

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

SUMMARY

The **Desert Locust (SGR¹)** began developing in November in winter breeding areas in northern and northwest Africa where unusually heavy rains were reported during October. More than 2,980 ha were treated against immature locusts (hoppers) in northwestern **Mauritania** during this month. Small-scale breeding was reported in northern **Niger** and scattered solitary adults were detected in winter breeding areas in southwestern and southeastern **Morocco**, northern **Mali** and along the Red Sea coast in **Sudan, Yemen, Saudi Arabia**. No locusts were reported in **Egypt, Eritrea, Ethiopia**, northern **Somalia, Oman** or **Iran, India** or **Pakistan** during November.

Forecast: With temperatures rising and vegetation further developing in areas where heavy rains fell during Tropical cyclones Chapala and Megh and from good rains in early October in northwest Africa, and along the Red Sea coasts, the SGR will likely further develop in northern **Mauritania**, and northwest Africa. Breeding will also likely commence in the Red **Sea coasts in Sudan, Saudi Arabia, Yemen** and northern **Somalia** where

ecological conditions will likely remain favorable during the coming months. A few adults may also appear in **Oman**, southern **Egypt** and northern **Eritrea** during the coming months.

ACTIONS BEING TAKEN

The Western Outbreak Region:

Mauritania deployed six survey, monitoring, control, logistics and support, and health and environment teams to the winter breeding areas in the northern and northwestern parts of the country since the beginning of 2015/2016 SGR campaign. Control operations are in progress in northern **Mauritania** (CNLA/Mauritania).

Morocco dispatched four survey teams to Dakhla Regions in Oued Ed-Dahab, Laayoune-Sakia El Hamra and Guelmim-Oued Noun in the southern part of the country as well as to Figuig province in the southeastern part of the country in November. Survey and monitoring will continue during the forecast period (CNLAA/morocco)

Algeria, Tunisia, Niger, Chad and **Libya** are regularly monitoring the SGR situation and/or conducting surveys in their respective countries when and where possible.

The security situation in northern **Mali** remains an impediment to the locust team to reach important breeding areas. Mature and immature adults that were reported in the western

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

slope of **Tessalit** could not be verified due to lack of access to the region, a situation that is putting an additional burden on adjacent neighboring countries as well.

The Central Outbreak Region:

Sudan: Ground surveys resumed in winter breeding areas in the Red Sea coast on November 12th and continued through the month. Summer breeding areas in the Red Sea State were also surveyed. Taking into account the possibility of locust numbers increasing during the coming months in areas where good rains fell and in anticipation of above normal moisture associated with El Nino effects, PPD/Sudan is considering intensive survey and monitoring.

As part of its preventive strategy, PPD/**Sudan** conducted a national training on SGR survey and control operations in El Obeida during the 1st week of November. Participants from locust affected states, including White Nile, North, West Kordofan and South Kordofan, North and West Darfur and the Red Sea State and two candidates from PPD/HQ received the training.

Yemen: In preparation for the potentially intensive winter and summer breeding seasons, DLMCC/**Yemen** trained 15 staff on SGR survey, monitoring, recoding as well as control operations. The training was conducted at Sana'a University, College of Agriculture in early November.

The DLMCC/**Yemen** also resumed survey operations in the winter breeding areas during the 2nd dekad of November. The ongoing security problem continues to prevent survey and monitoring operations in areas north of Tihama, the southern Gulf of Aden and southern Arabian Sea.

Other countries in the region remain vigilant and monitor the SGR situation across their frontiers.

DLCO-EA: Taking into account the potentially serious SGR invasions in the coming winter and summer breeding seasons, DLCO-EA took a number of proactive steps: - trained MoA/Hargeisa staff in SGR survey, monitoring, reporting, and control interventions during the last week of October 2015; created three survey teams in collaboration with the MoA. The teams have since been deployed to northern Somalia and carrying out survey, monitoring and reporting on the SGR situation.

CRC: Mindful of the potentially significant SGR outbreaks in the Red Sea region and the Arabian Peninsula where the tropical cyclones brought extremely heavy rains and taking the ENSO into account, CRC convened a meeting on December 3rd at its HQ in Cairo. Frontline countries, including Egypt, Sudan, Eritrea, Ethiopia, Yemen, Oman and Saudi Arabia as well as DLCO-EA attended the meeting which discussed a number of issues: - preparing for the winter breeding season, reviewing national contingency plans, strengthening cooperation and coordination between

member-states and other partners, timely sharing of relevant SGR information and collaborations as well exploring means and ways to overcome obstacles that survey and control units face and securing resources for the upcoming locust operations. CRC maintains regular contacts with its member.

FAO: *FAO/ECLC is monitoring the SGR situation on a regular basis and issue updates and alerts. The emergency unit is keeping an eye on the situation and assisting national SGR units in places like **Somalia** and **Yemen**.*

The Eastern Outbreak Region:

Surveys are maintained in Iran, India and Pakistan in anticipation of increased SGR activities in spring and summer breeding.

PSPM:

OFDA/PSPM is closely monitoring the SGR and other ETOP situation, through regular contacts with national entities for the SGR, AAW, NSE and others in frontline countries as well as with FAO, CLCPRO, CRC, DLCO-EA, IRLCO-CSA. PSPM continuous providing updates and advices as well as reaching out to USAID/HQ and field staff as often as necessary.

OTHER ETOPS

Red (Nomadic) Locust (NSE):

Although breeding may have commenced NSE situation remained generally calm in November in the

primary outbreak areas in Tanzania. Ground surveys in Buzi-Gorongosa (Mozambique) and Lake Chilwa/Lake Chiuta plains revealed presence of isolated adult populations and dry vegetation conditions) during early November 2015 (IRLCO-CSA).

Madagascar Migratory Locust

(LMC): The third and final phase of the three-year locust campaign that began in late August, 2015 is in progress.

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): Locust activities have ended in CAC and no further developments are expected until spring, 2016.

African Armyworm (AAW): AAW activities were not reported during November.

Quelea quelea (QQU): QQU bird outbreaks were reported attacking irrigated rice in Busia, Siaya, Kisumu and Kirinyaga counties in **Kenya** where aerial control operations were conducted in Busia and Siaya counties during November (IRLCO-CSA). **End summary**

RÉSUMÉ

Le criquet pèlerin (SGR) a commencé à développer en Novembre dans les zones de reproduction hivernale dans le nord et le nord-Afrique, où des pluies exceptionnellement fortes ont été signalés au cours Octobre. Plus de 2.980 ha ont été traités contre les

criquets immatures (trémies) dans le nord-ouest de la Mauritanie au cours de ce mois. Une reproduction à petite échelle a été signalée dans le nord du Niger et des ailés épars solitaires ont été détectés dans les zones de reproduction hivernale dans le sud-ouest et le sud du Maroc, le nord du Mali et le long de la côte de la mer Rouge au Soudan, au Yémen, en Arabie Saoudite. Aucun criquet n'a été signalé en Egypte, Erythrée, Ethiopie, nord de la Somalie, Oman ou en Iran, en Inde ou au Pakistan au cours de Novembre.

Prévisions: Avec la hausse des températures et de la végétation développer davantage dans les zones où de fortes pluies sont tombées au cours de cyclones tropicaux de Chapala et Megh et de bonnes pluies en début Octobre en Afrique du nord, et le long des côtes de la mer Rouge, le SGR seront probablement développer davantage dans le nord de la Mauritanie, et Afrique du nord-ouest. La reproduction commencera probablement aussi dans les côtes de la mer Rouge, au Soudan, en Arabie saoudite, au Yémen et nord de la Somalie où les conditions écologiques restent favorables seront probablement au cours des prochains mois. Quelques adultes peuvent également apparaître en Oman, au sud de l'Egypte et nord de l'Erythrée au cours des prochains mois.

Mesures prises

Le Western Outbreak Région:
Mauritanie a déployé six sondage, suivi, contrôle, la logistique et le

soutien, et les équipes de santé et d'environnement dans les zones de reproduction hivernale dans les parties nord et nord-ouest du pays depuis le début de la campagne 2015/2016 SGR. Les opérations de lutte sont en cours dans le nord de la Mauritanie (CNLA / Mauritanie).

Maroc envoyé quatre équipes d'enquête aux régions de Dakhla à Oued Ed-Dahab, Laâyoune-Sakia El Hamra et Guelmim-Oued Noun dans la partie sud du pays ainsi que dans la province de Figuig dans la partie sud du pays en Novembre. Enquête et surveillance se poursuivront durant la période de prévision (CNLAA / Maroc)

Algérie, la Tunisie, le Niger, le Tchad et la Libye sont régulièrement de la situation SGR et / ou la réalisation d'enquêtes dans leurs pays respectifs quand et où possible.

*La situation de la sécurité dans le nord du **Mali** continue d'être un obstacle à l'équipe de criquets d'atteindre les zones de reproduction importantes. Adultes matures et immatures qui ont été signalés dans le versant ouest de Tessalit n'a pu être confirmée en raison d'un manque d'accès à la région, une situation qui met une pression supplémentaire sur les pays voisins.*

La centrale Outbreak Région:

Soudan: enquêtes sol repris dans les zones de reproduction hivernale de la côte de la mer Rouge, le 12 Novembre et a continué pendant tout le mois. Les zones de reproduction estivale

dans l'Etat de la Mer Rouge ont également été interrogés. Tenant compte de la possibilité d'augmentation des effectifs acridiens au cours des prochains mois dans les zones où de bonnes pluies sont tombées en Octobre et en raison de l'enquête et de surveillance intensive prévu ci-dessus l'humidité normale associée à des effets d'El Niño, PPD / Soudan envisage.

Dans le cadre de sa stratégie de prévention, PPD / Soudan a organisé une formation nationale sur les opérations de prospection et de lutte SGR à El obiad, Nord-Kordofan, au cours de la 1ère semaine de Novembre. Les participants à partir de 7 criquets États affectés, y compris du Nil Blanc, du Nord, de l'Ouest et du Kordofan Sud-Kordofan, du Nord et de l'Ouest du Darfour et de l'Etat de la Mer Rouge et deux candidats de PPD / HQ ont reçu la formation.

Yémen: *En préparation pour les saisons hiver et été élevage potentiellement intensifs, DLMCC / Yémen formé 15 membres du personnel sur l'enquête SGR, la surveillance, recodage ainsi que les opérations de contrôle. La formation a été menée à l'Université de Sanaa, Collège d'agriculture au début de Novembre.*

Le DLMCC / Yémen a également repris les opérations de prospection dans les zones de reproduction hivernale au cours de la 2ème décade du mois de Novembre. Le problème de sécurité en cours continue d'empêcher l'enquête et des opérations de

surveillance dans les zones au nord de Tihama, le sud du golfe d'Aden et la mer d'Arabie du sud.

D'autres pays de la région gardent un oeil sur la situation SGR à travers leurs frontières.

DLCO-EA: *En tenant compte des invasions potentiellement dévastateurs SGR dans les saisons de reproduction d'hiver et d'été à venir, DLCO-EA a pris un certain nombre de mesures proactives: - formé un certain nombre de personnel MOA / Hargeisa, dans le sondage SGR, le suivi, le reporting et le contrôle interventions au cours de la dernière semaine d'Octobre 2015; créé trois équipes d'enquête en collaboration avec le Ministère de l'agriculture. Les équipes ont depuis été déployés dans le nord de la Somalie et de la réalisation de l'enquête, de surveillance et de rapports sur la situation de SGR.*

CRC: *Conscient des foyers SGR potentiellement importants dans la région de la mer Rouge et la péninsule arabique sud, où les cyclones tropicaux ont apporté des pluies extrêmement fortes dans la région et en prenant en compte l'ENSO, CRC a convoqué une réunion le 3 Décembre à son siège au Caire. Pays de première ligne clé dans la région, notamment **l'Égypte, le Soudan, l'Erythrée, l'Ethiopie, le Yémen, Oman et l'Arabie saoudite** ainsi que **DLCO-EA** ont assisté à la réunion et ont discuté d'un certain nombre de questions. Parmi les questions abordées lors de la réunion*

étaient les suivants: la préparation pour la saison de reproduction hivernale, l'examen des plans d'urgence nationaux, de renforcer la coopération et la coordination entre les Etats membres et d'autres partenaires, le partage en temps opportun des informations pertinentes SGR et les opérations de collaboration, des moyens d'explorer et les moyens de surmonter les obstacles que l'enquête et de contrôle des unités sont confrontés et la sécurisation des ressources nécessaires pour les prochaines opérations de lutte antiacridienne. CRC est également en contact avec régulièrement ses Etats-membres.

FAO: FAO / ECLLO surveille la situation sur une base régulière et mises à jour des enjeux et des alertes. Les unités d'urgence est de discuter les questions de SGR et en aidant les unités nationales SGR dans des endroits comme la Somalie et le Yémen.

L'éclosion de Région de l'Est:

Les enquêtes sont maintenues en Iran, en Inde et au Pakistan, en prévision de l'augmentation des activités de SGR au printemps et en été l'élevage.

OFDA/PSPM:

OFDA / PSPM suit de près la SGR et autre situation ETOP, en gardant des contacts réguliers avec les SGR nationale, AAW, unités NSE dans les pays de première ligne ainsi que la FAO, la CLCPRO, CRC, DLCO-EA, IRLCO-CSA et fournir des mises à jour

et de conseiller aussi souvent le cas échéant.

AUTRES ETOPS

Rouge (Nomade) Locust (NSE): populations NSE et des essaims ont persisté dans les zones des foyers primaires en Octobre et de fortes précipitations dans le bassin Malagarasi élevage déclenché. Autres domaines d'éclosion n'a pas connu l'élevage en raison de l'insuffisance des précipitations au cours Octobre (IRLCO-CSA).

Locust Madagascar migrants (LMC): La troisième et dernière phase de la campagne de trois ans qui a commencé à la fin Août 2015 a continué.

Italien (CIT), du Maroc (DMA), Asiatique migrants (LMI) Criquets en Asie centrale et dans le Caucase (CAC): Activités de criquets ont terminé dans le CAC et pas d'autres développements sont attendus jusqu'au printemps 2016.

Chenille Légionnaire africaine (AAW): activités AAW ont pas été signalés au cours de Octobre.

Quéléa (qqu): oiseaux qqu ont été signalés dans les cultures de riz irrigué dans Busia, Siaya et Nyahururu pays au **Kenya** et dans les champs de sorgho dans Meki dans la vallée du Rift en **Ethiopie** orientale (IRLCO-CSA). Résumé Fin

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 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 able to maintain their inventories. Thanks to the PSMS, many countries have been able to avoid unnecessary procurements or stockpiling of pesticides. This has minimized costly disposal 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.

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.

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 line of communications with

participating countries and keep monitoring progresses of the activities it supported to initiate.

USAID/OFDA's mapping unit has developed a dynamic map that shows the locations of all 300 monitoring 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 relevant data layers, including AAW outbreak frequencies, number of requests for interventions, population load, land use patterns, weather, etc.

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

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:

[USAID/OFDA PPM Website](#)

Detailed information on weather and ecological conditions

Weather and ecological conditions:

Tropical cyclone (TC) Chapala made a landfall on the southern coast of Yemen on November 3rd and caused very heavy rainfall in Yemen and Oman during the first week of November. Tropical cyclone Megh formed in the Arabian Sea and moved west, passing directly over Socotra Island in the northeastern tip of Somalia on 8 November before crossing the Gulf of Aden on 9 November and reaching the southern coast of Yemen at about 00:00 GMT on November 10 making a landfall about 25 km NE of Aden the same day. By the time it made a landfall, Megh had significantly weakened with wind gusts of less than 85

km/h. The cyclone continued to decay rapidly as it moved further inland into the rugged and dry southern highlands where it finally dissipated. (Source: OFDA/PSPM, OCHA/UNOSAT/UNITAR, JTWC, FAO/DLIS).

During the first half of November good rains fell in many places in the winter breeding areas on the Red Sea coastal plains between Zabid (1411N/4318E) and Midi (1619N/4248E). Field surveys indicated that ecological conditions were favorable for DL to breed in several locations in Tihama where vegetation was greening and green in dense amount, and the soil was moist to the depth of almost 50 cm – a conditions which very much favors egg development and hopper formation and produces abundant vegetation of the hoppers (DLMCC/Yemen).

In the western outbreak region ecological conditions were favorable in a number of outbreak areas for locusts to persist and breed during the forecast period.

In **Mali**, low temperatures dominated gradually leading to cold weather during November. The sky was, for the most part, clear with a little cloud coverage. Northeasterly winds dominated the prevailing wind throughout the country. Visibility was reduced over the past two dekads due to haze from dry dust in the northern regions of Koulikoro, Mopti, Timbuktu, Kidal and Gao. Light rain fell in Kayes, Koulikoro and Segou regions during the first two dekads of November. Tombouctou, Gao and Kidal did not receive any rain throughout the period. The ITF has retreated far south of Mali during this period.

In **Morocco**, environmental conditions were favorable in Aousserd and Gueltat Zemmour in the southern part of the country as well as the southeastern part.

In Chad, SGR outbreak areas remained dry and overall, ecological conditions were unfavorable and only a few pockets of green vegetation may be present in certain Kalait and Fada wadis beds. Easterly and northerly winds prevailed over most of the country and temperatures were relatively low heralding the coming of cold weather. Cool to cold and dry weather persisted in SGR areas in Tunisia and Libya with the exception of a few places that received rainfall during November. (CNLA/Mauritania, CNLAA/Morocco, NCLA/Tunisia, CNLP/Mali, NCLA/Chad, CNLC/Libya).

Moderate to heavy rains fell in NSE outbreak areas in Tanzania causing ecological conditions to improve for locusts to breed. Light rains were also reported in parts of southern Malawi and central Mozambique but in generally hot and dry conditions prevailed during November. Vegetation remained dry most of the outbreak areas in Mozambique and Malawi. Moderate to heavy rains were recorded in Kafue Flats in Zambia (IRLCO-CSA).

El Niño / La Niña and SGR outbreak.

El Niño often affects the Central Outbreak Region (the Horn of Africa and the Arabian Peninsula) due to the above average rainfall during winter and wetter than normal long spring Diraa (April-June) in northern Somalia. On the other hand, the western outbreak region is affected more by La Niña, which often brings heavier than normal rains to the summer breeding areas in the northern Sahel. The eastern outbreak region, i.e., Iran, Pakistan or India is not known to be affected by El Niño or La Niña.

Above-average rainfall over the Horn of Africa, southern Red Sea region and Gulf

of Aden could mean increased SGR development on the northwest coast of Somalia similar to an event that occurred during the El Niño of 1997-1998 and a few more upsurges between 1978 and 2004 occurring during El Niño and La Niña years.

During the 1987-89 plague, USG, primarily through OFDA, provided close to USD 60 million to support the international SGR campaign that required more than USD 300 million to abate the plague. In the 2003-05 SGR upsurges that affected more than 25 countries across Sahel, North Africa, the Red Sea coasts and the Middle East, USAID contributed more than USD 21 million, including deploying a DART. The upsurges required hundreds of millions of USD to control and assist affected farmers and rural communities (AELGA/OFDA, FAO-DLIS)

In CAC, generally dry and cool weather persisted during November.

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 generally remained relatively calm in most of the western and northern outbreak areas during November. Only a few solitary immature and or mature adults were reported in Mauritania, Morocco and Mali.

In **Mauritania**, hoppers and groups were treated on some 2,945 ha during this month and survey and control operations are in progress. In **Morocco**, four survey teams were mobilized to Dakhla in Oued Ed-Dahab, Laayoune-Sakia El Hamra and Guelmim-Oued Noun regions in the southern part of the country as well as in Figuio Province in the southeastern part of the country during November. The teams detected low density (10-100 insect/ha) solitary immature and mature adults in areas ranging from 3 to 10 hectares in the Dakhla-Oued Ed-Dahab-Lagouira regions. A dozen isolated immature adults were also detected near Bouarfa in Figuig region in the southeastern part of the country.

No surveys were conducted and no locusts were reported in **Chad, Libya** or **Tunisia** during November and ecological conditions were unfavorable and significant locust developments are not expected during the forecast period. (, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, NALC/Chad, NCLC/Libya).

Forecast: Given the presence of favorable ecological conditions from good rains that fell in northern **Mauritania**, western **Algeria** as well as southern and southwestern **Morocco**, SGR will likely persist and breed during the forecast period. The primary outbreak areas in Mali and Niger may also experience localized limited-scale breeding during the forecast period. Other countries will remain calm during the forecast period (CNLA/Mauritania, CNLAA/Morocco, CNLCP/Mali, CNLA/Niger, OFDA/AELGA, FAO-ECLC NALC/Chad, NCLC/Libya,).

SGR (Desert Locust) - Central Outbreak Region: In **Sudan**, ground surveys were carried out in winter breeding areas in the Red Sea coast and summer breeding areas from southwest Deurdab, Haya up to northwest wards to sinkat, and from Musmar, Wadi Haboob, through Adrous, Aryab, wadi Amor upward to Tomala in the Red Sea State. A few low density solitary mature adult locusts (50-100 insects/ha) were detected near Haya and Krimbit in Toker Delta (PPD/Sudan).

In **Yemen**, low density (125 insects/ha) immature and mature solitary adults were detected in several locations in winter breeding areas between Bayt Al Faqih (1430N/4318E) in the south and Suq Abs (1600N/4312E) during the 2nd dekad of November. Copulating adults were also observed between Al Qutai (1454N/4312E) and Al Turbah (1503N/4248E). Other winter breeding areas, especially north Tihama between Suq Abs and Midi and the coastal plains on the Gulf of Aden could not be surveyed due to security problem (DLMCC/Yemen)

In preparation for the potentially intensive winter and summer breeding

seasons, DLMCC/Yemen trained 15 DLMCC staff in SGR survey and control operations as well as the use and handling of new monitoring and reporting equipment. The training was carried out at Agricultural College of Sana'a University in early November.

No locusts were detected during surveys carried out in **Eritrea, Ethiopia, northern Somalia** or **Oman** and no update was received from Saudi Arabia during this period (DLCO-EA, DLMCC/Yemen, FAO-DLIS, LCC/Oman).

Forecast: SGR activities will likely begin developing on the coastal and the interior areas in southern Yemen where Chapala and Megh brought heavy rains. A similar situation is likely in northeastern Somalia and to some extent parts of Oman where heavy rains occurred as a result of the two cyclones that hit the region during the first dekad of November. Sudan, northern Eritrea, southern Egypt, and Saudi Arabia will likely experience locust activities during the coming months (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 November.

Forecast: Significant SGR activities are not expected in the eastern outbreak region during the forecast period (FAO-DLIS, OFDA/AELGA).

Red (Nomadic) Locust (NSE): The NSE situation remained generally calm in November in Tanzania, but breeding may have commenced in the primary outbreak areas. Ground surveys in Buzi-Gorongosa (Mozambique) and Lake Chilwa/Lake

Chiuta plains revealed presence of isolated adult populations and dry vegetation conditions) during early November 2015 (IRLCO-CSA).

Forecast: As a result of the presence of large pre-breeding adult populations and prevailing favorable conditions in Tanzania and Zambia, successful breeding is expected in Ikuu-Katavi, North Rukwa Valley, Wembere plains and the Kafue Flats resulting in increases in locust populations during the forecast period (IRLCO-CSA).

Madagascar Migratory Locust (LMC): The 3rd phase of the three-phase locust campaign that commenced on August 26, 2015 continued.

Forecast: Locusts will likely continue appearing in a few places during the forecast period.

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): The locust seasonal has ended in CAC region.

Forecast: Locust activities are not expected till spring 2016 (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 the locusts pose to the vulnerable 20 plus million people that rely on agriculture and livestock in these regions.

Timor and South Pacific: No update was received from East Timor during November.

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

Forecast: Armyworm outbreaks will likely occur in Malawi, Mozambique, Zambia, Zimbabwe and Tanzania during the forecast period.

All trap operators are advised to replenish pheromone traps and CBAMFEW and non-CBAMFEW forecasters are advised to remain vigilant and report AAW detections on time (IRLCO-CSA, OFDA/AELGA).

Quelea (QQU): QQU birds were reported attacking irrigated rice crops in Busia, Siaya and Nyahururu countries in Kenya and sorghum in Meki in the eastern Rift Valley in Ethiopia (DLCO-EA, IRLCO-CSA).

Forecast: QQU bird outbreaks will likely continue threatening irrigated crops in Kenya, and go into breeding a season in other counties 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 update was received on rodents for November, 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 maintain regular monitoring. Invasion countries should stay alert. DLCO-EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, national DPVs and PPDs, ELOs, etc., are encouraged to continue sharing ETOP information with stakeholders as often and timely as possible. Lead farmers and community forecasters must remain vigilant and report ETOP detections to relevant bodies immediately.

Inventories of Pesticide Stocks for ETOP Prevention and Control

Control operations treated 2,983 ha in northern Mauritania during November. The pesticide inventory in other countries remained unchanged (no update from Madagascar).

Note: Countries with SGR invasions, particularly in West and North West Africa reported the presence of obsolete pesticide stocks some of which are leftovers from the previous locust campaigns, including that of 2003-05 campaign. Safe disposal of these stocks will require considerable financial and technical 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 encourages countries to continue 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 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	25,000~
Morocco	3,757,000~ ^D
Niger	75,800~
Oman	14,440~
Senegal	156,000~ ^D
Sudan	632,718~
Tunisia	77,530~ (68,514 obsolete)
Yemen	22,000@ + 300 kg GM~

[§]Includes different kinds of pesticide and formulations - ULV, EC and dust; ~ data not 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 10 K l donated by 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	IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa
CERF	Central Emergency Response Fund	ITCZ	Inter-Tropical Convergence Zone
CIT	<i>Calliptamus italicus</i>	ITF	Inter-Tropical Convergence Front = ITCZ)
CLCPRO	Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)	FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service
CNLA(A)	Centre National de Lutte Antiacridienne (National Locust Control Center)	Hoppers	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)
CRC	Commission for Controlling Desert Locust in the Central Region	JTWC	Joint Typhoon Warning Center
CTE	<i>Chortoicetes terminifera</i>	Kg	Kilogram (~2.2 pound)
DDLC	Department of Desert Locust Control	L	Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)
DLCO-EA	Desert Locust Control Organization for Eastern Africa	LCC	Locust Control Center, Oman
DLMCC	Desert Locust Monitoring and Control Center, Yemen	LMC	<i>Locusta migratoriacapito</i>
DMA	<i>Dociostaurus maroccanus</i>	LMM	<i>Locusta migratoria migratorioides</i> (African Migratory Locust)
DPPQS	Department of Plant Protection and Quarantine Services, India	LPA	<i>Locustana pardalina</i>
DPV	Département Protection des Végétaux (Department of Plant Protection)	MoAFSC	Ministry of Agriculture, Food Security and Cooperatives
ELO	EMPRES Liaison Officers	MoARD	Ministry of Agriculture and Rural Development
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases	NALC	National Agency for Locust Control
ETOP	Emergency Transboundary Outbreak Pest	NCDLC	National Center for the Desert Locust Control, Libya
Fledgling	immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed	NOAA (US)	National Oceanic and Aeronautic Administration
GM	GreenMuscle® (a fungal-based biopesticide)	NSD	Republic of North Sudan
ha	hectare (= 10,000 sq. meters, about 2.471 acres)	NSE	<i>Nomadacris septemfasciata</i>
IRIN	Integrated Regional Information Networks	OFDA	Office of U.S. Foreign Disaster Assistance
		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
		QU	<i>Quelea</i> bird
		SARCOF	Southern Africa Region Climate Outlook Forum
		SGR	<i>Schistoseca gregaria</i>
		SWAC	South West Asia DL Commission

PSPM Preparation, Strategic Planning and Mitigation (formerly known as the 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 cases.

USAID the United States Agency for International Development

UN the United Nations

ZEL Zonocerus elegans, the elegant grasshopper

ZVA 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.)

Who to Contact:

Should 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:

Yeneneh Belayneh, PhD.

ybelayneh@usaid.gov

Tel.: + 1-202-712-1859

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

[USAID/OFDA PPM Website](#)