Emergency Transboundary Outbreak Pest (ETOP) Situation Update for December, 2015 with a Forecast till mid-February, 2016

Un résumé en français est inclus

SUMMARY

The **Desert Locust (SGR[1])** situation continued developing in December in winter breeding areas in northwest Africa and along the Red Sea coasts. Control operations treated some 908 ha in **Mauritania** and **Morocco** during this period. Small-scale breeding was reported in northern **Niger** and northern **Mali**. Isolated adults were detected along the Red Sea coasts in **Sudan** and **Saudi Arabia** and **Yemen**. Hatching was reported in Al Habria in **Yemen** during the first dekad of December. No locusts were reported in other outbreak or invasion countries in the western, central or eastern outbreak regions during this month.

Forecast: Western **Mauritania** may witness 2nd generation breeding and southwestern **Morocco**, northern **Mali** and **Niger** will likely continue experiencing limited locust activities during the forecast period. Small-scale breeding will likely occur along the Red Sea coasts in **Sudan**, **Eritrea**, **Saudi Arabia** and **Yemen** and northern **Somalia**, particularly in areas where ecological conditions are still favorable due to the two tropical cyclones from late October and early November, 2015. A few adults may appear in **Oman** and southern **Egypt** but **Iran**, **India** and **Pakistan** will likely remain calm during the forecast period.

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

ACTIONS BEING TAKEN

The Western Outbreak Region:

***Mauritania** launched the 2015/2016 locust campaign on September 18, 2015. Since then the nine deployed teams composed of survey, monitoring, control, logistics support and environment teams to winter breeding and outbreak areas in the northern, northwestern and the central regions continue monitoring, surveillance and control interventions. As of November 2nd the teams have controlled locusts on 3,915 ha (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 and survey, monitoring and targeted control operations will continue during the forecast period.*

*In the spirit of south-south cooperation, **Morocco** donated 10,000 l of pesticide to **Mauritania** and 100,000 l to **Madagascar** in December, 2015 (CNLAA/morocco)*

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

*The security situation in northern **Mali** and southern **Yemen** remains an impediment to the locust teams to reach important breeding and outbreak areas.*

The Central Outbreak Region:

***Sudan**: PPD/Sudan continued surveys in winter breeding areas in the Red Sea coast where vegetation was green or greening and soil is moist and increased precipitation associated to **El Nino (ENSO**) effects is expected (PPD/Sudan).*

*As part of its preventive strategy, **Sudan's** national Locust Control Unit and FAO-CRC jointly organized a training course on Health and Environmental Impacts and Standards in SGR operations. The training was conducted from 13-16, December in Port Sudan. Thirteen (13) participants from PPD, HQ and the locust affected States participated in the training. In November, PPD/Sudan conducted refresher training on survey and control of locusts for participants from the locust outbreak and/or invasion States, namely the White Nile, North, West and South Kordofan, North and West Darfur and the Red Sea State and* PPD/HQ.

***Yemen:** In preparation for the potentially intensive winter and summer breeding in the coastal plains in Tehama and Gulf of Aden from December 2015 to April 2016 and summer breeding in the interior of the country in Marib, Aljof, Shabwah and Hadhramout governorates from May to June, DLMCC/**Yemen** trained 15 college students on SGR survey, monitoring, recoding as well as control operations in early November. The training was conducted at Sana'a University, College of Agriculture, Plant Protection Department. It is anticipated that those that received training on SGR will likely assist during the upcoming locust operations when needed. Surveys that were resumed in winter breeding areas during the 2nd dekad of November are in progress in accessible areas. The ongoing security problem continues to be an impediment to surveying, monitoring and possibly control operations north of Tihama, the southern Gulf of Aden and in areas adjacent to the southern Arabian Sea.*

***Yemen/**MoAI (with the participation of DPP and DLMCC) submitted an action plan/proposal to FAO/Yemen to solicit funding in the amount of 14,540,500 YR (some 67,000) to support survey, monitoring, and control interventions during winter and summer breeding seasons. The action plan/proposal also includes training farmers on monitoring and control interventions in areas that are inaccessible to the MoAI and DLMCC staff due to the ongoing insecurity situation.*

Other countries in the region are on alert remain monitoring the SGR situation across their frontiers.

***DLCO-EA**: Given the potentially serious development/outbreak of SGR during the coming breeding seasons, DLCO-EA took a number of proactive steps. It trained Hargeisa based MoA*

staff in SGR survey, monitoring, reporting and control interventions during the last week of October 2015. It also created three survey teams in collaboration with the MoA. The teams have since been carrying out survey, monitoring and reporting on the SGR situation in northern ***Somalia****.*

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 forecast on 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. The meeting focused on 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, and exploring means and ways to overcome obstacles that survey and control units face, including securing resources for the upcoming locust operations. CRC maintains regular contacts with its member states.*

FAO: *FAO/ECLO is monitoring the SGR and other locust situation on a regular basis and issues 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****.*

PSPM: *OFDA/PSPM is closely monitoring the SGR and other ETOPs through regular contacts with colleagues at the national PPD/DPV and ETOP units as well as international organizations, including FAO, CLCPRO, CRC, DLCO-EA, IRLCO-CSA and others.*

PSPM will continue 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): NSE began breeding in all outbreak areas. In Tanzania, breeding began earlier due to abundant November rainfall. The presence of large parental populations and good rainfall in the primary outbreak areas are expected to have created suitable conditions for NSE to breed and increase (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 remained calm in CAC and no further developments are expected until spring, 2016.

African Armyworm (AAW): AAW outbreaks were reported in several districts in **Malawi** where affected farmers carried out control operations with material and technical assistance from the MoA (IRLCO-CSA).

***Quelea quelea* (QQU)**: QQU bird outbreaks were reported attacking irrigated rice crops *in Siaya and Kisumu Counties in* **Kenya** *during December. Aerial control operations were undertaken by MoA* in collaboration with DLCO-EA (IRLCO-CSA).

Increased awareness among national authorities and the support from USAID/OFDA and other humanitarian/ development partners have helped frontline and 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 at the national level for the prevention and control of SGR.

End summary

RÉSUMÉ

Le (SGR) situation acridienne a poursuivi le développement dans les zones de reproduction hivernale du nord-ouest Afrique et le long des côtes de la mer Rouge en Décembre. Opérations de lutte ont traité ailés et de larves sur quelques 908 ha en **Mauritanie** et au **Maroc** au cours de cette période. Une reproduction à petite échelle a été signalée dans le nord du **Niger** et le nord du **Mali**. Des ailés isolés ont été signalés le long des côtes de la mer Rouge, au **Soudan** et en **Arabie saoudite** et au **Yémen**. Incubation a été rapporté dans Al Habria au **Yémen** au cours de la première décade de Décembre. Aucun criquet n'a été signalé dans les autres pays de l'apparition ou de l'invasion pendant ce mois.

Prévisions: Mauritanie occidentale peut assister 2e élevage de génération et le sud-ouest du **Maroc**, le nord du Mali et du **Niger** sera probablement continuer de connaître les activités de criquets limitées au cours de la période de prévision. Une reproduction à petite échelle aura probablement lieu le long des côtes de la mer **Rouge**, au **Soudan, l'Erythrée, l'Arabie saoudite** et le **Yémen** et le nord de la **Somalie**, en particulier dans les zones où les conditions écologiques sont toujours favorables en raison des cyclones tropicaux de la fin Octobre et début Novembre, 2015. Quelques-uns adultes peuvent apparaître à Oman et sud de l'Egypte, mais l'Iran, Inde et Pakistan vont probablement rester calme pendant les mois à venir.

Mesures prises

L'éclosion de Région de l'Ouest:

La Mauritanie a lancé la campagne 2015/2016 acridienne le 18 Septembre, 2015. Depuis lors, les neuf équipes déployées composées d'enquête, de contrôle, de soutien logistique et de l'environnement aux équipes de zones de reproduction et les éclosions hivernales dans les régions du nord, du nord-ouest et le

centre de surveillance continuent , les interventions de surveillance et de contrôle. A partir du 2 Novembre, les équipes ont contrôlé sauterelles sur 3.915 ha (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 de Figuig province dans la partie sud du pays et de l'enquête, le suivi et ciblé opérations de contrôle se poursuivront au cours de la période de prévision.

Dans l'esprit de la coopération Sud-Sud, le **Maroc** a fait don de 10 000 litres de pesticide en **Mauritanie** et 100 000 l à **Madagascar** en Décembre 2015 (CNLAA / Maroc). Dans le cadre de la coopération sud-sud, le a fait don de 10 000 litres de pesticide en et 100 000 l à en Décembre, 2015 (CNLAA / Maroc)

Algérie, la **Tunisie**, **le Niger**, le **Tchad** et la **Libye** continuer à surveiller la situation de SGR et la réalisation d'enquêtes dans leurs pays respectifs quand et où possible.

La situation de la sécurité dans le nord du Mali et le sud du Yémen reste un obstacle aux équipes de criquets d'atteindre les zones de reproduction importantes.

La centrale Outbreak Région:

Soudan: PPD / Soudan a continué enquêtes dans les zones de reproduction hivernale dans la côte de la mer Rouge, où la végétation était verte ou écologisation et le sol est humide et les précipitations accru associé à El Nino (ENSO) effets est attendu (PPD / Soudan).

Dans le cadre de sa stratégie préventive, Unité de lutte antiacridienne nationale du **Soudan** et de la FAO-CRC organisé conjointement un cours de formation sur la santé et l'environnement et les normes dans les opérations SGR. La formation a été réalisé du 13-16 Décembre à Port-Soudan. Treize (13) participants de PPD, HQ et la sauterelle États touchés ont participé à la formation. En Novembre, PPD / Soudan a mené une formation d'appoint sur l'enquête et le contrôle des criquets pour les participants de la sauterelle les États touchés, à savoir le Nil Blanc, du Nord, de l'Ouest et le Sud-Kordofan, du Nord et de l'Ouest du Darfour et de l'Etat de la Mer Rouge et du PPD / HQ.

Yémen: En préparation pour l'hiver et l'été la reproduction potentiellement intensive dans les plaines côtières de Tehama et le golfe d'Aden depuis Décembre ici à 2015 à Avril 2016 et la reproduction estivale dans l'intérieur du pays à Marib, Aljof, Shabwah et Hadhramout gouvernorats de Mai à Juin, DLMCC / Yémen a formé 15 étudiants de niveau collégial sur l'enquête SGR, la surveillance, recodage ainsi que les opérations de contrôle au début de Novembre. La formation a été menée à l'Université de Sanaa, Collège d'Agriculture, ministère de la protection des végétaux. Il est prévu que ceux qui ont reçu une formation sur SGR sera

probablement aider pendant les prochaines opérations de lutte antiacridienne en cas de besoin. Les enquêtes qui ont été repris dans les zones de reproduction hivernale au cours de la 2ème décade de Novembre sont en cours dans les zones accessibles. Le problème de sécurité en cours continue d'être un obstacle à l'arpentage, le suivi et éventuellement des opérations de contrôle au nord de Tihama, le sud du golfe d'Aden et dans les zones adjacentes à la mer d'Arabie du sud.

Yémen/MoAI (avec la participation de la DPP et DLMCC) a présenté un plan d'action / proposition de la FAO / Yémen à solliciter des financements d'un montant de 14.540.500 YR (certains 67.000) pour soutenir l'enquête, la surveillance et les interventions de contrôle pendant les saisons de reproduction hivernales et estivales . La proposition de plan d'action / comprend également la formation des agriculteurs sur les interventions de surveillance et de contrôle dans les zones qui sont inaccessibles au personnel MoAI et DLMCC en raison de la situation d'insécurité permanente.

D'autres pays de la région restent vigilants et de surveiller la situation de SGR à travers leurs frontières.

DLCO-EA: Compte tenu de l'potentiellement grave développement / foyer des SGR pendant les saisons de reproduction à venir, DLCO-EA a pris un certain nombre de mesures proactives. Il a formé le personnel MoA base Hargeisa dans les interventions enquête SGR, suivi, reporting et de contrôle au cours de la dernière semaine d'Octobre 2015. Il a également créé trois équipes d'enquête en collaboration avec le Ministère de l'agriculture. Les équipes ont été depuis mènent l'enquête, de surveillance et de rapports sur la situation dans le nord de la Somalie SGR.

CRC: Conscient des foyers SGR potentiellement importants dans la région de la mer Rouge et la péninsule arabique où les cyclones tropicaux ont apporté des pluies extrêmement fortes et de prendre les prévisions sur l'ENSO en compte, **CRC** a convoqué une réunion le 3 Décembre à son siège au Caire. Pays de première ligne, y compris l'Egypte, le Soudan, l'Erythrée, l'Ethiopie, le Yémen, Oman et l'Arabie saoudite ainsi que DLCO-EA ont assisté à la réunion.

La réunion a porté sur la préparation de la saison de reproduction de l'hiver, 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 de l'information et des collaborations SGR pertinentes, et d'explorer les voies et moyens de surmonter les obstacles que l'enquête et les unités de contrôle faire face, y compris l'obtention de ressources pour les prochaines opérations de lutte antiacridienne. CRC entretient des contacts réguliers avec ses Etats membres.

FAO: FAO / ECLO surveille la SGR et autre situation acridienne sur une base régulière et les questions mises à jour et des alertes. L'unité d'urgence est de garder un œil sur la situation et aider les unités nationales SGR dans des endroits comme la Somalie et le Yémen.

L'éclosion de Région de l'Est: Les enquêtes sont maintenus en **Iran**, l'Inde et le **Pakistan.**

PSPM: OFDA/PSPM suit de près la SGR et d'autres **ETOPS** par des contacts réguliers avec des collègues dans les unités nationales PPD / DPV et ETOP ainsi que les organisations internationales, dont la FAO, la CLCPRO, CRC, DLCO-EA, IRLCO-CSA et d'autres.

PSPM continuera de fournir des mises à jour et des conseils ainsi que tendre la main à l'USAID / HQ et le personnel sur le terrain aussi souvent que nécessaire.

AUTRES ETOPS

Rouge (Nomade) Locust (NSE): NSE a commencé l'élevage dans toutes les aires grégarigènes. En Tanzanie, l'élevage a commencé plus tôt en raison d'abondantes précipitations Novembre. La présence de grandes populations parentales et de bonnes précipitations dans les zones des foyers primaires sont censés avoir créé des conditions appropriées pour NSE pour se reproduire et augmentation (IRLCO-CSA).

Locust Madagascar migrateurs (LMC): La troisième et dernière phase de la campagne de trois ans qui a commencé à la fin Août, 2015 est en cours.

Italien (CIT), du Maroc (DMA), Asiatique migrateurs (IMT) Criquets en Asie centrale et dans le Caucase (CAC): Activités pèlerin est restée calme dans CAC et pas d'autres développements sont attendus jusqu'au printemps 2016.

Légionnaire africaine (AAW): AAW ont été signalés dans plusieurs districts du Malawi. Agriculteurs touchés ont lancé des opérations de contrôle avec l'assistance matérielle et technique du Moa (IRLCO-CSA).

Quéléa (qqu): les oiseaux ont été signalés qqu attaquer les cultures de riz irrigué à Siaya et Kisumu comtés au Kenya au cours de Décembre. Opérations de lutte aérienne ont été entreprises par le MOA en collaboration avec DLCO-EA (IRLCO-CSA).

Sensibilisation accrue des autorités nationales et l'appui de l'USAID / OFDA et d'autres partenaires humanitaires / développement ont contribué de première ligne et / ou les pays d'invasion primaires en Afrique du Nord et du Sahel en Afrique de l'Ouest, à savoir, l'Algérie, le Tchad, la Libye, le Mali, la Mauritanie, le Maroc, le Niger, Sénégal et Tunisie pour établir unité autonome pour la prévention et le contrôle des SGR.
Résumé Fin

OFDA's Contributions to ETOP Activities

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 intentions 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. It 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 more than 25 million 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: Extremely heavy rainfalls from the Tropical cyclones (TC) Megh and Chapala during the last week of October and the 1st week of November that drenched the southern Red Sea coastal areas, Hadhramout and Shabwah governorates, Gulf of Aden and the interior of **Yemen** as well as western **Oman** and the surrounding areas, ecological conditions remained favorable for locusts to persist and breed (TC 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. The TC significantly weakened and rapidly decayed as it moved further inland into the rugged and dry southern highlands in Hadhramout and Shabwah governorates where it drenched vast areas with very heavy rain causing favorable conditions to persist in several locations including Tihama are covered with dense green vegetation and moist to the depth of almost 50 cm – these conditions very much favor egg developments, hatching and hopper bands and groups (OFDA/PSPM, OCHA/UNOSAT/UNITAR, JTWC, FAO/DLIS).

In **Sudan**, medium to heavy rains fell in winter breeding areas in Toker Delta, along the central plains and northwest Red Sea hills neighboring **Egypt** during December. Vegetation is almost greening and green in a number of places and will likely create favorable conditions for SGR to develop and 1st generation breeding to commence and increase locust numbers in winter breeding areas in Toker Delta and southern coastal areas during the forecasting period. Intensive survey and close monitoring are recommended.

In **Mauritania**, ecological conditions remained favorable in December for SGR to survive and breed in areas where good rains fell during October in winter-spring breeding areas in the northern, center and northwest.

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 (CNLC/Libya, CNLA/Mauritania, CNLAA/Morocco, NCLA/Tunisia, CNLP/Mali, NCLA/Chad).

Moderate to heavy rains fell in NSE outbreak areas in **Tanzania**. Light and below average rains were reported in **Malawi** and **Zambia** (see table, extracted from an IRLCO-CSA update).

Tanzania	
Kaliua - Malagarasi Basin	429.80 mm
Masenge - Wembere plains	260.40 mm
Muze - Rukwa Valley Plains	249.40 mm
Mpanda - Ikuu-Katavi plains	197.00 mm
Zambia	
Namwala - Kafue Flats	137.20 mm
Malawi	
Ntanja - Lake Chilwa/Lake Chiuta plains	68.90 mm
Makoka - Lake Chilwa/Lake Chiuta plains	44.60 mm

In **Kenya** the short rain season continued through the end of December with above average rains experienced at times. As a result of the rains, ecological conditions improved NSE to persist and breed (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. According to NOAA, **Ethiopia, Somalia, Kenya, Tanzania, Uganda, Burundi**, and **Rwanda** are expected to experience above normal precipitation from October–December, 2015 with El Niño enhanced rainy season leading to wetter than normal short rain season. Rain has already increased across much of this region and some flooding has been witnessed in **Somalia** (NOAA, OFDA/Hydromet).*

*Southern Africa, including **Zimbabwe, Botswana, Namibia, Angola, South Africa, Lesotho, Swaziland**, and the **southern half of Mozambique**, tends to see a drier December–February during an El Niño. Areas of this region, especially South Africa, are very dry right now, after a failed monsoon last year. 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 in these areas, including northwest coast of **Somalia**, much similar to an event that occurred during the El Niño of 1997-1998. A few upsurges were also manifested between 1978 and 2004 during El Niño and La Niña years. Furthermore, above normal precipitation could also lead to increased AAW outbreaks in parts of the region during the coming months.*

During the 1987-89 SGR plague, USG, primarily through OFDA, provided close to

USD 60 million to support the international 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 deployed a 30 day DART and contributed more than USD 21 million to abate the upsurges and assist communities, that were severely affected by the SGR outbreaks. The upsurges required hundreds of millions of USD to control and assist affected farmers and rural communities (OFDA).

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 remained relatively calm in most of the western and northern outbreak areas during December. Only a few solitary immature and or mature adults and/or hopper groups were reported in a few places.

In **Mauritania**, groups of hoppers mixed with solitario-transient adults were reported in the central part of the country and a few low density scattered adults were detected in Tiris Zemmour and Dhakhlet Nouadhibou in the north and northwestern parts of the country. Control operations treated close to 900 ha during December bringing the total areas treated since November 2nd to 3,915 ha.

It is to be noted that since the 2015-2016 locust campaign was launched on September 18, 2015, **Mauritania** has deployed nine (9) teams to the north, northwest and central parts of the country as follows:

- One team to North Trarza (Awkers, Aguilal Fai, Adhm Agjourat);
- Four teams to Inchiri and Adrar (Zgueimir, Amlil, Ifezouiten and Amessaga)
- One team at Dakhlet Noudhibou (Tijirit and Taziazet) and
- Three teams to Tiris Zemmour (Fdeirik, Zouerat and Bir Moghrein) (CNLA/Mauritania).

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.

In **Mali**, small-scale breeding occurred in the Timetrine region in northern part of the country. A similar situation was reported in **Niger** in Tamesna Plains from south of In Abangaharit to the Tazezait Plateau to the Algerian border, where small groups of hoppers and adults were formed towards the end of December. Isolated immature solitary adults were also detected southeast of Air Mountain east of Agadez.

No surveys were conducted and no locusts were reported in **Chad**, **Libya** or **Tunisia** during December although moderate rains fell in southeastern **Libya** (CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, NACLC/Chad, NCLC/Libya).

Forecast: Given the presence of favorable ecological conditions in winter-spring due to good rains that fell in northern **Mauritania**, western **Algeria** as well as southern and southwestern **Morocco** and the presence of a locust populations composed of adults and different stages of hoppers, particularly in central, northern and northwestern **Mauritania**, locust numbers will likely increase and adults will begin moving around during the forecast period (CNLA/Mauritania, CNLAA/Morocco, CNLCP/Mali, CNLA/Niger, OFDA/AELGA, FAO-ECLO NALC/Chad, NLCC/Libya,).

SGR (Desert Locust) - Central Outbreak Region: *Ground surveys continued in winter breeding areas in the Red Sea coast in **Sudan** and no significant locust populations were detected during this month despite the fact that vegetation was green or greening and the soil was moist in areas of recent rainfall. Widespread heavy to moderate rains that fell in winter breeding areas in Tokar Delta and the southern Red Sea coast bordering **Eritrea** created favorable conditions for locusts to further develop and increase in winter breeding areas (PPD/Sudan).*

In **Yemen**, hatching was reported in winter breeding areas on the Red Sea coastal plain in Tehama and Gulf of Aden where low density immature and mature solitary adults were detected in several locations 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 Tehama between Suq Abs and Midi and the coastal plains on the Gulf of Aden could not be surveyed due to security problem (DLMCC/Yemen)

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. **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, Iran or Pakistan** during December**.**

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

Red (Nomadic) Locust (NSE): NSE began breeding in all outbreak areas at the foot hills of the seasonal rains. In **Tanzania** where abundant rainfall was reported in November and egg laying began in November and hatching is expected to have commenced by late December. The light and erratic rains received during November/December in the outbreak areas in **Malawi, Mozambique** and **Zambia** are expected to have created suitable conditions for the NSE to begin breeding (IRLCO-CSA).

Forecast: Hatching will likely increase locust numbers and form hoppers and bands in Ikuu-Katavi and North Rukwa plains in Tanzania and Kafue Flats in Zambia. Despite the localized flooding in Wembere plains and Malagarasi Basin, breeding will likely continue and slightly increase in locust numbers. In Buzi-Gorongosa and Dimba plains in Mozambique and Lake Chilwa/Lake Chiuta plains in Malawi where the seasonal rains began late, hatching is expected to be delayed in January.

It is critical that outbreak areas are regularly surveyed and assessed and any critical locust sightings are reported to concerned entities on a timely basis.

IRLCO-CSA appeals to Member States to provide adequate resources to the Organization to enable it to carry out surveys to assess locust populations and launch control operations as soon as necessary.

Madagascar Migratory Locust (LMC): The 3rd phase of the three-phase locust campaign that commended 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 December.

African Armyworm (AAW): Small-scale AAW outbreaks were reported in Blantyre, Machinga, Salima and Kasungu Agricultural Development Divisions (ADDs) in **Malawi** during December. Affected farmers carried out control operations with material and technical support from the MoA. AAW activities were not reported in other outbreak or invasion countries during this time (IRLCO-CSA).

Forecast: Armyworm outbreaks will likely continue in **Malawi** and probably spread to **Tanzania**, **Mozambique, Zambia** and **Zimbabwe**. Other outbreak or invasion countries, particularly in the central and northern region will likely remain calm during the forecast period

National AAW entities, including AAW coordinators, trap operators and CBAMFEW and non-CBAMFEW forecasters are advised to remain vigilant, monitor trap catches and report AAW detections to concerned authorities rapidly to enable timely interventions (IRLCO-CSA, OFDA/AELGA).

Quelea (QQU): QQU birds were reported attacking irrigated rice crops in Kisumu and Siaya countries in Kenya and aerial control operations were launched by the MoA in collaboration with DLCO-EA that provide spray aircraft and pilots. There were no reports of QQU outbreaks in **Malawi, Mozambique, Tanzania, Zambia** or **Zimbabwe** where the birds began breeding with the onset of the rainy season (DLCO-EA, IRLCO-CSA).

Forecast: QQU outbreaks will likely continue threatening irrigated crops in **Kenya** while the birds will continue breeding in other countries in the region through February (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).

Rodents: *No update was received on rodent pests during December, however, these pests are a constant threat to crops in the field as well as stored produce and must be regularly monitored and abated to the extent possible.*

Front-line countries *must maintain regular monitoring and invasion countries should remain 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 891 ha in **Mauritania** and 17 ha in **Morocco** during December; otherwise ETOP

pesticide inventory has not changed in other countries (no update from Madagascar).

Note: Countries with SGR invasions, particularly in West and North West Africa reported obsolete pesticide stocks, some are leftovers from the 2003-05 and earlier campaigns. Safe disposal of these stocks will require considerable amount of resources. **End note.**

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 in need 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~
Chad	44,500
Eritrea	-16,897~
Ethiopia	-3,975~
Libya	25,000~
Madagascar	206,000~ + 100,000[D]
Mali	27,000
Mauritania	8,109 + 10,000 [D]
Morocco	3,534,000[D]
Niger	75,800~
Oman	14,440~
Senegal	156,000~
Sudan	632,718~
Tunisia	77,530~ (68,514 obsolete)
Yemen	42,000@ + 300 kg GM~

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

~ data not current;

[D] = In December, 2015 Morocco donated 100,000 l of pesticides to Madagascar and 10,000 l to Mauritania;

[D] = In 2013 Morocco donated 200,000 l to Madagascar;

GM = *GreenMuscle*™ (fungal-based biological pesticide);

@includes 10,000 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 (Tree Locust)*
APLC *Australian Plague Locust Commission*
APLC *Australian Plague Locust Commission*
Bands groups of hoppers marching pretty much in the same direction
CAC *Central Asia and the Caucasus*
CBAMFEW *Community-based armyworm monitoring, forecasting and early warning*
CERF *Central Emergency Response Fund*
CIT *Calliptamus italicus (Italian Locust)*
CLCPRO *Commission de Lutte Contre le Criquett 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 (Australian plague locust)*
DDLC *Department of Desert Locust Control*
DLCO-EA *Desert Locust Control Organization for Eastern Africa*
DLMCC Desert Locust Monitoring and Control Center, Yemen
DMA *Dociostaurus maroccanus (Moroccan Locust)*
DPPQS *Department of Plant Protection and Quarantine Services, India*
DPV *Département Protection des Végétaux (Department of Plant Protection)*
ELO *EMPRES Liaison Officers –*

EMPRES *Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases*
ETOP *Emergency Transboundary Outbreak Pest*
Fledgling *immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed*
GM *GreenMuscle® (a fungal-based biopesticide)*
ha *hectare (= 10,000 sq. meters, about 2.471 acres)*
IRIN *Integrated Regional Information Networks*
IRLCO-CSA *International Red Locust Control Organization for Central and Southern Africa*
ITCZ *Inter-Tropical Convergence Zone*
ITF *Inter-Tropical Convergence Front = ITCZ)*
FAO-DLIS *Food and Agriculture Organizations' Desert Locust Information Service*
Hoppers *young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)*
JTWC *Joint Typhoon Warning Center*
Kg *Kilogram (~2.2 pound)*
L *Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)*
LCC *Locust Control Center, Oman*
LMC *Locusta migratoriacapito (Malagasy locust)*
LMM *Locusta migratoria migratorioides (African Migratory Locust)*
LPA *Locustana pardalina*
MoAFSC *Ministry of Agriculture, Food Security and Cooperatives*
MoAI *Ministry of Agriculture and Irrigation*
MoARD *Ministry of Agriculture and Rural Development*
NALC *National Agency for Locust Control*
NCDLC *National Center for the Desert Locust Control, Libya*
NOAA (US) *National Oceanic and Aeronautic Administration*
NSD *Republic of North Sudan*
NSE *Nomadacris septemfasciata (Red Locust)*

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
QQU Quelea Qulelea (Red Billed Quelea bird)
SARCOF Southern Africa Region Climate Outlook Forum
SGR Schistoseca gregaria (the Desert Locust)
SSD Republic of South Sudan
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 Unites 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 dry season pest, largely due to the destruction of its natural habitat through deforestation, land clearing, etc. for agricultural and other development efforts and perhaps due to climate anomalies, etc.).

Who you should contact:

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