Une reproduction à petite échelle est probablement dans le Sahel au nord-ouest Afrique et au Soudan au cours de la période de prévision.

AUTRES ETOPS

Rouge (Nomade) Locust (NSE): concentrations de NSE persisté dans les régions de foyer primaire en Tanzanie, au Malawi, au Mozambique et faible pour les populations de densité moyenne ont été signalés dans d'autres domaines d'éclosions dans ces pays ainsi que la Zambie (IRLCO-CSA).

Locust Madagascar migrateurs (LMC): La troisième et dernière phase de la campagne de trois ans a commencé à la fin Août, 2015. Les premières enquêtes sur le terrain ont confirmé la présence des effectifs acridiens réduits. Une opération aérienne débutera bientôt pour augmenter les opérations au sol.

Italien (CIT), du Maroc (DMA), Asiatique migrateurs (IMT) Criquets en Asie centrale et dans le Caucase (CAC): La campagne antiacridienne a terminé dans la région CAC et seules les enquêtes sur le terrain de l'œuf en fin de saison sont en cours. Pendant la campagne antiacridienne 2015, plus de 4,9 millions d'hectares ont été signalés dans la région traitée (FAO-ECLO).

Chenille Légionnaire africaine (AAW): la situation est restée calme AAW dans toutes les zones des foyers en Septembre et d'activités sont attendus au cours de la période de prévision.

Quéléa quelea (QQU): les QQU oiseaux ont été signalés qqu attaquer cultures dans Busia, Siaya et comtés Nyahururu et l'alimentation sur les cultures de riz irrigué dans Dominion, Bunyala et Anyiko au Kenya. Qqu infestation ont également été signalés dans le sud-est et du nord Ethiopie, Mashonaland Central, Est et Ouest, les

provinces du Matabeleland Nord et les Midlands au Zimbabwe (IRLCO-CSA).

Criquets jaune-épineux bambou - Ceracris Kiangsu - foyer a été signalé dans le nord du Laos.

La surveillance active et la surveillance ainsi que des interventions préventives en temps opportun demeurent essentiels pour éviter les surprises inattendues dans tous les pays d'épidémie ETOP.

USAID / OFDA la santé des plantes et de l'unité des pesticides (AELGA) continuera de surveiller de près les situations ETOP et fournir des mises à jour et des conseils aussi souvent que nécessaire. Résumé Fin

*The increased awareness among national authorities and the support from USAID/OFDA and other humanitarian/development partners have helped frontline and/or primary invasion countries in Northern Africa and Sahel West Africa, i.e., **Algeria, Chad, Libya, Mali, Mauritania, Morocco, Niger, Senegal and Tunisia** to establish autonomous unit for the prevention and control of SGR.*

OFDA ETOP Activities and Benefits

With the financial support from USAID/OFDA and other donors FAO established an online Pesticide Stock Management System (PSMS) in more

than 50 countries around the globe, including many in the SGR outbreak regions in West and North Africa, the Horn and Eastern Africa and many more. Participating countries are now able to maintain current inventories of their stocks, including usable and obsolete, as well as prevent unnecessary accumulations of useable/obsolete pesticides and empty containers. Thanks to the PSMS, many countries have avoided unnecessary procurements or stockpiling of pesticides. This has minimized costly future disposal operations in a number of countries and contributed to the safety and well-being of their citizens and the shared environment.

OFDA-sponsored tri-state community-based armyworm monitoring, forecasting and early warning (CBAMFEW) project improved knowledge, skills and capacity of rural farmers to monitor and report armyworm presence. The project that aimed at reducing the threats AAW poses to food security and livelihoods of vulnerable populations through improved farmers' skills, knowledge and perceptions of the AAW was concluded by the end of September.

Participating countries expressed their gratitude and commitments to maintain sustainability of the activities initiated through this project. Through its Plant Health and Pesticide unit, USAID/OFDA will maintain a line of communications with participating countries and keep

monitoring progresses and constraints of the activities it supported to initiate.

Thanks to the support from USAID/OFDA and partnering organizations, farmers can now identify and prepare to prevent AAW outbreaks from occurring and stop the caterpillars from causing damage to their crops and pasture.



Farmer forecasters, a district Agricultural Development Officer, and a field agent are proudly posed next to the pheromone trap that the farmer forecasters manage; Masasa village, Handeni District, Tanzania (Photo courtesy: Y. Belayneh)

USAID/OFDA's mapping unit has developed a dynamic map that shows the locations of all trap sites and a lot more - click here bit.ly/1PAydht to view the web version of the map. The map will be continuously updated with additional useful data layers, including cropping patterns, AAW outbreak frequencies, number of requests for interventions, population load, land use patterns, weather, etc.

Over the course of the past years, the project has conducted several training programs, national, district and village meetings, workshops as well as provided technical assistance to participating

communities in all three countries. It has also launched an innovative mobile phone-based data collection and management technology. This technology is being implemented in all three countries.

OFDA/PSPM is also working with other partners to explore means and ways of expanding this innovative technology to benefit other AAW affected countries.



The mobile technology training held by the Tanzania national armyworm monitoring unit and the DLCO base manager in Tengeru, Arusha. OFDA staff advised partners on the implementation of the technology (see photo above, courtesy: Y. Belayneh).

OFDA maintained interests and support for sustainable pesticide risk reduction initiatives through stewardship network (SPRRSN). This initiative is aimed at strengthening capacities of vulnerable communities to help reduce pesticide related risks and improve their safety, protect their assets and the shared environment. To date, OFDA/PSPM has successfully launched two sub-regional SPRRSNs in Eastern Africa and the Horn. The Horn of Africa SPRRSN initiative has created an Association dubbed as Pesticide Stewardship Association-Ethiopia (PSA-E) and PSA-E is considered

a model for future similar initiatives across similar regions.

OFDA-PSPM has plans to extend this initiative to other parts of Africa, the Middle East, CAC and other regions. In his recent visit, OFDA Senior Technical Advisor for Pesticides and Pests observed PSA-N activities in Ethiopia and noted progresses and constraints among beneficiaries.

OFDA continued its support for the DRR program to strengthen national and regional capacities for ETOP operations. The program which is implemented through FAO has assisted frontline countries to mitigate, prevent, and respond to ETOP outbreaks. It has also helped participating countries avoid potential emergencies that emanate from misuse and mishandling of pesticides, pesticide-incorporated materials and application platforms.

OFDA supported DRR program for ETOP management in Central Asia and the Caucasus (CAC) is on track. The program promotes collaboration among neighboring countries and encourages coordination of joint monitoring, surveillance, reporting and launching preventive interventions to minimize the threats of ETOPs to food security and livelihoods of millions of vulnerable populations.

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

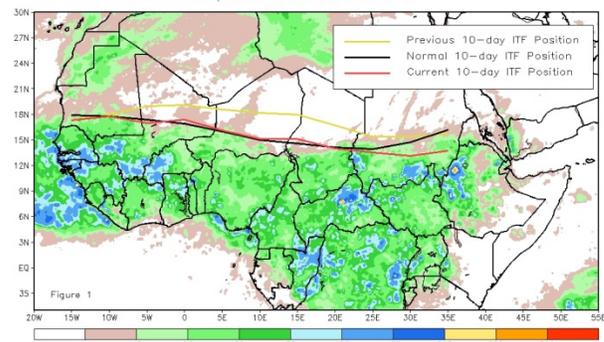
<http://www.usaid.gov/what-we-do/working-crises-and-conflict/responding-times-crisis/how-we-do-it/humanitarian-sectors/agriculture-and-food-security/pest-and-pesticide-monitoring>

Detailed information on weather and ecological conditions

Weather and ecological conditions:

During the 3rd dekad of September, the ITF in the East moved southward from its position during the 2nd dekad of the month and retreated well to the south in the West. The mean western portion of the Front (10W-10E) was approximated at 16.7N, very close to the normal climatological position (16.6N) for the end of September.

Current vs. Normal Dekadal ITF Position and RFE Accumulated Precipitation (mm) September 2015, Dekad 3

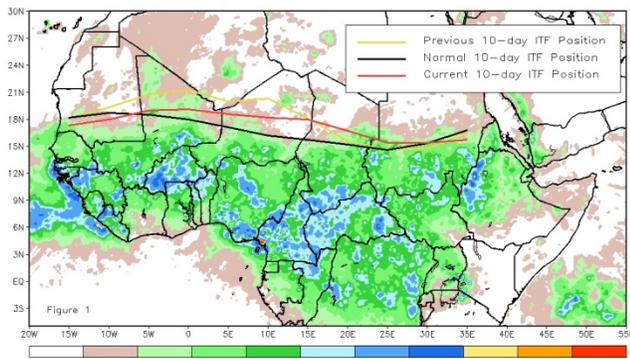


The ITF's location now follows very closely that of the climatological position throughout western Africa. The return to more normal conditions has caused persistent heavy rains in the Sahel to abate. The mean eastern portion of the ITF (20E-35E) was approximated at 13.6N, well below the normal climatological position (14.7N) for the end of September. The above map shows the current position (red) of the ITF relative to its climatological position during the 3rd dekad of September

(black), and its previous position during the 2nd dekad of the month (yellow) (NOAA, 10/2015).

During the 2nd dekad of September, the ITF in the East segment moved northward slightly from its previous position during the 1st dekad of the month, while the Western portion retreated south. The mean western portion of the ITF (10W-10E) was approximated at 18.6 N, well above the normal climatological position (17.7) for the mid-September.

Current vs. Normal Dekadal ITF Position
and RFE Accumulated Precipitation (mm)
September 2015, Dekad 2

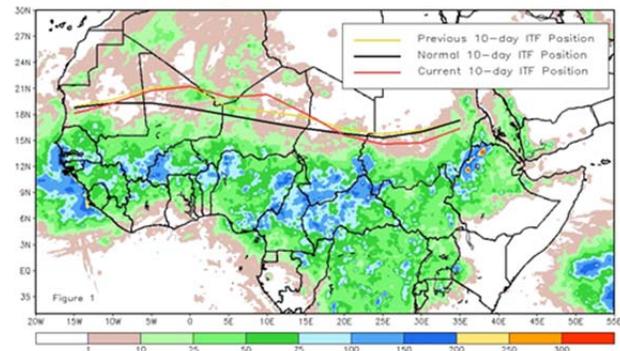


The continued northward displacement of the ITF position over Mali and Niger was continued triggering well-distributed rainfall for these areas. The mean eastern portion of the ITF (20E-35E) was approximated at 15.8 N. The map above shows the current position of the ITF (red) relative to its climatological position during the 2nd dekad of September (black) and its position during the 1st dekad of the month (yellow) (NOAA, 9/2015).

During the 1st dekad of September, the position of the ITF in the West slightly advanced to the north whereas retreated in the East from its previous position at the end of August. The mean western portion of the ITF (10W-10E) was approximated at 20.3 N which is above the normal climatological position of 18.5

for the first dekad of September. The significant northward displacement of the ITF position over Mali and Niger resulted in a well-distributed rainfall for these Northern Sahelian areas. The mean eastern portion of the ITF (20E-35E) was approximated at 15.3 N which is below the normal climatological position of 16.1 N for this period of the month. The below figure illustrates the current position (red) of the ITF relative to its climatological position during the 1st dekad of September (black) and its former position during the 3rd dekad of August (yellow) (NOAA, 9/2015).

Current vs. Normal Dekadal ITF Position
and RFE Accumulated Precipitation (mm)
September 2015, Dekad 1



In Mali good and widespread rains fell causing ecological conditions to have become favorable for the locusts to persist and perhaps cause small-scale breeding in the northern part of the country where locusts were reported but not confirmed due to the ongoing insecurity situation.

In **Chad**, the ITF began to retreat from its earlier position to 18 N and 15 N. Light to moderate rains were recorded during the period in SGR outbreak areas in Salal, Arada, Kalait, South of Fada, Nokou and Mao. Ecological conditions are favorable for locusts to breed and further develop in areas that were surveyed during this dekad. Annual plant species such as *Tribulus terrestris*, *Panicum laetum*,

Cenchrus biflorus and *Dactyloctenium aegyptium* were appearing in the sites visited. Perennial vegetation such as *Leptadenia pyrotechnica*, *Panicum turgidum*, *Boscia senegalensis* and *Maerua crassifolia* were also present in surveyed areas (NLCA/Chad).

In **Mauritania**, ecological conditions were favorable in September for the SGR to survive and gradually develop in most parts of the country.

Morocco ecological conditions were not favorable in September except in a few places in the Draa valleys, Ziz-Ghris and south of the Oriental for SGR to survive. However, the situation will improve in the southeast and south of the country where rainfall was reported recently.

Good rain fall was reported in the SGR breeding areas in **Libya** during the third dekad of September and this will likely improve ecological conditions in those areas.

In **Oman**, ecological conditions remained unfavorable for locusts to persist and breed during September despite the fact that good rains fell in a few places in Muscat, al Amerat, northeast of Ibri, southwest of Yanqul and Dhahera Region during the first dekad of the month.

Moderate to good rainfall was reported in Rajasthan, India near the **Indo-Pakistan** borders during the 2nd and 3rd dekads of September. As a result vegetation is green in those areas that received rain. Temperatures remained high during the day time in these areas.

Dry and hot weather prevailed in most of the NSE outbreak areas where vegetation burning continued forcing locusts to further concentrate in patches of green/unburned vegetation.

In **CAC**, generally cooler and drier weather persisted in September.

In **Madagascar**, the temperature is rising and rainfall is expected to commence soon and leading to improved ecological conditions for the Malagasy locust to survive and breed.

Note: *Changes in the weather pattern can contribute to ecological shift in ETOP habitats and increase the risk of pest outbreaks, resurgence and even emergence of new pests. 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 in **Uzbekistan**.*

*The **Asian migratory locust**, once a univoltin (a single generation per year) insect, 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 and others. Regular monitoring and documenting anomalous manifestations in pest behavior and habitats and timely reporting remain critical to help avoid and minimize potential damages to crops, pasture and subsequent negative impact on livelihoods of vulnerable communities and populations. **End note.***

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

SGR – Western Outbreak Region: The SGR situation remained relatively calm in September in western and northern outbreak areas and only a few isolated solitary adults were detected in a few places. No locusts were reported in the outbreak areas in **Morocco** during September.

The SGR situation was reported relatively quiet in **Chad** and only a few isolated solitary individuals were observed North and southwest of Kalait, West of Guereda, Southeast of Beurkia, and northeast of Salal where surveys were conducted during the first dekad of the month.

In **Mali**, low density solitary hoppers mixed with adults were reported 90 km West of Kidal during the 1st dekad of September. Low density mature and immature adults were also reported 90 km West of Aguel Hoc. During the 2nd dekad of the month, scattered mature and immature adults were reported in Aguel Hoc 35 km west the Adrar des Iforas. During the last dekad of the month SGR was reported in Intadjedite (Achibogho) in the tin-essako circle (the situation in the northern part of the country remains unclear during to the ongoing insecurity situation).

The SGR situation remained calm in **Mauritania** during September and only isolated solitary adults were detected in Tagant, Brakna and Traza, in the central parts of the country. Given the presence of ecological conditions favorable to the

survival and reproduction are expected to have a slight increase in locust numbers in the decades to come. No locusts were reported in Algeria, Libya, or Tunisia during September (CNLA/Chad, CNLCP/Mali, CNLA/Mauritania, CNLAA/Morocco, CNLA/Niger, CNLA/Tunisia, NCDLC/Libya).

Forecast: Given the presence of favorable ecological conditions in a few places in the primary outbreak areas in **Chad, Mali, Mauritania** and **Niger**, localized small-scale breeding is likely during the forecast period (OFDA/AELGA, FAO-ECLO).



SGR situation and potential migration pattern, FAO-DLIS, 9/2015

SGR (Desert Locust): Central Outbreak Region: In **Sudan**, a few scattered adults were reported in irrigated areas along the Nile River and Atbara River. No locusts were detected in other countries during this month and no surveys were carried out in **Yemen**, but some adult locusts may be present in a few places along the Gulf of Aden where rainfall was reported earlier (DLCO-EA, FAO-DLIS, LCC/Oman, PPD/Sudan).

Forecast: Small-scale breeding is likely and may increase locust numbers in the summer breeding areas in the interior of Sudan and western Eritrea during the forecast period (DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Sudan).

SGR - Eastern Outbreak Region: No locusts were reported in Rajasthan, India and only a few scattered adults were detected in **Pakistan** along the Indo-Pakistan borders during surveys carried out in September.

Forecast: Ecological conditions have begun improving for locusts to persist and perhaps breed on a small-scale in these areas, but major SGR activities are not expected during the forecast period (FAO-DLIS, OFDA/AELGA).

Red (Nomadic) Locust (NSE): NSE concentrations persisted in Ikuu-Katavi plains in **Tanzania** and Lake Chilwa plains along Malawi and Mozambique borders. Medium to low density populations were reported in Wembere plains, and Malagarasi Basin in Tanzania, Buzi-Gorongosa and Dimba plains in Mozambique, Lake Chiuta plains in Malawi and Kafue Flats and Lukanga Swamps in Zambia (IRLCO-CSA).

Forecast: Dry weather and vegetation burning will leave the ground bare and force NSE to form groups and swarm that will ultimately lay eggs in the bare grounds at the onset of the seasonal rains anticipated to commence by late October into early November.

IRLCO-CSA continues its appeal to its Member-States for resources to carry out pre-breeding surveys and, where necessary, launch targeted preventive control interventions in the outbreak areas before the onset of the rains which will further complicate the situation breeding (IRLCO-CSA, OFDA/AELGA).

Madagascar Migratory Locust (LMC):

The 3rd phase of the three-phase locust campaign commenced on August 26, 2015 and by September 8, two ground survey teams, one health monitoring and environmental team and one pesticide management team were deployed.

During the 3rd dekad of September, ground surveys detected the presence of groups of locust populations and adults in the Antsirabe region. The locusts were seen dispersed towards Bongolava region. A few medium density adult populations were detected in Betsiriry Plains during this period and low to medium density adults were reported in Zomandao plain and Horombe Plateau. Ground operations treated 430 ha between August 26 and September 30th (FAO).

Forecast: Locusts will likely continue appearing in a few places during the forecast period. Given the need for surveying and perhaps controlling areas too large for ground operations to cover, the ground team will be augmented by a helicopter to support aerial operations

Note: The 3rd and final phase of the three-phase project has targeted at bringing the locust populations back to recession and strengthening the capacities of national locust control unit to conduct regular survey and monitoring and institute preventive interventions effectively.

Discussions are underway with the Government of Madagascar to increase the Unilateral Trust Fund by USD two to support the final phase of the campaign

and successfully complete operations. FAO estimated USD 3 million to complete the 3rd phase of the campaign and mitigate resurgence of the locust invasions (FAO). **End Note.**

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): In the CAC region the seasonal locust campaign has ended and only egg field surveys are in progress. During the 2015 locust campaign, more than 4.9 million ha were reported treated in the region with own resources.

Forecast: Locust activities are not expected during the forecast period. (OFDA/AELGA).

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 land, pasture land and affect livelihoods of more than 20 million vulnerable rural 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 these three locust species are relatively new and lack the capacity to effectively prevent and control these pests (The once robust centralized pest control capacity in these countries disappeared with the downfall of the Soviet system leaving each country to fetch for itself).

Currently, 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 these pests pose to the vulnerable 20 plus million people in these regions (for further detail, refer to page 5 above).

Timor and South Pacific: No update was received from East Timor during September and ETOP situation may have been calm during the winter season.

A small-scale outbreak of the yellow-spined bamboo locust (*Ceracris kiangsu*), a serious bamboo defoliator, was reported in northern Laos. GoL, with technical assistance from FAO is controlling the pest (FAO).

African Armyworm (AAW): AAW activities were absent in all outbreak areas in September.

Forecast: AAW season will commence at the foot hills of the seasonal rain in the IRLCO-CSA member-countries at the foot hills of the seasonal rain due to start from late October into November. All trap operators and forecasters are advised to replenish pheromone traps for timely monitoring (IRLCO-CSA, OFDA/AELGA).

Quelea (QQU): QQU bird outbreaks were reported threatening crops in Busia, Siaya and Nyahururu counties and feeding on irrigated rice field in Dominion, Bunyala, and Anyiko in **Kenya**. Control operations are being organized by MoA. QQU bird infestations were also reported in southwest, eastern and northeastern parts of **Ethiopia** where preparations are underway to launch control operations.

Mashonaland East, Mashonaland Central, Mashonaland West, Matebeleland North and Midlands Provinces of **Zimbabwe** where hit by QQU birds and the birds were reported attacking oat, rice and wheat and control operations are in progress (IRLCO-CSA).

Forecast: QQU birds will likely continue being a problem to irrigated crops in **Kenya** and perhaps to winter wheat in **Zimbabwe** during the forecast period (IRLCO-CSA, OFDA/AELGA).

Facts: QQU birds can travel ~ 100 km/day looking for 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 which are capable of consuming and destroying 6,000 to 10,000 kg of seeds/day, enough to feed 12,000-20,000 people/day.

Rodents: No reports were received on rodents during September, however, this pest is a constant threat to crops and produce and always requires active surveillance and preventive interventions to avoid any major threats (OFDA/AELGA).

Front-line countries must remain regular monitoring. Invasion countries should stay alert. DLCO-EA, DLCCs, IRLCO-CSA, national PPDs, CNLAs, DPVs, ELOs, etc., are encouraged to continue sharing ETOP information with stakeholders as often and as early as possible. 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

Control operations were not carried out against SGR in September in the outbreak areas and the pesticide inventories remained unchanged during this month.

Note: A number of SGR prone countries, particularly in West and North West Africa have reported the presence of large quantities of obsolete pesticide stocks in their countries. Some of the stocks are leftovers from the previous locust campaigns, including that of 2003-05 campaign. Safe disposal of these stocks will require considerable amounts of technical and financial resources. End note.

OFDA/AELGA encourages countries to continue exploring alternatives such as IPM to minimize and reduce risks associated with pesticide stockpiling. A judiciously executed triangulation of surplus usable stocks from countries with large inventories to countries where they are much needed is a win-win situation worth considering.

Note: *A Sustainable Pesticide Stewardship (SPS) can considerably 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 ultimately contribute to the national economy. An SPS can be effectively established by linking key stakeholders across political borders. End note.*

OFDA/PSPM/AELGA strongly encourages countries to continue exploring alternatives such as IPM to minimize and reduce risks associated with pesticide stockpiling. A judiciously executed triangulation of surplus usable stocks from countries with large inventories to countries where they are much needed is a win-win situation worth considering.

Note: *A Sustainable Pesticide Stewardship (SPS) can considerably 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 ultimately contribute to the national economy. An SPS can be effectively established by linking key stakeholders in neighbouring countries. **End note.***

Table 1. ETOP Pesticide Inventory in Frontline Countries

Country	Quantity (l/kg) [§]
Algeria	1,190,000~ ^D
Chad	44,500
Eritrea	-16,897~
Ethiopia	-3,975~
Libya	25,000~
Madagascar	206,000~
Mali	32,000 ^D
Mauritania	43,400~
Morocco	3,757,000~ ^D
Niger	75,800~
Oman	14,440~
Senegal	156,000~ ^D
Sudan	632,718~
Tunisia	77,530~
Yemen	22,000@ + 300 kg GM~
[§] Includes different kinds of pesticides in	

ULV, EC and dust formulations; ~ data may not be current; ^D = Algeria and Morocco 225,000 l of pesticides to Madagascar in 2013; Mali donated 21,000 l to Malawi, Mozambique and Tanzania in 2012 and FAO facilitated the triangulation; Mauritania donated 25,000 l to Libya in 2012 and to 30,000 l to Madagascar in 2013; GM = *GreenMuscle*TM (fungal-based biological pesticide); @includes donations from Saudi Arabia

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*
 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 *Calliptamus italicus*
 CLCPRO Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)
 CNLA(A) Centre National de Lutte Antiacridienne (National Locust Control Center)
 CRC Commission for Controlling Desert Locust in the Central Region
 CTE *Chortoicetes terminifera*
 DDLC Department of Desert Locust Control

<i>DLCO-EA</i>	<i>Desert Locust Control Organization for Eastern Africa</i>	<i>NCDLC</i>	<i>National Desert Locust Control, Libya</i>
<i>DMA</i>	<i>Dociostaurus maroccanus</i>	<i>NOAA (US)</i>	<i>National Oceanic and Aeronautic Administration</i>
<i>DPPOS</i>	<i>Department of Plant Protection and Quarantine Services</i>	<i>NSD</i>	<i>Republic of North Sudan</i>
<i>DPV</i>	<i>Département Protection des Végétaux (Department of Plant Protection)</i>	<i>NSE</i>	<i>Nomadacris septemfasciata</i>
<i>ELO</i>	<i>EMPRES Liaison Officers</i>	<i>OFDA</i>	<i>Office of U.S. Foreign Disaster Assistance</i>
<i>EMPRES</i>	<i>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases</i>	<i>PHD</i>	<i>Plant Health Directorate</i>
<i>ETOP</i>	<i>Emergency Transboundary Outbreak Pest</i>	<i>PHS</i>	<i>Plant Health Services, MoA Tanzania</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>PPD</i>	<i>Plant Protection Department</i>
<i>GM</i>	<i>GreenMuscle® (a fungal-based biopesticide)</i>	<i>PPSD</i>	<i>Plant Protection Services Division/Department</i>
<i>ha</i>	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>	<i>PRRSN</i>	<i>Pesticide Risk Reduction through Stewardship Network</i>
<i>IRIN</i>	<i>Integrated Regional Information Networks</i>	<i>QU</i>	<i>Quelea bird</i>
<i>IRLCO-CSA</i>	<i>International Red Locust Control Organization for Central and Southern Africa</i>	<i>SARCOF</i>	<i>Southern Africa Region Climate Outlook Forum</i>
<i>ITCZ</i>	<i>Inter-Tropical Convergence Zone</i>	<i>SGR</i>	<i>Schistoseca gregaria</i>
<i>ITF</i>	<i>Inter-Tropical Convergence Front = ITCZ)</i>	<i>SWAC</i>	<i>South West Asia DL Commission</i>
<i>FAO-DLIS</i>	<i>Food and Agriculture Organizations' Desert Locust Information Service</i>	<i>PSPM</i>	<i>Preparation, Strategic Planning and Mitigation (formerly known as the Technical Assistance Group - TAG)</i>
<i>Hoppers</i>	<i>young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)</i>	<i>Triangulation</i>	<i>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 cases.</i>
<i>Kg</i>	<i>Kilogram (~2.2 pound)</i>	<i>USAID</i>	<i>the United States Agency for International Development</i>
<i>L</i>	<i>Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)</i>	<i>UN</i>	<i>the United Nations</i>
<i>LMC</i>	<i>Locusta migratoriacapito</i>	<i>ZEL</i>	<i>Zonocerus elegans, the elegant grasshopper</i>
<i>LMM</i>	<i>Locusta migratoria migratorioides (African Migratory Locust)</i>	<i>ZVA</i>	<i>Zonocerus variegatus, the variegated grasshopper (This insect is emerging as a fairly new distractive dry season pest, largely due to the destruction of its natural habitat through deforestation, land clearing, for agricultural and other development efforts and from associated weather variability.)</i>
<i>LPA</i>	<i>Locustana pardalina</i>		
<i>MoAFSC</i>	<i>Ministry of Agriculture, Food Security and Cooperatives</i>		
<i>MoARD</i>	<i>Ministry of Agriculture and Rural Development</i>		

Who to Contact:

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

Yeneneh Belayneh, PhD.

ybelayneh@usaid.gov ; Tel.: + 1-202-712-1859

To learn more about our activities and programs, please, visit us at:

<http://www.usaid.gov/what-we-do/working-crises-and-conflict/responding-times-crisis/how-we-do-it/humanitarian-sectors/agriculture-and-food-security/pest-and-pesticide-monitoring>