

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Update for January with a
forecast through mid-March, 2018**
résumé en français est inclus

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹) situation remained calm in its Western Outbreak Region (**WOR**) and only some scattered adults were detected in a few places in **Mauritania** during January.

In the Central Outbreak Region (**COR**), a few solitary adults were observed in **Sudan, Ethiopia** and **Yemen** during January, but overall the region remained calm during this month.

In the Eastern Outbreak Region (**EOR**), SGR remained calm during January.

Forecast

The SGR situation will likely remain calm in the **WOR** during the forecast period and only a few adults may persist in a few places in Mauritania and perhaps northern Mali and Niger, but significant developments are not expected.

In **COR**, small-scale breeding is likely in areas of recent rainfall in winter breeding areas along the Red Sea

coasts in **Sudan, Yemen** and **Saudi Arabia**, but significant developments are not expected during the forecast period.

The SGR situation will remain calm in the **EOR** during the forecast period.

Red (Nomadic) Locust (*Nomadacris septemfasciata*) (**NSE**): NSE has not been reported in frontline counties at the time this bulletin was prepared. However, hopper band formations are expected to have commenced in the primary outbreak areas where significant parental populations were present prior to the seasonal rains.

Fall armyworm (FAW) (*Spodoptera frugiperda*) (**SFR**): FAW continued appearing in rain-fed and irrigated crops in southern and eastern Africa during January (for more detail, please, see pages 6-9).

African Armyworm (AAW) (*Spodoptera exempta*): AAW outbreak was reported on pasture in **Tanzania** during January.

Italian (CIT), Moroccan (DMA), Asian Migratory (LMI) Locusts: The locust season has yet to start in spring in the CAC.

Quelea birds (QQU): QQU birds were observed threatening sorghum and rice in Shinyanga and Mbeya regions in **Tanzania** during January.

Active surveillance and monitoring as well as timely preventive interventions

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

remain critical to abate any threats ETOPs pose to crops and pasture.

USAID/OFDA/PSPM regularly monitors ETOPs in close collaboration with its network of national PPDs/DPVs, regional and international pest monitoring organizations, including FAO, CLCPRO, CRC, DLCO-EA, and IRLCO-CSA and provides timely analytical reports, updates to various stakeholders across the globe. **End summary**

RÉSUMÉ

La situation du Criquet pèlerin (Schistoseca gregaria - SGR) est restée calme dans la Région des épidémies occidentales (**WOR**) en janvier et seuls quelques ailés épars ont été détectés dans quelques endroits en Mauritanie en janvier.

Dans la région centrale de l'épidémie (**COR**), quelques ailés solitaires ont été observés au Soudan, en Éthiopie et au Yémen en janvier, mais dans l'ensemble, la région est restée calme au cours de ce mois.

Dans sa région de l'Est de l'Outbreak (**EOR**), la SGR est restée calme en janvier.

Prévoir

La situation du SGR restera probablement calme dans les WOR pendant la période de prévision et seuls quelques adultes peuvent persister dans quelques endroits en Mauritanie et peut-être dans le nord du Mali et au Niger, mais des développements significatifs ne sont pas attendus.

Dans le COR, une reproduction à petite échelle est probable dans les zones de reproduction hivernale le long des côtes de la mer Rouge au Soudan, au Yémen et en Arabie Saoudite, mais aucune évolution significative n'est attendue pendant la période de prévision.

En EOR, la situation SGR restera calme pendant la période de prévision.

Nomadacris septemfasciata

(*Nomadacris septemfasciata*): Aucun NSE n'a été signalé dans les comtés de première ligne au moment de la compilation de ce bulletin. Cependant, on s'attend à ce que les formations de bandes larvaires aient commencé dans les zones de foyers primaires où des populations parentales significatives étaient présentes avant les pluies saisonnières.

Chenille Légionnaire d'automne

(FAW) (*Spodoptera frugiperda*) (SFR): FAW a continué à apparaître dans les cultures pluviales et irriguées en Afrique australe et orientale en janvier (pour plus de détails, voir pages 7-9).

Chenille Légionnaire africaine (AAA)

(*Spodoptera exempta*): Des poussées limitées d'AAW ont été signalées sur des pâturages en Tanzanie en janvier.

Criquets italiens (CIT), marocains (DMA), asiatiques migratrices (LMI):

La saison acridienne n'a pas encore commencé au printemps dans le CAC.

Quelea birds (QQU): Des oiseaux QQU ont été observés menaçant le sorgho et le riz dans les régions de Shinyanga et de Mbeya en Tanzanie en janvier.

La surveillance actives ainsi que les interventions préventives en temps voulu restent essentielles pour réduire les menaces que les ETOP posent aux cultures et aux pâturages.

L'USAID / OFDA / PSPM surveille régulièrement les ETOP en étroite collaboration avec son réseau de PPV / DPV nationaux, les organisations régionales et internationales de surveillance des ravageurs, notamment la FAO, CLCPRO, CRC, DLCO-EA et IRLCO-CSA et fournit des rapports analytiques opportuns, des mises à jour. diverses parties prenantes à travers le monde.

Résumé de fin

OFDA's Contributions to ETOP Activities

The online Pesticide Stock Management System (PSMS) that was developed by the UN/FAO with financial assistance from USAID/OFDA and other partners has been installed in several dozen countries in Africa, South America, the Caribbean, Middle East, Asia and Pacific and helping participating countries maintain inventories. Thanks to this tool many counties have been able to avoid unnecessary procurements and stockpiling of pesticides and avoid costly disposal operations and improve safety and well-being of their citizens and their shared environment.

The USAID/OFDA funded community-based armyworm monitoring, forecasting and early warning (CBAMFEW) project had been incorporated into the national crop protection departments in all participating countries <http://bit.ly/1C782Mk>. The project enabled farmers to detect and report AAW and prevent major crop/pasture damage. Participating

countries continue expressing their appreciation for having the benefits the project brought to farmers and local communities in areas where it was implemented and to some extent to adjacent villages and districts.

USAID/OFDA/PSPM maintains a line of communications with participating countries and monitor progresses.

OFDA/PSPM is working with interested parties to explore means and ways to expand this innovative technology to other AAW affected countries for greater benefit to vulnerable farmers and rural communities.

OFDA/PSPM's interests in sustainable pesticide risk reduction in low income countries to strengthen their capacities and help avoid potentially threatening pesticide related contaminations and improve safety of vulnerable populations and their shared environment remain on the agenda.

USAID/OFDA-sponsored DRR projects and implemented by FAO to continue strengthening national and regional capacity for emergency locust control and prevention. These project have helped tens of millions of farmers, pastoralists across Sahel West Africa, Northwest Africa, Eastern and Northeastern Africa, Caucasus and Central Asia (CAC), and the Middle East.

The projects have not only enhanced national and regional capacity, but also helped create/facilitate collaborations among neighboring countries for joint monitoring, surveillance, information/technical sharing, reporting and launching preventive interventions against locusts. Through these projects, several dozens of technical staff and farmers received

training in safer and effective ETOP monitoring and preventive/curative operations. The projects also promoted, encouraged and helped realize south-south collaborations among frontline countries. Thanks to these and other similar efforts, potentially serious locust outbreaks and invasions had been abated several times in many countries across the primary outbreak regions.

Note: ETOP SITREPs can be accessed on USAID Pest and Pesticide Management website: <https://www.usaid.gov/what-we-do/working-crises-and-conflict/responding-times-crisis/how-we-do-it/humanitarian-sectors/agriculture-and-food-security/pest-and-pesticide-monitoring>

Weather and Ecological Conditions

WOR region largely remained dry and ecological conditions were generally unfavorable to sustain breeding or survival of SGR during January (**CNLA/Chad, CNLA/Mali, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, FAO-DLIS, NLCC/Libya**).

COR: In COR, ecological conditions remained generally dry. Vegetation was green only in a few areas between Port **Sudan** and south Swakin, eastern part of Tokar Delta and south and north Tehama on the coastal areas in **Yemen** that received light rain on 18th January. SGR spring breeding areas in eastern **Ethiopia** and **Somalia** and **Oman** remained fairly dry during this month (DAF/Djibouti, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Ethiopia, PPD/Sudan).

During most of January, southern Brazzaville, parts of DRC and Angola

received above-average rainfall. In contrast, much of Gabon, northern Congo-Brazzaville, parts of Angola and DRC (NOAA, 1/29).

EOR: Dry and hot conditions persisted in the EOR during December.

NSE Outbreak Regions: During January, *much of Tanzania, portions of northern Zambia, northern Malawi, local areas in South Africa and eastern and northern Madagascar received above-average rainfall received above average rainfall. In contrast, Uganda, Kenya, Namibia, Botswana, Zimbabwe, much of Zambia, southern Malawi, central and southern Mozambique, many parts of South Africa, and southwestern Madagascar received below-average rainfall (NOAA – 1/29).*

Note: *Combinations of precipitation, warm weather and green vegetation MUST be closely watched as this mix coupled with the seasonal wind trajectory can favor, breeding and facilitate migration and further spread of migratory pests. **End note.***

Note: *Changes in the weather pattern and increased 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 ambient altitude due to warmer higher elevations. The **Asian migratory locust**, an insect that normally breeds once a year, has begun exhibiting two generations per year. These anomalies which are largely attributed to the change in the weather patterns and associated ecological shift*

are serious concerns to farmers, rangeland managers, crop protection experts, development and humanitarian partners, etc. Regular monitoring, documenting and reporting anomalous manifestations in pest behavior and on habitat shifts remain critical to help avoid/minimize potential damage to crops, pasture and livestock and reduce subsequent negative impacts on food security and livelihoods of vulnerable populations and communities.

http://www.cpc.ncep.noaa.gov/products/international/casia/casia_hazard.pdf

End note.

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

SGR – WOR: The **SGR** situation remained calm in **WOR** during January and only a few low density scattered mature and immature adults and 2nd to 5th instar larvae were detected in a few places in Adrar and Tiris in northwest and northern **Mauritania** where small-scale breeding occurred. Unconfirmed reports from the nomads indicates the presence of scattered mature and immature adult locusts in Tin-Elarian 19° 14' 26" N / 0° 08' 52" W; Iblouladj 19° 4' 25" N / 0° 22' 46" W; Tifassassen 19° 22' 03" N / 0° 02' 05" W in **Mali** during January. No locusts were reported in Morocco, Tunisia, Libya, Niger or Chad and no update was received from **Algeria** during this month (CNLA/Chad, CNLA/Mali, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, CNLA/Libya).

Forecast: Due to ongoing lull and the deteriorating ecological conditions in most of the WOR, the SGR situation will remain calm and only solitary adults may persist in a few places during the forecast period (CNLA/Chad, CNLA/Mali, NLCC/Libya,

CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia).

*In the spirit of South-South cooperation, **Mali** National Locust Control Center hosted a team of locust staff from **Madagascar**. The Malagasy team received training on locust operations from 26-30 November, 2017.*

SGR (Desert Locust) - COR: The SGR situation remained calm and only a few immature and mature solitary adults were detected in southern Tokar Delta present in winter breeding areas along the Res Sea coasts in **Sudan** where small scale breeding occurred in one place during previous month. In **Ethiopia**, the SGR scouts conducted surveys in spring breeding areas in 8 districts in the eastern part of the country during January and detected a few isolated adults in Biyo Kobobe in Aysha district (PPD/Ethiopia).

In **Yemen**, the FAO-funded survey operations detected low numbers of solitary adults in several places in coastal areas in Tehama during January. No locusts were reported in **Djibouti**, **Oman**, or **Somalia** and no reports were received from other countries in the region during January (DAF/Djibouti, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Ethiopia, PPD/Sudan).

Forecast: In **COR**, small-scale breeding may occur in a few places along the Red Sea coasts in **Sudan** and in areas where rainfall was recorded in Tehama in **Yemen** and a similar situation is likely in coastal areas in **Saudi Arabia**. A few adults may persist in eastern **Ethiopia**, but significant developments are not likely in the region during the forecast period.

SGR - EOR: The SGR situation remained calm in EOR and no locusts were reported during January and the region will likely remain calm during the forecast period.

Active monitoring, timely reporting and preventive interventions remain critical to abate any major developments that could pose serious threats to crops and pasture in areas where locust activities are present.

The **USAID/OFDA-FAO-DLCO-EA** sponsored Horn of Africa emergency desert locust management project is progressing. Technical and material supports that have been provided to participating frontline countries and/or DLCO-EA are strengthening the capacity to better monitor, report, prevent, and abate locusts in the sub-region.

Red (Nomadic) Locust (NSE): NSE reports were not received from IRLCO-CSA member states at the time this bulleting was prepared. However, hatching and hopper group and band formations are expected to have progressed in the primary outbreak areas where significant parental populations persisted prior to the seasonal rains in November/December 2017. Intensive ground and aerial surveys to determine the NSE status are to be undertaken by IRLCO-CSA and MinAgris in the affected countries in the coming months.

Forecast: Large numbers of NSE hopper bands and groups will likely continue appearing in the primary outbreak areas in **Tanzania, Malawi, Mozambique** and **Zambia** and fledging may occur during the forecast period.

Outbreak of *Cataloipus* grasshopper species, at times forming low density

swarms, was reported during January in the Kafue Flats. IRLCO-CSA and Zambia MinAgri launched ground survey in the infested areas. The grasshopper was primarily detected in pasture. However, a few infestations were also detected on maize fields neighboring the pasture where minor damage was observed. Affected farmers with the help of MinAgri launched control operations (IRLCO-CSA).

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): The locust season will remain calm in the CAC region until spring (OFDA/PSPM).

Fall armyworm (FAW) (*S. frugiperda*)

During January, FAW infestations were reported in rain-fed and/or irrigated crops in **Zambia, Zimbabwe, Malawi, Mozambique**, and **Tanzania**. It was also reported in Ethiopia, but this needs to be verified.



File photo of a typical FAW damage on maize plants.

In **Zambia**, outbreaks were reported in short rain maize growing areas and on irrigated wheat and soybean.

In **Malawi**, FAW was first detected in the southern part of the country in December and later spread further expected to reach the northern growing region following cropping patterns which is influenced by the

rainfall pattern which trails behind the ITZ-based seasonal rains.

Training and awareness raising through media messaging, distributions of printed info materials, establishing call centers, providing pheromone traps for monitoring FAW movement and presence to alert the need for scouting, etc., were intensified through assistance from USAID and other partners as well as country's own programs.

In **Mozambique**, FAW was reported affected close to 8,300 ha of which 7,914 ha were controlled and 313 ha were severely damaged (overall, the pest affected 2,739 families) during January (IRLCO-CSA)

In **Tanzania**, FAW was reported in several districts across 9 regions including Coastal areas, Geita, Songwe, Mbeya, Shinyanga, Kilimanjaro, Njombe, Ruvuma and Mtwara.

PHS staff trained thru USAID and FAO ToT provided training for 30 District PPOs and several PHS staff in Rukwa region and Arusha areas in monitoring, scouting and using IPM interventions to manage the pest as well as in awareness raising to the policy and (MinAgri, the Cabinet) and farmers level. This was done via TV, newspaper and other means. PHS strongly believes that this fast spreading pest warrants intensive awareness creation, training of Agricultural Extension Officers and farmers on IPM, setting up and servicing pheromone traps, dissemination of technologies and tools for management, including safer and appropriate recommended pesticides, etc. (PHS/Tanzania).

In **Mozambique**, FAW was reported in January in maize crops in Sofala province where control operations were launched by the affected farmers with material and technical assistance from the MinAgri.

In **Uganda** FAW infestations were not reported during January as the rain-fed maize crops were in the harvest stage. (Note: In December, 2018, what appears to have been a combination of heavy rain and, according to a Kampala-based DFLCO-EA base manager who referred his information source to the NPPO/Uganda, timely control interventions effectively minimized FAW impacts on maize crops, predicting a bumper harvest (DLCO-EA, and personal communication with CABI)

In **Ethiopia**, FAW infestations were reported in irrigated crops in several districts where control operations were launched by the affected farmers (DLCO-EA; further clarifications are forthcoming on this).

FAW was reported by PPD/Somalia in January in irrigated sorghum in **Somalia**, but further detail was not available at the time this bulletin was prepared.

In **Zambia**, FAW was first reported in seasonal maize crops in the southern part of the country in Chilanga, Choma, Pemba, Monze, Mazabuka and Chibombo and irrigated wheat and soybean and control interventions were launched by the affected farmers with assistance by MinAgri (personal communication).

Forecast: FAW will remain a threat to irrigated and rain-fed maize and other crops across several regions in Africa during the forecast period. Active

surveillance and timely reporting and interventions remain critical.

FAW humanitarian, economic and food security risk measure and analysis should focus on impacts at the national, sub-regional and regional level.

According to a UN/FAO's latest January, 2018 report, FAW has been detected in nearly all of sub-Saharan African countries except Djibouti, Eritrea, Lesotho and Seychelles (see map below, FAO, 1/18).



Map showing countries where FAW has been reported as of January 2018 (FAO)

<https://reliefweb.int/report/uganda/uganda-food-security-outlook-update-october-2017-january-2018>

The need for developing ecologically sustainable, economically profitable and socially acceptable IPM programs to mitigate the impact of the FAW in Africa where hundreds of millions of resource strained farmers eke their living from small-scale farming remains critical to avert food crisis and economic stagnation.

Potential migration of FAW in the coming months

As of January 2018, UN/FAO reported the presence of FAW in almost all of sub-Saharan African countries, but Djibouti, Eritrea, Lesotho, Mauritius and Seychelles. The pest is yet to be confirmed in Gabon Guinea, Republic of Congo and Sudan. In Southern Africa and Central Africa where the seasonal cropping season is tapering off and/or in progress, the pest will continue spreading across districts and regions threatening/ attacking maize and other crops. In Eastern Africa the pest will threaten irrigated crops and other off season vegetation. In Sahel West Africa, the pest may survive on plants along river banks and before it starts moving to maize and other cereal crops during the rainy season. In northern African FAO presence has not been yet reported, the situation will likely remain calm until perhaps it employs its hop-spread phenomenon with the help of favorable air current.

OFDA co-sponsored disaster risk reduction project is being implemented by a consortium led by FAO and composed of the Center for Agriculture and Biosciences International (CABI), the Desert Locust Control Organization for Eastern Africa (DLCO-EA), International Center for Insect Physiology and Ecology (ICIPE) and National MinAgri and other partners. The project is progressing well; LoA has been signed by all implementing partners and practical field manual for extension agents and farmers is being developed (the USAID-CIMMYT fields guide which has been recently released will be of great value to this and other activities): click her to download the PDF version of the field guide

https://feedthefuture.gov/sites/default/files/resource/files/FallArmyworm_IPM_Guide_forAfrica.pdf Tools and equipment for the proposed activities are being distributed to participating countries; ToT for Agricultural Extension Officers and farmers and awareness to be implemented in time for farmers to be able to defend their crops.

Additional information sources

Armyworm Network: A web resource for armyworm in Africa and their biological control:

<http://www.lancaster.ac.uk/armyworm/>

Latest African and Fall Armyworm Forecast from IRLCO-CSA - 5th Jul 2017:
http://www.lancaster.ac.uk/armyworm/forecasts/?article_id=002971

Invasive Species Compendium Datasheets, maps, images, abstracts and full text on invasive species of the world:
<http://www.cabi.org/isc/datasheet/29810>

Drought and armyworm threaten Africa's food security:
<http://www.theeastafrican.co.ke/news/Drought-and-armyworm-threaten-Africa-food-security/2558-3996692-ggws8q/index.html>
<http://www.fao.org/food-chain-crisis/how-we-work/plant-protection/fallarmyworm/en/>

http://www.fao.org/fileadmin/templates/fcc/map/map_of_affected_areas/Fall_Arm_yworm_brief_-_15Dec2017_.pdf
FAO Food Chain Crisis Early Warning Bulletin for January, 2018:
<http://www.fao.org/3/I8520EN/i8520en.PDF>

Information on USAID Call to Action to combat FAW:

<https://feedthefuture.gov/lp/partnering-combat-fall-armyworm-africa>

<https://feedthefuture.gov/resource/combating-fall-armyworm>

African Armyworm (AAW): AAW outbreak was reported in Morogoro region of **Tanzania**, but no outbreaks were reported elsewhere during this time (IRLCO-CSA).

Forecast: AAW outbreak is expected to appear in the central outbreak regions where seasonal rains have been reported.

Trap operators are advised to actively monitor their traps. Trap monitoring must be accompanied by routine crop scouting to detect egg and larval presence and damages. Egg and larval detections and moth catches must be reported to the national forecasting officers and concerned staff and *authorities immediately to help facilitate rapid interventions. Vigilance and timely preventive interventions remain critical to avoid crop damage (IRLCO-CSA, OFDA/AELGA, DLCO-EA).*

Active monitoring, surveillance, routine pheromone trap inspection and crop scouting as well as information sharing and reporting remain critical to help implement preventive interventions to abate any major damage the pest could cause to crops.

Note: PSPM continuous collecting, analyzing and reporting on A/FAW information. So far, printable and web-based maps have been developed for AAW outbreak and invasion countries in the central and southern regions (click on the below link for the maps:

<http://usaid.maps.arcgis.com/apps/View/index.html?appid=9d2ab2f918284595819836d1f16a526f> (OFDA/PSPM in collaboration with the GIU will develop a similar map for SFR as needed)

Quelea (QQU): QQU bird outbreaks were reported in Shinyanga region in **Tanzania** during January. Preparations to carry out aerial control were in progress at the time this bulletin was prepared (IRLCO-CSA).

Forecast: QQU birds will likely go into breeding season in several countries in southern and eastern Africa **Tanzania** during the forecast period.

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 rodents during January, but the pest is a constant threat to field and storage crops.

Note: On average an adult rat can consume 3-5 gm of food (grains etc.)/day and a population of 200 rats/ha (a very low density) could consume what a sheep can eat in one day (not to mention the amount they can damage, destroy or pollute making it unfit for human consumption) and the zoonotic diseases they carry and can transmit.

All ETOP front-line countries must maintain regular monitoring. Invasion countries should remain on alert. DLCO-

EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, national DPVs and PPDs, ELOs are encouraged to continue sharing ETOP information with stakeholders as often as possible and on a timely basis. Lead farmers and community forecasters must remain vigilant and report ETOP detections to relevant authorities immediately.

Inventories of Pesticide Stocks for SGR Prevention and Control

The SGR pesticide inventory remained unchanged during January.

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

OFDA/PSPM encourages the use of alternatives to hard core pesticides and promotes IPM to minimize risks associated with pesticide stockpiling. A judiciously executed triangulation of surplus stocks from countries with large inventories to countries in need and where they can be effectively utilized is a win-win situation worth considering.

Table 1. ETOP Pesticide Inventory in Frontline Countries

Country	Quantity (l/kg)*
Algeria	1,188,708~
Chad	38,300

Egypt	68,070~ (18,300 ULV, 49,770 I)
Eritrea	17,122~ + 20,000 ^D
Ethiopia	9,681~
Libya	25,000~
Madagascar	206,000~ + 100,000 ^D
Mali	7,000
Mauritania	14,998 ^{DM}
Morocco	3,490,732 ^D
Niger	75,750~
Oman	10,000~
S. Arabia	89,357~
Senegal	156,000~
Sudan	169,710~
Tunisia	68,514 obsolete
Yemen	40,090 ^D + 180 kg GM~
<p>* Includes different kinds of pesticide and formulations - ULV, EC and dust;</p> <p>~ data may not be current;</p> <p>^D = Morocco donated 100,000 I of pesticides to Madagascar and 10,000 I to Mauritania in 2015</p> <p>^D = In 2013 Morocco donated 200,000 I to Madagascar</p> <p>^D = Saudi donated 10,000 to Yemen and pledged 20,000 I to Eritrea</p> <p>^{DM} = Morocco donated 30,000 I of pesticides to Mauritania</p> <p>GM = <i>GreenMuscle</i>TM (fungal-based biological pesticide)</p>	

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*

AGRA *Agricultural Green Revolution in Africa*

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

ASARECA *Association for Strengthening Agricultural Research in Eastern and Central Africa*

CABI *Center for Agriculture and Biosciences International*

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)*

COR *Central SGR Outbreak Region*

CPD *Crop Protection Division*

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

PBB Pine Bark Beetle

PSPM Preparedness, Strategic Planning and Mitigation (formerly known as Technical Assistance Group - TAG)

Triangulation The process whereby pesticides are donated by a country, with large inventories, but often no immediate need, to a country with immediate need with the help of a third party in the negotiation and shipments, etc. Usually FAO plays the third party role in the case of locust and other emergency pests.

USAID the United States Agency for International Development

UN the United Nations

WOR Western SGR Outbreak Region

ZEL Zonocerus elegans, the elegant grasshopper

ZVA Zonocerus variegatus, the variegated grasshopper, is emerging as a fairly new dry season pest, largely due to the destruction of its natural habitat through deforestation, land clearing, etc. for agricultural and other development efforts and due to climate anomalies

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

Who to contact for more information:

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

Yeneneh Belayneh, PhD.
ybelayneh@usaid.gov

Tel.: + 1-202-712-1859

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