

**Emergency Transboundary Outbreak Pests (ETOPs) Situation for
January with a forecast through mid-March 2020**
résumé en français est inclus

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹): During January, SGR situation remained extremely serious in the central outbreak region (COR) where massive swarms formed and continued spreading throughout the Horn of Africa. Aerial and ground control operations are in progress in **Ethiopia** and **Kenya** and ground control were launched in northern **Somalia**. Swarms were reported in a few places in **Djibouti**. Survey and control operations were maintained in **Eritrea, Sudan, Saudi Arabia, Oman** and **Yemen**. In the eastern outbreak region (EOR), control operations were conducted in **India** and **Pakistan** and southern coast of **Iran** where breeding has commenced during January. The western outbreak region (WOR) remained relatively calm during this month.

<http://www.fao.org/ag/locusts/en/info/info/index.html>

Forecast: Breeding will continue increasing locust numbers in the Horn; swarms could reach Uganda and South Sudan. Breeding will also continue along both sides of the Red Sea coasts in Sudan, Eritrea, Oman, Saudi Arabia and Yemen and increase locust numbers. Locust activities will increase with hatching occurring in southeastern Iran and breeding commencing in southwestern Pakistan and small-scale breeding is likely in the western outbreak region during the forecast period. Active surveillance, monitoring and rapid and massive interventions remain critical to reduce the burden of the locust invasions on food security and livelihoods of rural communities.

Red (Nomadic) Locust (*Nomadacris septemfasciata*) (**NSE**): NSE continued breeding in the primary outbreak areas during January. Favorable conditions are likely to increase locust populations in Tanzania, Malawi, Mozambique and Zambia during the forecast period.

Tree Locusts, *Anacridium spp.* (**ASP**): *ASP likely persisted in Turkana and Marsabit countries in Kenya* affecting acacia trees.

Central American Locust, *Schistocerca piceiferons* (**CAL**): No update was received at the time this bulletin was compiled.

South American Locust, *Schistocerca cancellata* (**SCA**): No update was received during this month.

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

Italian (CIT), Moroccan (DMA), and Asian Migratory Locusts (LMI): Locust activities will remain calm until spring.

Fall Armyworm (*Spodoptera frugiperda*) (FAW): FAW was reported affecting maize crop in Malawi, Mozambique, Tanzania, Zambia and Zimbabwe. It is likely that the pest is affecting crops elsewhere.

African Armyworm (AAW) (*Spodoptera exempta*): AAW outbreaks were reported in Malawi, Zimbabwe and Zambia attacking maize crop during January.

Quelea spp. (QSP): No QSP bird outbreaks were reported during this month.

Active surveillance, monitoring and timely preventive and curative interventions as well as sharing ETOP information remain critical to abate the threats ETOPs pose to food security and livelihoods of vulnerable communities.

USAID/OFDA/PSPM regularly monitors ETOPs in close collaboration with its network of national PPDs/DPVs, regional and international pest monitoring and/or control entities, including FAO, CLCPRO, CRC, DLCO-EA, and IRLCO-CSA, and research centers, academia, private sector, NGOs and others and issues concise, analytical bulletins to stakeholders. **End summary**

RÉSUMÉ

La situation du Criquet pèlerin (*Schistoseca gregaria* - SGR): Le Criquet pèlerin (*Schistoseca gregaria* - SGR): En janvier, la situation des SGR a continué d'être extrêmement grave dans la région centrale de l'épidémie (COR) où des essaims massifs ont été détectés à plusieurs endroits dans la Corne de l'Afrique où des opérations de lutte aérienne et terrestre se sont poursuivies en Éthiopie et Le Kenya et un contrôle au sol limité ont été lancés dans le nord de la Somalie. Des essaims ont également été signalés à quelques endroits de Djibouti. Les opérations de prospection et de contrôle se sont poursuivies en Érythrée, au Soudan, en Arabie saoudite, à Oman et au Yémen dans une certaine mesure au cours de ce mois. Dans la région de l'épidémie orientale (EOR), des opérations de lutte ont été menées en Inde, au Pakistan et sur la côte sud de l'Iran, où la reproduction a commencé en janvier. La région ouest de l'épidémie (WOR) est restée relativement calme pendant ce mois.

Prévisions: La reproduction continuera d'augmenter les effectifs acridiens dans la Corne; des essaims pourraient atteindre l'Ouganda et le Soudan du Sud. La reproduction se poursuivra également le long des deux côtés des côtes de la mer Rouge au Soudan, en Érythrée, à Oman, en Arabie saoudite et au Yémen et augmentera les effectifs acridiens. Le sud-est de l'Iran et le sud-ouest du Pakistan

connaîtront une augmentation des activités acridiennes, des éclosions se produisant dans le sud-est de l'Iran et une reproduction commençant dans le sud-ouest du Pakistan au cours de la période de prévision. Une reproduction à petite échelle est probable dans la région ouest de l'épidémie au cours de la période de prévision. Une surveillance active, un suivi et des interventions rapides et massives restent essentiels pour réduire la charge des invasions acridiennes sur la sécurité alimentaire et les moyens de subsistance des communautés rurales et au-delà.

Criquet nomade (*Nomadacris septemfasciata*) (NSE): NSE a poursuivi sa reproduction dans les principales zones du foyer en janvier. Des conditions favorables devraient augmenter les populations acridiennes en Tanzanie, au Malawi, au Mozambique et en Zambie au cours de la période de prévision.

Le criquet arborial, *Anacridium spp*: ASP a probablement persisté dans les comtés de Turkana et Marsabit au Kenya, affectant les acacias.

Criquet Amérique centrale, *Schistocerca piceifrons piceiferons* (CAL): Aucune mise à jour n'a été reçue à la date de rédaction du présent bulletin.

Criquet d'Amérique du Sud, *Schistocerca cancellata* (SCA): Aucune mise à jour n'a été reçue au cours de ce mois.

Criquets italiens (CIT), marocains (DMA), Asian Migratory Locust (LMI): les activités acridiennes étaient terminées à CAC et la région restera calme jusqu'au printemps prochain.

Chenille Légionnaire d'automne (*Spodoptera frugiperda*) (FAW): La FAW a été signalée affectant la récolte de maïs au Malawi, au Mozambique, en Tanzanie, en Zambie et au Zimbabwe. Il est probable que le ravageur affecte les cultures ailleurs.

Chenille Légionnaire africaine (AAW), *Spodoptera exempta*: Des flambées de AAW ont été signalées au Malawi, au Zimbabwe et en Zambie, attaquant la récolte de maïs en Janvier.

***Quelea spp. oiseaux* (QSP):** Aucune éclosion d'oiseaux QSP n'a été signalée au cours de ce mois.

La surveillance active, le suivi et les interventions préventives et curatives opportunes ainsi que le partage des informations ETOP restent essentiels pour réduire les menaces que les ETOP font peser sur la sécurité alimentaire et les moyens de subsistance des communautés vulnérables.

USAID / OFDA / PSPM surveille régulièrement les ETOP en étroite collaboration avec son réseau de PPD / DPV nationaux, d'entités régionales et internationales de surveillance

et / ou de lutte antiparasitaire, y compris la FAO, la CLCPRO, le CRC, le DLCO-EA et l'IRLCO-CSA, et des centres de recherche, universités, secteur privé, ONG et autres et publie des bulletins analytiques concis à l'intention des parties prenantes. Fin de résumé

Note: All ETOP Bulletins and SITREPs, including previous ones can be accessed and downloaded on USAID Pest and Pesticide Monitoring website: [USAID Pest and Pesticide Monitoring](#)

Weather and Ecological Conditions

In **COR**, ecological conditions remained favorable in northeastern Somalia, eastern and southwestern Ethiopia as well as northern and central Kenya where locust swarms were reported. During the past 30 days, rainfall was above-average in local areas in southwestern Ethiopia, Uganda, Kenya, and Tanzania. Favorable conditions persisted along the Red Sea coasts and on the coastal areas in Yemen and Oman during this month (FAO-DLIS, NOAA 2/2020).

In **EOR**, unusually heavy rains were reported on the southern coast of Iran very in the season and will create favorable conditions for more than one generation during spring and could cause considerable increase in locust numbers. Ecological conditions are also becoming favorable in Baluchistan southwest Pakistan where light rain fell during this month.

In **WOR** significant precipitation was not reported and dry conditions persisted with favorable ecological conditions limited to wadis and a few places where patches of vegetation persisted during this month.

In the **NSE** outbreak regions, moderate to heavy rains were recorded with rainfall totals in January exceeding 300 mm over local areas in central and southern Tanzania, central and northern

Mozambique causing ecological conditions favorable for successful breeding (IRLCO-CSA, NOAA).

CAC Region: Cold and dry weather is expected to have prevailed in CAC during this month.

Note: Changes in the weather pattern such as increased or decreased temperature and precipitation can contribute to ecological shift in ETOP habitats and could increase or decrease the risk of pest outbreaks, resurgence and emergence of new pests. For example, 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 regular ambient altitude due to warmer higher elevations.

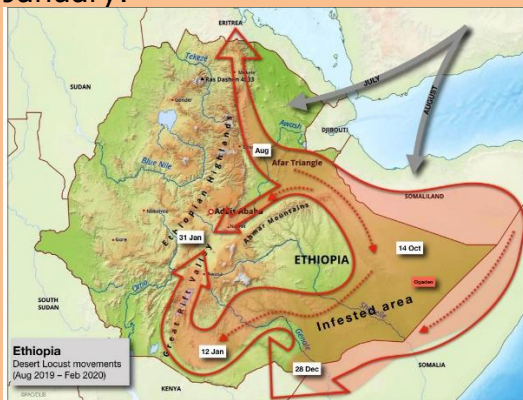
The **Asian migratory locust**, an insect that normally has one generation per year, has begun breeding twice per year. This phenomenon is largely attributed to change in weather pattern resulting in ecological shift can become serious concerns to farmers, rangeland managers, crop protection experts, development and humanitarian partners, etc. Regular monitoring, documenting and reporting anomalies in pest behavior and on habitat shifts are crucial to help avoid/minimize potential damage to crops, pasture and reduce 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 a Forecast for the Next Six Weeks are provided below

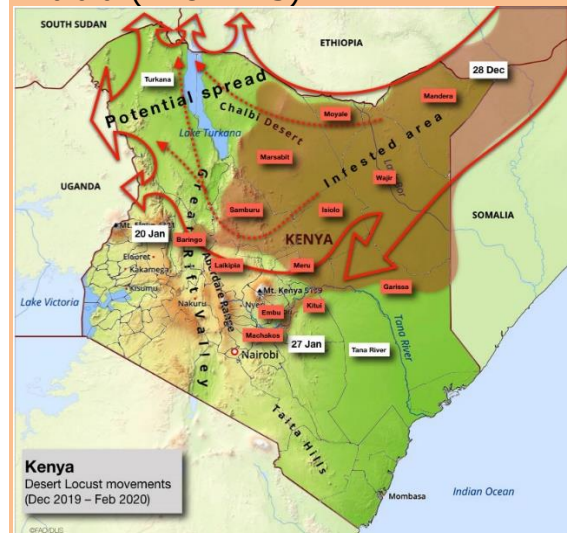
SGR – COR: The SGR situation remained extremely worrisome in the Horn of Africa in **Ethiopia, Somalia** and **Kenya** as the pest continued further developing and spreading and threatening crops and pasture. Swarms have been reported in southeastern and southern **Ethiopia** and southwestern **Somalia** and northern and central **Kenya**. Immature swarms continue to arrive in the northeast **Kenya**, and move throughout northern and central areas, having invaded 14 counties. Immature swarms were reported in **Djibouti** near Ali Sabieh, Doudou Balaleh, Sagallou, Dikhil and the **Ethiopian** border between 18-20 January.



FAO-DLIS, 1/2020

Ground and aerial control operations are in progress in **Ethiopia** and **Kenya**. In **Somalia**, limited ground control operations were carried out in the northern part of the country using biopesticides. Locust infestations continue to grow along both sides of the Red Sea where numerous hopper groups, bands and adult groups are forming. A swarm formed on the coast near the **Sudan/Egypt** border, swarms have laid near the **Sudan/Eritrea** border, and on the coast of **Yemen**, some of which have moved into the central highlands and to adjacent areas in southwest **Saudi**

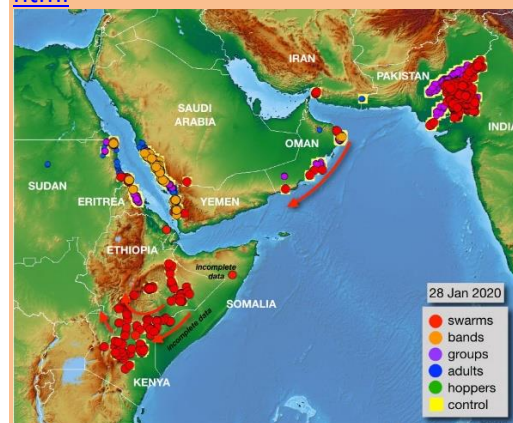
Arabia (FAO-DLIS).



FAO-DLIS 1, 2020

Survey and control operations continued along the Red Sea coasts in **Eritrea** (a small swarm was detected near Assab on January 20), **Sudan, Saudi Arabia, Oman** and **Yemen**. Several swarms, presumably from the **Indo-Pakistan** border area, recently arrived on the eastern coast of **Oman** and moved south to **Yemen**. (DLCMM/Yemen, FAO-DLIS, LCC/Oman, PPD/Djibouti, PPD/Ethiopia, PPD/Sudan).

<http://www.fao.org/ag/locusts/en/info/info/index.html>



FAO-DLIS, 1/2020

Forecast: In the coming months, egg laying, hatching and hopper formations will continue in eastern Ethiopia, northern Somalia, and northern and central Kenya.

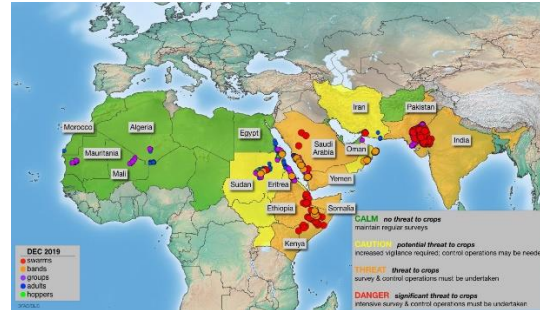
In Kenya, in northern and central counties, some swarms have started to lay eggs that will hatch in early February and give rise to new swarms by early April. Although a few swarms have reached the Rift Valley, they are likely to remain in northern areas. Swarms will likely move northwest towards Turkana and central counties. Eritrea, Sudan, Saudi Arabia and Yemen and to some extent Oman will also experience increased locust presence during the forecast period (DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Somalia, PPD/Sudan,).

SGR - EOR: Residual adult groups and swarms were detected and controlled along both sides of the **Indo-Pakistan** borders while some swarms had moved to adjacent areas to the north. Some 2,040 ha were reported controlled in Iran and more than 125,000 ha were treated in EOR during this month (FAO-DLIS).

Forecast: With ecological conditions improving in spring breeding areas in Baluchistan western **Pakistan** and southeast **Iran**, locusts will continue breeding and increase during the forecast period (FAO-DLIS).

SGR – WOR: SGR situation remained calm in the western outbreak region with very limited control operations carried out in Mauritania during January (ANLA/Chad, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, CNLAP/Mali, FAO-DLIS).

Forecast: Small-scale breeding is likely in northwest Mauritania and perhaps Mali, but the situation in WOR will remain generally calm during the forecast period (ANLA/Chad, CNLAP/Mali, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, FAO-DLIS, INPV/Algeria).



Active surveillance, monitoring, preparedness and timely preventive and curative interventions are critical to avert any significant locust developments and the potential threat they pose to food security and livelihoods of vulnerable communities (FAO-DLIS, OFDA/PSPM).

Red (Nomadic) Locust (NSE): NSE breeding continued in IRLCO-CSA outbreak areas where hatching is expected during January/February as ecological conditions continued improving from moderate rains that fell in primary outbreak areas in Mozambique, Malawi, and Zambia during December/January (IRLCO-CSA).

Forecast: NSE hopper bands are expected to form in the primary outbreak areas in Tanzania, Mozambique, Malawi and Zambia during February/March. Locust numbers will likely increase in all breeding areas. Timely surveys are necessary to facilitate control operations to prevent swarms to form and threaten crops (IRLCO-CSA).

Tree Locusts, *Anacridium spp. (ASP):* No update was received at the time this bulletin was compiled, however, ASP is expected to have persisted in Turkana and Marsabit countries in Kenya affecting acacia trees (IRLCO-CSA, PPD/Kenya).

Central American Locust - *Schistocerca piceifrons piceifrons*

(CAL): No update was received at the time this Bulletin was compiled.

South American Locust, *Schistocerca cancellata* (SAL): No update was received at the time this bulletin was compiled.

***Tropidacris collaris* (Tucura quebrachera - TCO - grasshopper-):** No update was received at the time this Bulletin was compiled.

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): No locusts were reported in CAC regions and activities are not expected until next spring (FAO-ECLO, OFDA/PSPM).

Fall armyworm (FAW) (*S. frugiperda*) FAW was reported affecting maize crop in Malawi, Mozambique, Tanzania, Zambia and Zimbabwe. MinAgries continued providing technical and material support to the affected farmers to control the pest. Though not reported, the pest is expected to have continued affecting maize and other crops elsewhere (IRLCO-CSA).

Forecast: FAW will likely continue affecting rain-fed and irrigated maize and other crops across sub-Saharan Africa, Asia, the Pacific Regions and elsewhere during the forecast period. Active monitoring, surveillance, reporting and preventive interventions remain critical to abate the damage.

Key Activity update: The USAID/OFDA sponsored Community-Based FAW Monitoring, Surveillance and Management project (CBFAMFEW) was implemented in six countries in eastern Africa from 2017 to August 2019. The project trained close

to 1,400 senior PPD staff, district agricultural experts, lead farmers, extension agents, lead farmers and village leaders. More than 10,000 farmers and villagers were sensitized on FAW-360 in participating countries. A network of forecasters and scouts were also established across 300 villages in project countries. Strong relationships were established among experts and implementing partners and commitments from participating countries were garnered to ensure sustainability of collective and individual gains of the initiative.

Note: Several species of natural enemies of FAW have been identified in Ethiopia, Kenya, Tanzania, Madagascar, India, etc. and are being further studied to determine their efficacy, environmental impacts and safety. Some are being tested along-side other agro-ecological tools, e.g., push-pull technology, to develop effective, affordable, accessible, adaptable and sustainable means of managing the pest. **End note.**

Information resources

NOTE: Highly hazardous pesticides cannot and must not be considered or used for FAW control. END NOT

USAID/BFS and OFDA co-funded IPM based FAW management guidance, available in English and French and will be available soon in Portuguese:

https://www.usaid.gov/sites/default/files/documents/1867/Fall-Armyworm-IPM-Guide-for-Africa-Jan_30-2018.pdf

CBAMFEW project sites:

<http://usaid.maps.arcgis.com/apps/Viewer/index.html?appid=8ff7a2eefbee4783bfb36c3e784e29cb>

BFS and SAWBO (Scientific Animation Without Borders) developed a video clip on FAW:

<https://sawbo-animations.org/video.php?video=//www.youtube.com/embed/5rxlpXEK5q8>

USAID Pesticide Evaluation Report and Safer Use Action Plan (PERSUAP) contains a list of pesticides assessed as relatively safer for use against FAW:

<https://ecd.usaid.gov/repository/pdf/50065.pdf>

CABI FAW Portal: identification

guides: <https://www.cabi.org/ISC/fallarmyworm>

Bt maize and the fall armyworm in Africa

(Africa Center for Biodiversity, June 2018):

<https://acbio.org.za/sites/default/files/documents/BT%20Maize%20Fall%20Army%20Worm%20report.pdf>

Invasive Species Compendium Datasheets, maps, images, abstracts and full text on invasive species of the world:

<http://www.cabi.org/isc/datasheet/29810>

FAO interactive FAW Risk-Index heat map to help monitor potential risk of FAW infestation in countries where the pest has been reported

<http://www.fao.org/emergencies/resources/maps/detail/en/c/1110178/>

NURU, a mobile phone application detects FAW eggs, larvae, pupae and damage on maize crops is developed by Penn State University in collaboration with UNFAO:

<http://www.fao.org/news/story/en/item/1141889/icode/>

Safer, affordable, and adaptable IPM-based pest management and assessment tools remains critical in abating FAW infestations and minimize crop damage.

African Armyworm (AAW): AAW outbreaks were reported in Chikwawa district in Shire valley and Lilongwe Agricultural Development Division in Malawi and in Chivhu district (Mashonaland east province), Chiredzi district (Masvingo province), Chegutu district (Mashonaland west province and Gweru district (Midlands province) in Zimbabwe. Control operations were launched by affected farmers with material and technical support from the Ministries of Agriculture (IRLCO-CSA).

Forecast: AAW activities will likely continue in Malawi, Mozambique, Tanzania, Zambia and Zimbabwe. Frontline countries are advised to

maintain vigilance and intensify monitoring as crops are still vulnerable to damage (IRLCO-CSA, OFDA/PSPM).

Note: OFDA developed printable and web-based interactive maps for AAW:

<http://usaid.maps.arcgis.com/apps/Viewer/index.html?appid=9d2ab2f918284595819836d1f16a526f>

<http://www.fao.org/3/CA1089EN/ca1089en.pdf>

OFDA/PSPM is considering a similar map for the CBFAMFEW countries.

Southern Armyworm (*Spodoptera eridania*) (SAW/SER). SAW was not reported during this month.

Strong quarantine services and monitoring and surveillance remain essential to prevent invasive pests invading a new territory.

Quelea sp. (QSP): QSP birds were reported feeding on grasses in northern Tanzania. No outbreaks were reported elsewhere during January (DLCO-EA, IRLCO-CSA).

Forecast: QSP outbreaks are expected to start in the southern Africa region from March/April when small grain crops mature and Kenya, Tanzania and Zimbabwe will be most at risk. Increased vigilance and timely interventions remain critical to avert crop damage (DLCO-EA, IRLCO-CSA).

Facts: QSP birds can travel ~100 km/day in search of food. An adult *Quelea* bird can consume 3-5 grams of grain and destroy the same amount each day. A medium density *Quelea* 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 during this month, but rodent pests are constant pre- and post-harvest threats to crops, produce and infrastructure. Vigilance and rapid responses remain critical to abate major damage.

FACTS: *On average, an adult rat can consume 3-5 gm of food (grain, etc.) per day; a population of 200 rats/ha (an extremely low density/unit area) can consume a quantity enough to feed an adult sheep/day, not to mention the amount of food the rats can damage, destroy, and contaminate making it unfit for human consumption, and the zoonotic disease this pest carry/transmit.*

All ETOP front-line countries must maintain regular monitoring and surveillance as needed. During cropping seasons, regular scouting is critical to avoid crop damage/losses. 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 as possible. It is critical that lead farmers, field scouts, community forecasters and others remain vigilant and report ETOP detections to relevant authorities as quickly as immediately.

OFDA's Contributions to ETOP Abatement Interventions

USAID/OFDA/PSPM is sponsoring through Arizona State University an operational research on soil amelioration to manage the Senegalese grasshopper (OSE). OSE is a notorious pest of cereal crops and pasture causing serious damage to small-scale farmers in its wide geographic coverage which extends from the Canneries, Cape Verde to nearly all sub-Saharan regions of Africa to India and neighboring countries. OSE occurs more

frequently than several other grasshopper/locust species and is a constant threat to small-scale farmers.

USAID/OFDA/PSPM is interacting with interested parties to explore means and ways to expand innovative technologies to countries affected by AAW, FAW and SGR to contribute to food security and livelihoods of vulnerable people and communities.

The online Pesticide Stock Management System (PSMS) that was developed by FAO with financial assistance from donors, including USAID/OFDA, continues benefiting participating countries across the globe. Thanks to the system, SGR frontline countries and others are effectively managing their strategic pesticide stocks and have been able to minimize/avoid accumulation of unusable and toxic obsolete pesticides and empty pesticide containers.

Note: A sustainable Pesticide Stewardship (SPS) can contribute to strengthening 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 boundaries and geographic regions. **End note.**

OFDA/PSPM does not support highly hazardous pesticides. It promotes an IPM approach to minimize risks associated with pesticide poisoning, stockpiling, and environmental pollution. An informed procurement and judiciously executed triangulations of surplus stocks from countries with large inventories of usable products to countries where they are

much needed and can be safely and effectively utilized is worth considering

Inventory of Strategic Pesticide Stocks for SGR Control

Inventory of Strategic SGR Pesticide Stocks changed in all regions as close to 250,000 ha were reported treated in total during the month (Egypt = 1,425; Eritrea = 15,083, Ethiopia = 22,550, India = 61,178, Iran = 2,041, Kenya = 20,000; Mauritania = 32, Oman = 2,128, Pakistan = 62,298, Saudi Arabia = 44,311, Sudan = 18,744, and Yemen = 15,465 (CNLA/Mauritania, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Ethiopia, PPD/Sudan).

Table 1. Estimated inventory of strategic SGR Pesticide Stocks in Frontline Countries during this month

Country	Quantity, l/kg*
Algeria	1,186,034~
Chad	34,100
Egypt	10,253 ULV, 45,796
Eritrea	527~
Ethiopia	10,543~
Libya	24,930~
Madagascar	206,000~ + 100,000 ^D
Mali	3,540
Mauritania	39,803
Morocco	3,412,374 ^D
Niger	75,701~
Oman	9,953~
Saudi Arabia	23,379~
Senegal	156,000~
Sudan	103,482
Tunisia	62,200 obsolete
Yemen	35,092 ^D ; 180 kg GM~

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

~ data may not be the 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

^{DM} = Morocco donated 30,000 l of pesticides to Mauritania

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*
- 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	ha	hectare (= 10,000 sq. meters, about 2.471 acres)
CERF	Central Emergency Response Fund	ICAPC	IGAD's Climate Prediction and Application Center
CIT	<i>Calliptamus italicus</i> (Italian Locust)	IGAD	Intergovernmental Authority on Development (Horn of Africa)
CLCPRO	Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)	IRIN	Integrated Regional Information Networks
CNLA(A)	Centre National de Lutte Antiacridienne (National Locust Control Center)	IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa
COR	Central SGR Outbreak Region	ITCZ	Inter-Tropical Convergence Zone
CPD	Crop Protection Division	ITF	Inter-Tropical Convergence Front = ITCZ)
CRC	Commission for Controlling Desert Locust in the Central Region	FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service
CTE	<i>Chortoicetes terminifera</i> (Australian plague locust)	Hoppers	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)
DDLC	Department of Desert Locust Control	JTWC	Joint Typhoon Warning Center
DLCO-EA	Desert Locust Control Organization for Eastern Africa	Kg	Kilogram (~2.2 pound)
DLMCC	Desert Locust Monitoring and Control Center, Yemen	L	Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)
DMA	<i>Dociostaurus maroccanus</i> (Moroccan Locust)	LCC	Locust Control Center, Oman
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
		NOAA (US)	National Oceanic and Aeronautic Administration
		NPS	National Park Services
		NSD	Republic of North Sudan
		NSE	<i>Nomadacris septemfasciata</i> (Red Locust)
		OFDA	Office of U.S. Foreign Disaster Assistance

PBB Pine Bark Beetle (*Dendroctonus* sp. – true weevils)
 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
 QSP *Quelea* species (Red Billed *Quelea* bird)
 SARCOF Southern Africa Region Climate Outlook Forum
 SCA *Schistocerca cancellata* (South American Locust)
 SFR *Spodoptera frugiperda* (SFR) (Fall armyworm (FAW))
 SGR *Schistoseca gregaria* (the Desert Locust)
 SPI *Schistocerca piceifrons piceiferons* (Central American Locust)
 SSD Republic of South Sudan
 SPB Southern Pine Beetle (*Dendroctonus frontalis*) – true weevils
 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.
 UF University of Florida
 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

Contact Person:

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, reach out to:

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