

Emergency Transboundary Outbreak Pests (ETOPs) Situation for May with a forecast through mid-July 2019
résumé en français est inclus

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹) situation continued improving in winter breeding areas in the western outbreak region (WOR). The situation in spring breeding areas in the central outbreak region (COR) remained active. In the eastern outbreak region (EOR) SGR activities continued in spring and summer breeding areas. Control operations in COR and EOR treated nearly 450,000 ha during May.

Forecast: The SGR situation will remain relatively calm in WOR and only small-scale breeding may occur, but in COR and EOR, the situation will further develop and locust numbers will increase during the forecast period.

Red (Nomadic) Locust (*Nomadacris septemfasciata*) (**NSE**): NSE situation continued to be a concern as swarm formations will likely intensify in the primary outbreak areas in Tanzania, Malawi, Zambia and Mozambique during the dry season.

Tree Locust, *Anacridium sp.* No report was received during May.

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

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

Italian (CIT), Moroccan (DMA), and the Asian Migratory Locusts (LMI): No update was received at the time this bulletin was compiled, however, DMA is expected to have continued developing in several CAC countries. LMI and ITC may have begun or will begin appearing in a few places during this month or soon, but major activities were not expected.

Fall Armyworm (*Spodoptera frugiperda*) (FAW): FAW infestations were reported in irrigated maize in Malawi, Zambia and Zimbabwe and rain-fed crops in Uganda, Tanzania, Kenya, and Ethiopia during May. A similar situation is likely in other countries in the region and elsewhere (refer to pages 6-9 for more detail).

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

African Armyworm (AAW) (*Spodoptera exempta*): No AAW outbreak was reported during May.

Quelea spp. (QSP): QSP outbreaks were reported in Kenya, Tanzania and Zimbabwe where the birds were detected attacking wheat, sorghum during May

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

*USAID/OFDA/PSPM monitors ETOPs regularly 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, as well as research centers, academia, private sector, NGOs and others and issues concise analytical reports and forecasts to stakeholders across the globe through its monthly Bulletins. **End summary***

RÉSUMÉ

La situation du Criquet pèlerin (*Schistoseca gregaria* - SGR): La situation concernant le criquet pèlerin (*Schistoseca gregaria* - SGR) a continué de s'améliorer dans les zones de reproduction hivernale de la région de l'épidémie de l'ouest (WOR). La situation dans les zones de reproduction printanière de la région centrale de l'épidémie est restée active. Dans la région est de la flambée épidémique, les activités SGR se sont poursuivies dans les zones de reproduction printanière et estivale. Les opérations de lutte dans le COR et la RAP ont traité près de 450 000 ha en mai.

Prévisions: La situation des SGR restera relativement calme à WOR et seule une reproduction à petite échelle pourra avoir lieu, mais dans le COR et la RAO, la situation se développera davantage et les effectifs acridiens augmenteront au cours de la période de prévision.

Criquet nomade rouge (*Nomadacris septemfasciata*) (NSE): La situation de l'ESN reste préoccupante alors que les formations d'essaims vont s'intensifier dans les principales zones d'infection en Tanzanie, au Malawi, en Zambie et au Mozambique pendant la saison sèche.

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

Le criquet arborial, *Anacridium spp.*: 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 à la date de rédaction du présent Bulletin.

Criquets italiens (CIT), marocains (DMA), Asian Migratory Locust (LMI): aucune mise à jour n'a été reçue au moment de la rédaction de ce bulletin. Toutefois, le DMA devrait avoir continué à se développer dans plusieurs pays de la CAC. LMI et l'ITC ont peut-être commencé à apparaître à quelques endroits au cours de ce mois, mais des activités majeures n'étaient pas prévues.

Chenille Légionnaire d'automne (*Spodoptera frugiperda*) (FAW): des infestations de FAW ont été signalées dans du maïs irrigué au Malawi, en Zambie et au Zimbabwe et dans des cultures pluviales en Ouganda, en Tanzanie, au Kenya et en Éthiopie en mai. Une situation similaire est probable dans d'autres pays de la région et ailleurs (voir pages 6-9 pour plus de détails).

Chenille Légionnaire africaine (AAW), *Spodoptera exempta*: aucun foyer d'AAW n'a été signalé en mai.

Quelea spp. oiseaux (QSP): Des épidémies QSP ont été signalées au Kenya, en Tanzanie et au Zimbabwe, attaquant des cultures de blé, de sorgho.

La surveillance active, un suivi, le partage d'informations et la mise en place d'interventions préventives opportunes restent indispensables pour atténuer les menaces que les ETOP représentent pour la sécurité alimentaire et les moyens de subsistance des communautés vulnérables.

L'USAID / OFDA / PSPM surveille régulièrement les opérations ETOP en étroite collaboration avec son réseau de PPD / DPV nationaux, d'entités régionales et internationales de surveillance et / ou de lutte contre les ravageurs, notamment la FAO, la CLCPRO, le CRC, le DLCO-EA et l'IRLCO-CSA, ainsi que centres de recherche, universités, secteur privé, ONG et autres et publie des rapports analytiques concis et des prévisions aux parties prenantes du monde entier par le biais de ses bulletins mensuels. Fin du résumé

Note: This ETOP Bulletin and previous SITREPs can be accessed on USAID Pest and Pesticide Management website: [USAID Pest and Pesticide Monitoring](#)

Weather and Ecological Conditions

During May, unfavorable ecological conditions prevailed in the grangerization

areas in **Mali**. Stormy showers were reported in the northern, central and southeastern parts of **Morocco** and as a result ecological conditions improved in some parts of the country during May. In Algeria, ecological conditions remained favorable along the perimeters of irrigation areas. In **Mauritania** and **Tunisia** ecological conditions remained

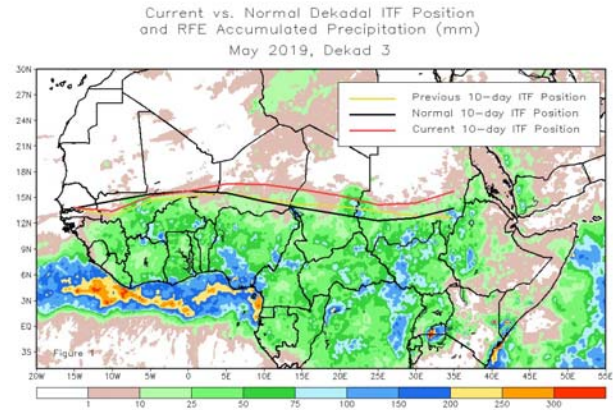
unfavorable to support locust survival and development during May (FAO-DLIS, CNLAA/Morocco, INPV/Algeria, CNLA/Mauritania, NOAA, 4/2019).

In **EOR**, good pre-monsoon rain fell along the Indo-Pakistan borders during early May and followed by widespread heavier rains and lighter showers during the 2nd and 3rd of May. This will allow favorable ecological conditions to develop earlier than usual and locusts to begin breeding (FAO-DLIS).

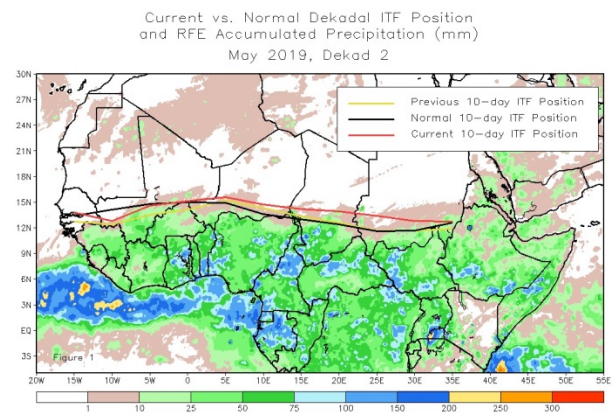
NSE Outbreak Regions: Rains subsided in most of the NSE outbreak areas towards the end of May, 2019. However, precipitations were recorded in Malagarasi Basin (Kaliua 152.2 mm) and Lake Rukwa plains (Muze 52.6 mm), Tanzania. Vegetation drying and grass burning which are in progress in NSE outbreak areas will force locusts to congregate and form swarms (IRLCO-CSA).

During the past 30 days, rainfall was above-average over southern Mali, Burkina Faso, local areas in Cote d'Ivoire, Ghana, Togo, Benin, western and northern Nigeria, northern Cameroon, Chad, local areas in CAR, many parts of DRC and South Sudan, southern and western Sudan, southern Ethiopia, southern Somalia, eastern Uganda, local areas in Kenya and Tanzania, southern South Africa and northern Madagascar.

Eastern Senegal, Guinea-Bissau, much of Guinea, Sierra Leone, Liberia, southwestern Mali, many parts of Cote d'Ivoire, central and eastern Nigeria, central and southern Cameroon, Equatorial Guinea, Gabon, Congo, parts of CAR, local areas in DRC, parts of northwestern Angola, Eritrea and many parts of Ethiopia had below-average rainfall (NOAA, June 3, 2019).



NOAA, June 2019



(NOAA, May 2019)

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 a Forecast for the Next Six Weeks are provided below

SGR – WOR: The locust situation remained calm in WOR during May. Only some hoppers and immature adults were detected in spring breeding areas in Aoulef and In Salah in the Central Sahara region of **Algeria** where preventive control treated some 16 ha in agricultural areas south of Adrar during May. A few scattered adults were reported in in Adra and Tagant in northwest **Mauritania** and on *Maerua crassifolia* in grangerization zone in Marat, Telhabit and Tarlit in northern **Mali** during May. The situation remained calm in other countries during May (CNLA/Mauritania, CNLAA/Morocco, CNLAP/Mali, DGSCVIA/Tunisia, INPV/Algeria, FAO-DLIS).

Forecast: Low numbers of mature and immature adults and perhaps hoppers will appear in spring breeding areas and near irrigated areas of the Central Sahara in **Algeria**. In **Mauritania**, where more adults than expected are believed to be present, the situation could change should rainfall begin in time for locusts to develop. Vigilance remains essential to avoid any major threats. Locusts from spring breeding areas will likely begin migrating to summer breeding areas in the south during the forecast period.

Unfavorable ecological conditions in **Mali** and other countries will likely disfavor any significant SGR development during the forecast period (CNLAA/Mauritania, CNLAP/Mali, CNLAA/Morocco, DGVS&CIA, FAO-DLIS, INPV/Algeria).

SGR – COR: The National Locust Control Units in the Red Sea region and the Middle East staged control operations and treated tens of thousands of ha. In **Saudi Arabia**, aerial and ground control operations controlled locusts on close to 75,000 during May. Swarms from eastern **Yemen** moved to the central highlands and to southern Saudi Arabia. A few swarms moved from Saudi Arabia to Jordan with the help of an unusual southerly wind. In **Jordan** control operations treated locusts on 2,900 ha during May. Adult groups and hoppers were detected along **Kuwait/Saudi** borders and controlled on 15,603 ha. Adult groups appeared on both sides of Egypt/Sudan borders and were treated on 3,341 ha in Egypt and 790 ha in Sudan. Control operations were not reported in Yemen, Oman or elsewhere in COR during this month (FAO-DLIS).

Forecast: In COR, spring breeding will taper off and uncontrolled locusts from **Saudi Arabia** will likely move to summer breeding areas in the interior of Sudan and to a lesser extent Yemen and start breeding by June in areas of recent rainfall. Should summer rains are on track, breeding will commence and go through two generations and increase locust numbers through October (FAO-DLIS, LCC/Oman).

SGR - EOR: SGR situation intensified in southeastern Iran, adjacent to southwestern Pakistan during May. Iran launched intensive ground and aerial control operations and controlled locust groups, hopper bands and swarms on

more than 346,180 ha. In Pakistan and India 4,135 ha and 1,560 ha were treated respectively (FAO-DLIS).

Forecast: Undetected and uncontrolled swarms from spring breeding areas in Saudi Arabia and the Iran-Pakistan border will likely migrate to summer breeding areas in Indo-Pakistan borders and start breeding (FAO-DLIS).

Red (Nomadic) Locust (NSE): NSE situation continued to be a concern as swarm formations will intensify in the primary outbreak areas in Tanzania, Malawi, Zambia and Mozambique during the dry season. Concentrations were detected in Ikuu–Katavi plains in Tanzania during ground survey carried out in May by MinAgeri. A similar situation is likely in other primary outbreak areas in Tanzania, Malawi, Zambia and Mozambique (IRLCO-CSA).

Forecast: Vegetation burning that has commenced in all NSE outbreak areas will force locusts to concentrate and form dense swarms. If left uncontrolled, the swarms will escape breeding areas and pose a threat to crops in adjacent areas (IRLCO-CSA).

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 update was received at the time this bulletin was compiled, but it is likely that DMA continued further developing in several CAC countries and CIT and LMI may have also begun appearing.

Forecast: DMA will continue further developing in the CAC region and LMI and CIT may also develop in some areas during the forecast period.

Fall armyworm (FAW) (S. frugiperda)

FAW outbreaks were reported in Kisumu, Uasin, Gishu, Trans Nzoia, Nandi, Narok, Busia, West Pokot, Elegeyo marakwet Counties in **Kenya**. In **Tanzania** outbreaks were reported in Kilimanjaro, Arusha and Manyara Regions. The pest was also detected in Morogoro Region during May. FAW presence was confirmed in Soroti and Bale Districts in **Uganda** during May.



FAW infested maize plant, Magole Village, Kilossa District, Morogoro Region, Tanzania, May 2019

In **Zimbabwe, Zambia and Malawi**, FAW infestations were reported in irrigated maize and control operations were launched by the affected farmers with technical and materials assistance from MinAgries (IRLCO-CSA, OFDA/PSPM).

In **Ethiopia**, FAW infestations were reported on 17,936 ha of 394,383 ha of

maize and sorghum in 764 villages in SNNPR and Oromo regions, mainly in SNNPR during the 3rd week of May (PPD/Ethiopia).

FAW had long reached sever southeast Asian countries was reported attacking maize crops in **China**. It is likely that FAW continued appearing in seasonal and irrigated maize and other crops in sub-Saharan Africa and Asia during May.

In CBFAMFEW project countries, sensitization and alerting farmers on routine scouting, monitoring, surveillance and control is intensified (IRLCO-CSA, OFDA/PSPM).

Forecast: FAW will likely continue affecting rain-fed and irrigated maize and other crops in several countries in sub-Saharan African and across Southeast Asia during the forecast period.

CBFAMFEW Community Forecasters and trap operators, scouting teams and extension agents are encouraged to remain vigilant and alert PPD staff, farmers, local communities and concerned authorities on egg, larval and moth detections on a timely manner.

Lack of reports on FAW in some FAW prone regions or countries does not necessarily mean non-presence of the pest either in rain-fed or irrigated crops. OFDA/PSPM continues the search for timely information and avail updates and alerts as necessary (OFDA/PSPM).

Note: *The potential for the presence of FAW in Sudan, more so along the Nile River, could be a serious threat as that could lead to the further spread of the pest northward where it could affect hundreds of thousands of ha of irrigation schemes along the Nile Valley and likely*

reaching the northeastern end of the continent (Egypt).

Seasonal movements of FAW coupled with trade and travel by land, water and air can significantly contribute to the further spread of FAW across nations, regions, and continents and could lead to the establishment of the pest in habitats with suitable ecological and climatological conditions.

With its voracious appetite and more than 186 species of plants to choose from, it is highly unlikely that FAW will ever go hungry under the current condition in anyone or more of its new territories.

End note.

Activity updates:



Uganda, May 2019)

USAID/OFDA senior technical advisor for pesticides and pests visited project sites in Tanzania and Uganda in May.

Tree planting ceremony in recognition of the CBAMFEW project in Gweri Village, Soroti District, in

During his visit, the technical advisor observed implementation of project activities, including national workshop on CBAMFEW project in Tanzania and forecasters' field data management, etc. He also participated in farmers' field day in Uganda and Tanzania. He interacted with CBAMFEW implementing entities and farmers, community focal persons, administration, FAO technical staff, crop protection director/ commission, national FAW focal persons, CABI, DLCO-EA, ICIPE

staff. He discussed a number of issues around the project, including performances, achievements, constraints, sustainability of the project post-CBFAMFEW, etc.

During the field visits, the advisor witnessed unanimous appreciations from the farmers, rural communities, administration and management entities for the assistance USAID provided to support the CBFAMFEW project.



Farmers' field day in Kitete Village, Kilosa District, Morogoro Region in Tanzania, 16 May, 2019)



Farmers' field day in Gweri Village, Soroti District, in Uganda, May 2019

CBFAMFEW project has developed a ToT in English language and <http://www.fao.org/3/CA2924EN/ca2924en.pdf> twenty eight (28) posters and flyers in 8 languages, including, Amharic, English, French, Luganda, Kinyarwanda, Oromfa, Runyankore and Swahili for dissemination across eastern Africa and the Horn. Participating countries have expressed interest to further translate the flyers into additional local languages for wider distributions..



Farmers' field day in Gweri Village, Soroti District, in Uganda, May 2019

Note: Several species of natural enemies of FAW have been identified in Ethiopia, Kenya, Tanzania, Madagascar, India, etc. and studies are being conducted on these natural enemies (parasites, parasitoids, predators and entomopathogens) to better understand their safety, efficacy, environmental impacts and other important traits. Some are being tested along-side other agro-ecological tools,, e.g., push-pull technology, etc., in an effort to develop effective, affordable, accessible, adaptable and sustainable means of managing the pest <http://www.informaticsjournals.com/index.php/jbc/article/viewFile/21707/17850>. **End note.**

Information resources

Highly hazardous pesticides cannot and must not be considered or used for FAW control!

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

<https://www.usaid.gov/sites/default/files/documents/1867/Fall-Armyworm-IPM-Guide-for-Africa-Jan-30-2018.pdf>

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

<https://sawbo-animations.org/video.php?video=//www.youtube.com/embed/5rxlpXEK5g8>

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 FAWRisk-Map provides information on the risk of household food insecurity due to FAW across Africa (see below)
<http://www.fao.org/emergencies/resources/maps/detail/en/c/1110178/>

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/>

Dissemination of safer, affordable, acceptable IPM-based pest management and assessment tools remains critical in abating FAW infestations and to minimize crop damage.

African Armyworm (AAW): AAW outbreak was not reported in the southern and eastern outbreak regions in Africa during May (DLCO-EA, IRLCO-CSA).

Forecast: AAW may appear in its secondary breeding areas in the central and northern outbreak regions in Kenya

and northern Tanzania during the forecast period. <http://www.armyworm.org/>



Pheromone traps must be maintained and monitoring must commence at the foot-hills of the seasonal rains. Trap operators are encouraged to collect trap data regularly and report to the national forecasting officers. Timely and appropriate preventive interventions remain critical to avoid a major crop damage (OFDA/AELGA).

Note: OFDA/PSPM has developed printable and web-based interactive maps for AAW project sites in project countries and potential participating countries:
<http://usaid.maps.arcgis.com/apps/Viewer/index.html?appid=8ff7a2eefbee4783bfb36c3e784e29cb>.

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

OFDA/PSPM is considering a similar map for the CBFAMFEW project sites

Southern Armyworm (*Spodoptera eridania*) (SAW/SER). SAW, was not reported in Africa during May.

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

Quelea sp. (QSP): QSP outbreaks were reported in Meru County in **Kenya** where the birds were detected damaging wheat crops. In **Tanzania**, QSP control

operations were carried out in Mvomero district by MinAgri in collaboration with DLCO-EA. In **Zimbabwe**, QSP were reported attacking sorghum crops in Mashonaland West Province and ground-based control was launched with materials and technical assistance from MinAgri (MAMID) (IRLCO-CSA).

Forecast: QSP are likely to continue being a problem to small grain crops in several countries during the forecast period, including Kenya, Tanzania, Zimbabwe, etc. (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 on rodents during May, but the pest is a constant threat to field and storage crops.

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, contaminate making it unfit for human consumption, not to mention the zoonotic disease this pest carries and can transmit.

All ETOP front-line countries must maintain regular monitoring and surveillance. During crop in-seasons, scouting must be implemented on a regular basis. 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.

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 across a wide swath. 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 AAW affected countries to contribute to food security to benefit farmers and rural communities.

The online Pesticide Stock Management System (PSMS) that was developed by the UN/FAO with financial assistance from donors, including USAID/OFDA continues benefiting participating countries across the globe.

Note: A sustainable Pesticide Stewardship (SPS) can contribute to strengthening a 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 discourages the use of hard core (including highly hazardous) pesticides and promotes an IPM approach to minimize risks associated with pesticide stockpiling, poisoning and pollution. A judiciously executed triangulation of surplus stocks from countries with large inventories to countries that can safely and effectively utilize and create a win-win situation worth considering

Inventories of Pesticide Stocks for SGR Prevention and Control

Inventory of national strategic stocks of SGR pesticides changed during May with close to 450,000 ha treated in total (detail: 3,341 ha in Egypt, 790 ha in Sudan, ~ 75,000 in Saudi Arabia, 2,900 ha in Jordan, 15,603 ha in Kuwait, 346,180 ha in Iran, 4,135 ha in Pakistan, and 1,560 ha in India (FAO-DLIS, INPV/Algeria).

Table 1. Inventory of Strategic SGR Pesticide Stocks in Frontline Countries

Country	Quantity (l/kg)*
Algeria	1,186,842~
Chad	34,100
Egypt	10,257 ULV, 46,429 l
Eritrea	580~
Ethiopia	9,681~
Libya	25,000~
Madagascar	206,000~ + 100,000 ^D
Mali	3,600
Mauritania	39,900
Morocco	3,414,428 ^D

Niger	75,750~
Oman	9,988~
Saudi Arabia	25,184~ -2,628l?
Senegal	156,000~
Sudan	108,291
Tunisia	62,200 obsolete
Yemen	40,090 ^D + 180 kg GM~

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

~ data may not be the most 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	Fledgling	immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs to breed
CABI	Center for Agriculture and Biosciences International	GM	GreenMuscle® (a fungal-based biopesticide)
CAC	Central Asia and the Caucasus	ha	hectare (= 10,000 sq. meters, about 2.471 acres)
CBAMFEW	Community-based armyworm monitoring, forecasting and early warning	ICAPC	IGAD's Climate Prediction and Application Center
CERF	Central Emergency Response Fund	IGAD	Intergovernmental Authority on Development (Horn of Africa)
CIT	<i>Calliptamus italicus</i> (Italian Locust)	IRIN	Integrated Regional Information Networks
CLCPRO	Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)	IRLCO-CSA	International Red Locust Control Organization for Central and Southern Africa
CNLA(A)	Centre National de Lutte Antiacridienne (National Locust Control Center)	ITCZ	Inter-Tropical Convergence Zone
COR	Central SGR Outbreak Region	ITF	Inter-Tropical Convergence Front = ITCZ)
CPD	Crop Protection Division	FAO-DLIS	Food and Agriculture Organizations' Desert Locust Information Service
CRC	Commission for Controlling Desert Locust in the Central Region	Hoppers	young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)
CTE	<i>Chortoicetes terminifera</i> (Australian plague locust)	JTWC	Joint Typhoon Warning Center
DDLC	Department of Desert Locust Control	Kg	Kilogram (~2.2 pound)
DLCO-EA	Desert Locust Control Organization for Eastern Africa	L	Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)
DLMCC	Desert Locust Monitoring and Control Center, Yemen	LCC	Locust Control Center, Oman
DMA	<i>Dociostaurus maroccanus</i> (Moroccan Locust)	LMC	<i>Locusta migratoriacapito</i> (Malagasy locust)
DPPOS	Department of Plant Protection and Quarantine Services, India	LMM	<i>Locusta migratoria migratorioides</i> (African Migratory Locust)
DPV	Département Protection des Végétaux (Department of Plant Protection)	LPA	<i>Locustana pardalina</i>
ELO	EMPRES Liaison Officers –	MoAFSC	Ministry of Agriculture, Food Security and Cooperatives
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases	MoAI	Ministry of Agriculture and Irrigation
EOR	Eastern SGR Outbreak Region	MoARD	Ministry of Agriculture and Rural Development
ETOP	Emergency Transboundary Outbreak Pest	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
 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

Point of Contact:

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:

Yeneneh Belayneh, PhD.
 Senior Technical Advisor and Project Manager
 USAID/DCHA/OFDA
ybelayneh@usaid.gov

Tel.: + 1-202-712-1859 (landline)
 + 1-703-362-5721 (mobile)

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