

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

SUMMARY

The **Desert Locust (SGR¹)** situation continued developing in winter breeding areas in northwest Africa where control operations treated 430 ha in **Morocco** and **Mauritania** in January. No locusts were reported in **Mali, Chad, Libya, Tunisia** or **Niger** during this time and only some solitary adults were reported in western **Algeria**. Winter breeding areas in **Sudan, Eritrea, Yemen, Saudi Arabia** and northwest **Somalia** remained calm and only a few scattered solitary adults were detected in a few places. No locusts were reported in **Ethiopia, Oman, Iran, Pakistan** or **India** during this period.

Forecast: Southern **Morocco** will likely see small-scale breeding and hopper formations and northern **Mauritania** will experience a slight increase in SGR numbers during the forecast period. If rain falls during the coming months, small-scale breeding could occur along the Red Sea coasts in **Sudan, Eritrea, Saudi Arabia** and **Yemen** and northern **Somalia**. A few adults may appear and breed in **Oman, southern Egypt, southeast Iran** and southwest **Pakistan** 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

*In **Mauritania** six teams continue surveillance, monitoring and targeted control interventions in winter-spring breeding areas in Inchiri, Dakhlet Noudhibou and Tiris Zemmour. The country treated 4,045 ha since November 2nd, 2015.*

*In **Morocco** three teams conducted survey and control in Dakhla Region - Oued Ed-Dahab, Laayoune-Sakia El Hamra and Guelmim-Oued Noun in the south as well as Figuig province in the southeastern parts of the country. 301 ha were treated in January (318 ha have been treated since December 23rd). Two fixed-wing Turbo Thrush spray aircraft are on stand-by in the Dakhla-Oued Ed-Dahab Region.*

***Mali** National Locust Control Center organized a strategic planning workshop during the last week of January with a focus on adapting to the ongoing insecurity situation that continues being a hurdle to mobilize survey teams to important locust breeding areas in the northern part of the country.*

The Central Outbreak Region

***Sudan** continued survey in winter breeding areas and is also monitoring **El Nino (ENSO)** events for any adverse effects on SGR. The National Locust Control Unit joined forces with its **Eritrean** counterparts and conducted joint surveys across their*

common borders in the Red Sea region.

DLCO-EA continued monitoring the SGR situation in **Somalia** and other member-countries in collaboration with national counterparts.

The security situation in parts of **Yemen** remains an impediment to launch survey and to monitor crucial breeding and outbreak areas (north of Tihama, Gulf of Aden Region, Southern coastal areas and the interior) where the locust situation is not clear.

USAID/OFDA/PSPM closely monitors ETOPs through a regular dialogue with national PPDs/DPVs, Migratory Pest Units and regional and international organizations, including FAO, CLCPRO, CRC, DLCO-EA, IRLCO-CSA. It provides timely updates and advices to HQ, field staff, partners and others as often as necessary.

OTHER ETOPS

Pine Bark Beetle Outbreaks

Honduras is suffering from large-scale outbreaks of the pine bark beetle (PBB) which is destroying pine and other trees. GoH has declared a national disaster and deployed the armed forces to tackle the problem. The country is appealing to the international community for assistance to abate the outbreak.

The pest is also reported affecting several other countries in Central and South American, including **Belize**,

Brazil, El Salvador, Guatemala, Nicaragua and impacting forest ecology and agroforestry.

The beetles are severely affecting pine and other trees in the **USA, Canada** and **Mexico** where millions of trees are dying. In North America (the Rocky Mountains) the outbreaks are attributed to warmer than normal winter temperatures over the past decade which created favorable ecological conditions for the beetles to persist. This is compounded by the lower than normal precipitation that weakens the trees (NPS).

Red (Nomadic) Locust (NSE): No update was received at the time this report was compiled, but NSE breeding is expected to have continued in **Tanzania** and a few places in other primary outbreak areas where ecological conditions are favorable (IRLCO-CSA).

Madagascar Migratory Locust (LMC): The 3rd 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, Central Asia and the Caucasus (CAC): CAC will remain calm until spring.

African Armyworm (AAW): AAW outbreaks were reported in **Malawi** in January. A similar situation is likely in southern **Tanzania** and parts of **Mozambique**.

Quelea quelea (QQU): QQU bird outbreaks were not reported during this period.

Increased awareness among national authorities and the support from USAID/OFDA, FAO 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 continué de développer en Janvier dans les zones de reproduction hivernale du nord-ouest Afrique où des opérations de lutte ont traité 430 ha dans le sud du **Maroc** et le nord de la **Mauritanie**. Aucun criquet n'a été signalé au **Mali**, le **Tchad**, la **Libye**, la **Tunisie** ou le **Niger** pendant ce temps et seuls quelques ailés solitaires ont été signalés dans l'ouest de la frontière **Algérie Mauritanie**. La situation est restée calme dans les zones de reproduction hivernale au **Soudan**, l'**Érythrée**, le **Yémen** et l'**Arabie saoudite** et à seulement quelques ailés solitaires épars ont été détectés au cours de ce mois. Ailés solitaires ont été signalés sur les côtes nord-ouest dans le nord de la **Somalie**. Aucun criquet n'a été signalé en **Ethiopie**, **Oman**, l'**Iran**, le **Pakistan** ou l'**Inde** au cours de ce mois.

Prévisions: Sud du **Maroc** verra probablement reproduction et de trémies formations à petite échelle au cours de la période de prévision. Nord de la **Mauritanie** connaîtra une légère augmentation du nombre SGR. Une reproduction à petite échelle est probablement le long des côtes de la mer Rouge au **Soudan**, l'**Erythrée**, l'**Arabie saoudite** et le **Yémen** et peut-être nord de la **Somalie** en cas de pluies pendant les mois à venir. Quelques adultes peuvent apparaître en **Oman**, au sud de l'**Egypte**, au sud-sud-ouest du **Pakistan** et de l'**Iran**.

Mesures prises

L'éclosion de Région de l'Ouest

Mauritanie dépêché six équipes de poursuivre la surveillance, le suivi et les interventions de lutte ciblées dans les zones de reproduction hiverno-printanière dans l'Inchiri, Dakhlet Noudhibou et Tiris Zemmour. 4.045 ha ont été traités depuis le 2 Novembre.

Maroc a envoyé trois prospection et de lutte équipes à Dakhla - Région Oued Ed-Dahab, Laâyoune-Sakia El Hamra et Guelmim-Oued Noun dans le sud ainsi que la province de Figuig dans les régions du sud du pays. Opérations de contrôle ciblées traités 301 ha au cours de ce mois (318 ha ont été traités depuis le 23 Décembre). Deux avions de pulvérisation Turbo Thrush à voilure fixe sont en stand-by dans le Ed-Dahab région de Dakhla-Oued.

Mali Centre national de lutte antiacridienne a organisé un atelier de planification stratégique au cours de la dernière semaine de Janvier avec un accent sur l'adaptation à la situation de l'insécurité persistante qui continue d'être un obstacle à mobiliser des équipes d'enquête dans les zones importantes de reproduction des criquets dans la partie nord du pays.

La centrale Outbreak Région:

Soudan PPD / Soudan a continué enquêtes dans les zones de reproduction hivernale et surveille les effets potentiels El Nino (ENSO) sur SGR. L'Unité nationale de lutte antiacridienne ont uni leurs forces avec ses homologues érythréens et mené des enquêtes conjointes à travers leurs frontières communes dans la région de la mer Rouge.

DLCO-EA continue de surveiller la situation acridienne en Somalie et d'autres pays membres, en coopération avec leurs homologues nationaux.

La situation sécuritaire dans certaines régions du **Yémen** reste un obstacle à lancer l'enquête et de surveiller les zones de reproduction et les éclosions cruciales (au nord de la Tihama, région du golfe d'Aden, les zones côtières du sud et de l'intérieur) où la situation acridienne est pas claire.

USAID/OFDA/PSPM surveille étroitement ETOPS à travers un dialogue régulier avec PPD / DPV, unités ravageurs migrants

nationaux et les organisations régionales et internationales, dont la FAO, la CLCPRO, CRC, DLCO-EA, IRLCO-CSA. Il fournit des mises à jour régulières et des conseils au QG, le personnel de terrain, les partenaires et les autres aussi souvent que nécessaire.

AUTRES ETOPS

Écorce de pin ponderosa flambées

Honduras souffre d'épidémies à grande échelle de l'insecte d'écorce de pin (PBB), qui est en train de détruire pins et autres arbres. Gouvernement haïtien a déclaré une catastrophe nationale et déployé ses forces armées pour lutter contre le problème. Le pays a fait appel à la communauté internationale pour une aide pour contrôler l'épidémie. Le ravageur est également signalé affectant plusieurs autres pays d'Amérique centrale et du Sud, dont le **Belize**, le **Brésil**, **El Salvador**, le **Guatemala**, le **Nicaragua** et un impact sur l'écologie des forêts et de l'agroforesterie.

Les coléoptères sont également de graves répercussions sur le pin et d'autres arbres aux **Etats-Unis**, le **Canada** et le **Mexique**, où des millions d'arbres meurent de coléoptère.

Les épidémies, en particulier en Amérique du Nord (les Montagnes Rocheuses) sont attribués à des températures plus clémentes de l'hiver qui ont créé des conditions écologiques favorables pour les

coléoptères de persister et l'précipitations inférieures à la normale qui affaiblissent les arbres (SPN).

Rouge (Nomade) Locust (NSE):

Aucune mise à jour a été reçue au moment où ce rapport a été rédigé, mais la reproduction NSE devrait s'être poursuivie en Tanzanie et quelques endroits dans d'autres zones de foyer primaire où les conditions écologiques sont favorables (IRLCO-CSA).

Locust Madagascar migrants

(LMC): La phase 3ème et dernière de la campagne de trois ans qui a commencé à la fin Août, 2015 est en cours.

Italien (CIT), du Maroc (DMA), Asiatique migrants (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.

Chenille légionnaire africaine

(AAW): épidémies AAW ont été signalés au Malawi en Janvier. Une situation similaire est probable dans le sud de la Tanzanie et de certaines régions du Mozambique.

Quéléa (qqu):

Quéléa (qqu): épidémies qqu d'oiseaux ont pas été signalés au cours de cette période (DLCO-EA, IRLCO-CSA).

Sensibilisation accrue des autorités nationales et l'appui de l'USAID / OFDA et d'autres partenaires humanitaires / développement ont aidé les pays de première ligne et d'invasion primaire 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, le Sénégal et la Tunisie à établir unité autonome au niveau national pour la prévention et le contrôle des SGR.
Résumé Fin

OFDA's Contributions to ETOP Activities

The online Pesticide Stock Management System (PSMS) that was developed with financial assistance from USAID/OFDA and other partners has been installed in some 65 countries around the globe and is helping participating countries maintain inventories and avoid unnecessary procurements and stockpiling of pesticides. As a result, costly disposal operations have been minimized and the safety and well-being of their citizens and the environment improved.

Thanks to the support from USAID/OFDA and partnering organizations for the tri-state community-based armyworm monitoring, forecasting and early warning (CBAMFEW) project, farmers can now identify and prepare to prevent AAW outbreaks and stop the caterpillars from devastating their crops and pasture. Participating countries expressed their gratitude and commitments to maintain sustainability of the activities initiated through this project. USAID/OFDA/PSPM will maintain line of communications with participating countries and monitor progresses.

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 working with other partners to explore means and ways to expand this innovative technology to benefit other AAW affected farmers and rural communities.

OFDA/PSPM's interests in sustainable pesticide risk reduction in low income countries to strengthen their capacities and help improve safety of vulnerable populations and shared environment continued. OFDA-PSPM intends to extend this initiative to other parts of Africa, the Middle East, CAC etc., as needed.

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

USAID/OFDA is sponsoring project activities through the UN/FAO to help strengthen/re-build national and regional capacity to prevent and control the threats the locusts pose to the 25 million plus vulnerable people that eke a living from agriculture and livestock in CAC. The program is on track and it has enabled collaboration among neighboring countries where joint monitoring,

surveillance, reporting and preventive interventions have been realized to minimize the threats of ETOPs to food security and livelihoods of vulnerable population.

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

Weather and Ecological Conditions

Weather and ecological conditions:

Ecological conditions were favorable in January in winter breeding areas in the southern coastal areas in Sudan, Saudi Arabia, Eritrea, Yemen, and northwestern Somalia for locusts to persist and breed. In Sudan, moderate to heavy rains were reported in south Tovar Delta, along the central areas and northwest Red Sea hills near Egyptian border during the 1st dekad of January. Vegetation was almost green and dense in a number of places and will likely remain favorable for SGR to further develop and increase in Taker Delta and southern coastal areas during the forecasting period. Intensive survey and close monitoring are recommended.

In **Oman**, rainfall was reported during the first dekad of January in the northern part of the country where vegetation is green and ecological conditions are favorable for SGR to persist and breed.

In **Mauritania**, ecological conditions remained favorable during January for the survival and breeding of locusts, particularly in winter-spring breeding areas in the north and northeast in Tiris Zemmour and Nouadhibou Dakhlet where annual vegetation coverage is still green.

In **Mali**, cold weather and cloudy sky with traces of light rain was observed during January. Northeasterly winds dominated much of the country and visibility was

reduced to about 2 km in Timbuktu, Gao and Kidal and 5 km in Kayes, Koulikoro, Sikasso, Segou and Mopti regions. Max and min temperature ranges were between 29°C and 39°C and 10°C and 23°C respectively, throughout the country. With the exception of small patches of greeneries, most of the annual vegetation is dry and so is the soil.

In **Morocco**, ecological conditions remained favorable in *Aousserd, Gueltat Zemmour and Es-Smara* in the southern part of the country for locust to persist and breed during this month. *The min and max temps had a range of 12°C and 17°C and 26°C and 32°C respectively, in the extreme south. The annual vegetation coverage remained well developed in the south between Tichla Aousserd-Zemmour-Gueltat and Es-Smara to the south of Boujdour due to good rains that fell in September and October 2015.*

In **Chad**, SGR outbreak areas remained dry and overall, ecological conditions were unfavorable. Light showers were reported in the extreme south (Snad-Gafsa, 9 mm) and southwest (Kébili et Redaif–Gafsa, 1 mm) **Tunisia** in January; the average max and min temps were 18.3°C and 5.9°C; ecological conditions remained dry with the exception of patches of green vegetation. In **Libya**, satellite imageries show some greenness in SGR breeding areas in western (Alhamada Ahamra), southwestern (Titaghsin and wade Armit), southeast (Eastern Lawenat & Arkno) and in center (Alharouj Alaswad) where light showers may have occurred in the 1st and 2nd dekads of January (CNLC/Libya, CNLA/Mauritania, CNLAA/Morocco, NCLA/Tunisia, CNLP/Mali, FAO-DLIS).

Good rains and low to medium rainfall were reported in **Tanzania** and the rift Valley in Kenya, respectively.

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 (April-June) in northern Somalia. Rain has already increased across parts of eastern Africa and the Horn (NOAA, OFDA/Hydromet).

*Southern Africa - **Namibia, Zimbabwe, Botswana, Angola, South Africa, Lesotho, Swaziland**, and the **southern half of Mozambique** are experiencing severe drought due to **El Niño** effect, especially South Africa is very dry right now due to failed last year's monsoon rains.*

*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. Above normal precipitation could also lead to increased AAW outbreaks.*

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 to cold weather persisted during January.

Note: *Changes in the weather pattern and the rise in temperature can contribute to ecological shift in ETOP habitats and increase the risk of pest outbreaks, resurgence and emergence of new pests. In Uzbekistan, Moroccan locust (DMA) which is normally a low to medium altitude pest has shown a considerable vertical habitat expansion by up to 1,000 feet or 300 meters from its normal ambient altitude due to warmer higher elevations.*

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

*The **Asian migratory locust**, an insect that bred just once a year, recently began exhibiting two generations per year. These anomalous manifestations and phenomena, which are largely attributed to the change in the weather pattern and associated ecological shift, are a serious concern to farmers, rangeland managers, crop protection experts, development and humanitarian partners and others. Regular monitoring, documenting and reporting anomalous manifestations in pest behavior and habitats remain critical to help avoid and minimize potential damages to crops, pasture, livestock and subsequent negative impact on food security and 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: In **Mauritania**, locust numbers increased in the North (Tiris Zemmour) where groups of immature and mature adults, some copulating and laying, with densities ranging from 5,800 to 6,800 individuals/ha mixed with L3 to L5 instar hoppers with densities ranging from a few to 12 larvae /m² were detected in January. Scattered low density mature and immature adults were also detected in Nouadhibou and Inchiri Dakhlet), but decreased in Center (Inchiri Adrar) and the south. Control operations treated 130 ha in Tiris Zemmour and other locations during this month (total areas treated since November 2nd is 4,045 ha).

In **Morocco**, CNLAA teams – 2 in Dakhla-Oued Ed-Dahab Region (Bir-Guendouz GuergueteAousserd-Tichla) and 1 in Laayoune-Sakia AlHamra Region (Es-Smara-Gueltat, Zemmour-Boujdour) continued ground survey in the southern part of the country during January. The teams surveyed 7 locations in Dakhla-Oued Ed-Dahab region around Aousserd and Tichla and controlled solitario-transient maturing and mature copulating and egg laying adults at 1 and 2 insects/m² on 23 ha. Close to 318 ha have been treated since December 23rd. Gueltat Zemmour, south of Boujdour in Laayoune-Sakia Alhamra region remained calm during this month CNLAA/Morocco).

No surveys were carried out and no locusts were reported in **Mali**, **Chad**, **Libya** or **Tunisia** in January.

Forecast: Ecological conditions will further deteriorate in central (Inchiri Adrar) and southern **Mauritania** causing locusts to migrate to winter-spring breeding areas in North and northwest

(Dakhlet Nouadhibou and Tiris Zemmour) regions where favorable ecological conditions exist. Some solitary adults will persist in areas where patches of green vegetation are present. Southern **Morocco** and southwestern **Algeria** will likely experience increased SGR presence during the forecast period (CNLCP/Mali, CNLA/Mauritania, CNLAA/Morocco, CNLA/Niger, OFDA/AELGA, FAO-ECLO, NALC/Chad, NLCC/Libya).

Increased vigilance and timely preventive interventions remain imperative to minimize any significant SGR impact on food security and livelihoods of vulnerable populations.

SGR (Desert Locust) - Central

Outbreak Region: In **Sudan** the SGR situation remained calm during January and only low density scattered solitary individuals were detected in five locations over an area of 1,200 ha in Toker delta basins in Totamap, Bahrara and Eglim and in a couple of places Khor Baraka during surveys that covered 43,500 ha in winter breeding areas along the Red Sea coast from the northern part of the Red Sea State down to the Eritrean border.

During the CRC contingency planning meeting in December, **Sudan** presented an overview of the locust situation and plans and activities being under taken. **DLCO-EA** summarized the SGR situation in northern Somalia and actions being taken. **Eritrea** reported standing up of 3 survey and monitoring camps in Karura, Shieb and Gelalo along the Red Sea coast. Joint survey operations were carried out on the Red Sea coastal plains from Shieb to Karora on the **Sudan-Eritrean** border in January. Similar activities will likely continue with assistance from CRC.

Ethiopia reported the absence of locusts during surveys carried out in Dire Dawa and Jijiga near Somalia border and major developments are not likely during the forecast period unless breeding occurs in **northern Somalia** and swarms form and migrate to eastern **Ethiopia**. The country requested CRC to provide training and technical support as well as financial assistance for maintenance of spray equipment and spare parts, but it ascertained that in the event large-scale SGR outbreaks occur, locally available pesticide formulation facilities can meet demands.

In **Somalia** a few scattered adults were reported in the northwest coast. DLCO-EA coordinated the deployment of one of its spray aircraft to Dire Dawa, **Ethiopia** to support aerial control in northern **Somalia**.

No locusts were detected during surveys carried out near Lake Nasser in the Abu Simbel, Garf Hussein and Allaqi and on the Red Sea coast between Berenice and the Sudan border as well as in subcostal areas near El Sheikh El Shazly and Abraaq and Siwa oasis in **Egypt**. The country has 13 primary locust bases and 52 sub-bases across the country, 18,300 liters of ULV pesticides, 49,770 liters of EC, vehicles, sprayers and campaign equipment ready to be deployed for survey and control operations.

Yemen: *Surveys continued in some winter breeding areas in central and southern Tihama plains between Bayt Al Faqih and Suq Abs. Scattered immature solitary adults were detected mixed with a few mature copulating adults on the Red Sea coast near Al Zuhrah and north of Bajil to near Zabid. Some winter breeding areas from Suq Abs to Midi (1619N/4248E), Gulf of Aden and coastal areas along the Arabian Sea were not*

accessible for survey operations and there is no information on the SGR situation in those areas.

Yemen/DLMCC is concerned that the locust situation could worsen due to lack of resources for regular surveys and the ongoing insecurity in some breeding areas in the country. DLMCC received some assistance from CRC to carry out survey operations and requested additional assistance from FAO country office to cover operating expenses to sustain regular survey and monitoring.

In **Oman**, the SGR situation remained calm during January and no locusts were detected during surveys carried out in several locations in Musandam Governorate and Bureimi, Dakhiliya, Sharqiya and Dhofar regions during this period.

Survey operations detected low numbers of solitary immature adults on the southern Red Sea coastal plains near Jizan in **Saudi Arabia**.

Forecast: SGR numbers will gradually increase and breed in winter breeding areas where mature adults were detected - Toker Delta, Khor Baraka and central coastal plains - in Sudan. If rain falls in the coming months, small-scale breeding will likely occur along the Red Sea coasts in **Sudan, Eritrea, Saudi Arabia** and **Yemen** and perhaps northern **Somalia**. A few adults may also appear and breed in **Oman** and southern **Egypt** (DLMCC/Yemen, LCC/Oman, PPD/Sudan).

SGR - Eastern Outbreak Region: No locusts were reported in **India, Iran** or **Pakistan** during January.

Forecast: Small-scale breeding may occur in southeast **Iran** and southwest

Pakistan during the forecast period (FAO-DLIS, OFDA/AELGA).

Red (Nomadic) Locust (NSE): No update was received at the time this report was compiled, but NSE breeding is expected to have continued in Tanzania and a few places in other primary outbreak areas where ecological conditions are favorable (IRLCO-CSA).

Forecast: Hatching, hopper band and group formations will likely increase in Ikuu-Katavi and North Rukwa plains in Tanzania and Kafue Flats in Zambia. Locust numbers will likely increase in Wembere plains and Malagarasi Basin. Delayed hatching is expected in Buzi-Gorongosa and Dimba plains in Mozambique and Lake Chilwa/Lake Chiuta plains in Malawi where the seasonal rains were late.

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

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).

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

African Armyworm (AAW): Small-scale AAW outbreaks were reported in **Malawi** and a similar situation may have been present in southern **Tanzania** and northern **Mozambique**.

Forecast: AAW outbreaks will likely continue in **Malawi** and probably in **Tanzania, Mozambique** during the forecast period. AAW coordinators and CBAMFEW and non-CBAMFEW forecasters are advised to remain vigilant and report trap catches to concerned authorities rapidly for timely interventions (IRLCO-CSA, OFDA/AELGA).

Quelea (QQU): QQU bird outbreaks were not reported in most of the primary outbreak areas during January, but colonies were observed in a few places in Tanzania and elsewhere in the region

Forecast: QQU outbreaks will likely threaten irrigated crops in a few places.

Facts: QQU birds can travel ~100 km/day in search of food. An adult QQU bird can consume 3-5 grams of grain and destroy the same amount each day. A medium density QQU colony can contain up to a million or more birds and is capable of consuming and destroying 6,000 to 10,000 kg of seeds/day, enough to feed 12,000-20,000 people/day (OFDA/AELGA).

Rodents: No update was received on rodent pests for January. However, rodents are a constant threat to crops in the field as well as storage facilities and must be regularly monitored and abated.

Pine Bark Beetle Outbreaks:

Honduras and North America are experiencing large-scale outbreaks of the pine bark beetle (PBB) which is destroying pine and other trees. GoE Honduras has declared a national disaster and deployed its armed forces to tackle the problem. It is appealing to the international community to provide assistance to control the outbreak. The pest is reported affecting several other countries in Central and South American, including **Belize, Brazil, El Salvador, Guatemala, Nicaragua** and impacting agroforestry and the countries' lumber industry.

The PBB is also severely affecting pine and other trees in the **USA, Canada and Mexico** where millions of trees are dying from beetle damage (the map below shows areas in North America, where the PBB outbreak is killing trees. source: National Park Service - NPS).

The eggs and grubs (larvae) of the beetle that normally cannot survive severe cold winter and hibernate under dead leaves and barks are now able to adjust to the relatively milder winter temperatures

that result from the increasingly warmer winter weather in the Rocky Mountains over the past decade. In addition, a prolonged period of lower than normal



precipitation has weakened the trees. These two factors combined have created favorable ecological conditions for the beetles to persist and break out

over vast areas (NPS).

Front countries need to maintain regular monitoring and invasion countries should remain alert. DLCO-EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, national DPVs and PPDs, ELOs are encouraged to continue sharing ETOP information with stakeholders as often and timely as possible. Lead farmers and community forecasters must remain vigilant and report ETOP detections to the relevant authorities immediately.

Inventories of Pesticide Stocks for ETOP Prevention and Control

Control operations treated 430 ha in **Mauritania** and **Morocco** in January and reduced ETOP pesticide inventory by that much during this month.

Note: Countries with SGR invasions, particularly in West and North West Africa reported large quantities of obsolete pesticide stocks, some of which are leftovers from the 2003-05 and earlier locust campaigns. Safe disposal of these

stocks will require considerable resources. **End note.**

Note: A Sustainable Pesticide Stewardship (SPS) can strengthen the pesticide delivery system (PDS) at the national and regional levels. A strong PDS can effectively reduce pesticide related human health risks, minimize environmental pollution, increase food security and contribute to the national economy. An SPS can be effectively established by linking key stakeholders across political borders. **End Note.**

OFDA/PSPM/AELGA encourages exploring alternatives such as IPM to reduce risks associated with pesticide stockpiling. A judiciously executed triangulation of surplus stocks from countries with large inventories to countries in need is a win-win situation worth considering.

Table 1. ETOP Pesticide Inventory in Frontline Countries

Country	Quantity (l/kg)*
Algeria	1,190,000~
Chad	44,500
Egypt	68,070~
Eritrea	18,250~ + 20,000 ^D
Ethiopia	10,000~
Libya	25,000~
Madagascar	206,000~ + 100,000 ^D
Mali	27,000
Mauritania	9,000 + 10,000 ^D
Morocco	3,534,000 ^D
Niger	75,800~
Oman	10,000~
S. Arabia	100,000~
Senegal	156,000~
Sudan	171,780~
Tunisia	68,514 obsolete
Yemen	42,000 ^D + 300 kg GM~

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

~ data may not be current;

^D = Morocco donated 100,000 l of pesticides to Madagascar and 10,000 l to Mauritania in 2015

^D = In 2013 Morocco donated 200,000 l to Madagascar

^D = Saudi donated 10,000 to Yemen and pledged 20,000 l to Eritrea

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

LIST OF ACRONYMS

AAW *African armyworm (Spodoptera expempta)*

AELGA *Assistance for Emergency Locust Grasshopper Abatement*

AFCS *Armyworm Forecasting and Control Services, Tanzania*

AfDB *African Development Bank*

AME *Anacridium melanorhodon (Tree Locust)*

APLC *Australian Plague Locust Commission*

APLC *Australian Plague Locust Commission
Bands groups of hoppers marching pretty much in the same direction*

CAC *Central Asia and the Caucasus*

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 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 (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)*

DPPOS *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

NPS National Park Services

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

PBB Pine Bark Beetle

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
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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