

**Global Emergency Transboundary Outbreak Pests (GETOP) Situation
Bulletin for March with a forecast through mid-May 2024**
résumé end français est inclus

SUMMARY

The Desert Locust, *Schistoseca gregaria* (SGR¹): During March, the desert locust (SGR) situation remained relatively calm in winter breeding areas in the Central Outbreak Region (COR); 1,695 ha in Sudan, 1,445 in Eritrea, 19 703 ha in Egypt, 17 693 ha in Saudi Arabia and 153 ha (hoppers) in Yemen were treated. No locusts were reported in Djibouti, Ethiopia, Oman, or Somalia during this month. In the Western Outbreak Region (WOR), only insignificant number of isolated mature and immature adults were reported in agricultural areas in Adrar, Algeria, and no locusts were reported elsewhere in the region. No locusts were reported in the Easter Outbreak Region (EOR) during this month.

Forecast: In COR, locusts that moved from winter breeding areas on the Red Sea coastal area move to the irrigated areas along the Nile River in Sudan and Egypt and to the interior of Saudi Arabis where they will likely breed during the forecast period. Based on the weather prediction, more precipitation and augmented by rains from potential tropical cyclones may occur in the Gulf of Aden and Arabian Peninsula from May into June creating favorable conditions for SGR development (regular surveillance, reporting and control remain important to abate any potential threats). In WOR, significant development is unlikely. In EOR, with normal to above-average precipitation predicted in spring breeding areas southeast Iran and southwest Pakistan, small-scale breeding is likely during the forecast period.

Red (Nomadic) Locust, *Nomadacris septemfasciata* (NSE): NSE situation remained generally calm although fledgling is expected to have taken place in the primary outbreak areas where surveys were to confirm.

African Migratory Locust, *Locusta migratoria migratorioides* (LMI - AML): Localized outbreaks of AML were reported late February and March 2024 in Botswana, Angola, and Namibia and controlled. AML populations persisted in Zambia and Kenya.

Malagasy locust, *Locust migrator capito* (LMC): No update was received during this month.

¹ Definitions of all acronyms and useful weblinks can be found on the last few pages of the bulletin.

Tree locust, *Anacridiums spp.* (ASP): Swarms of the Sahelian tree locust (*Anacridium melanorhodon*) were confirmed in 4 regions of Burkina Faso.

Central American Locust, *Schistocerca piceiferons* (CAL): No update was received, and the situation will remain calm until the rainy season begins in June - July.

South American Locust, *Schistocerca cancellata* (SAL): SAL was not reported during this month.

Italian (CIT), Moroccan (DMA), and Asian Migratory Locusts (LMI): DMA and CIT will begin appearing sometime in spring.

Fall Armyworm, *Spodoptera frugiperda* (FAW): FAW continued affecting maize growing areas in Malawi, Zimbabwe and elsewhere.

African Armyworm, *Spodoptera exempta* (AAW): Low infestations of AAW were reported on maize in Dondo, Nhamatanda and Buzi in Mozambique.

Quelea species (QSP): QSP outbreaks were reported attacking rice in Mbeya, Manyara, Kigoma and Dodoma regions in Tanzania. The pest was also reported in Masvingo Province in Zimbabwe. No updates were received elsewhere where the pest maybe present.

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

USAID/BHA/TPQ regularly monitors GETOPs in close collaboration with its global network of National MoA PPDs/DPVs/PHSs, regional and international pest monitoring and control entities, FAO, CLCPRO, CRC, DLCO-EA, and IRLCO-CSA, research centers, academia, private sector, civil societies, NGOs and others, and compiles and issues monthly analytical GETOP Bulletins (please refer to list of acronyms on the last few pages). **End summary**

RÉSUMÉ EN FRANÇAIS

La situation du Criquet pèlerin (*Schistoseca gregaria* SGR): En mars, la situation du criquet pèlerin (SGR) est restée relativement calme dans les zones de reproduction hivernale de la région centrale de l'épidémie (COR) et sur 1 695 ha au Soudan, 1 445 en Érythrée, 19 703 ha en Égypte, 17 693 ha en Arabie Saoudite et 153 ha. (larves) ont été traitées au Yémen. Aucun criquet n'a été

signalé à Djibouti, en Éthiopie, à Oman ou en Somalie au cours de ce mois. Dans la région occidentale de l'épidémie (WOR), seul un nombre insignifiant d'ailés isolés, matures et immatures, a été signalé dans les zones agricoles d'Adrar, en Algérie, mais aucun criquet n'a été signalé ailleurs dans la région. Aucun criquet n'a été signalé dans la région de la résurgence de Pâques (EOR) au cours de ce mois.

Prévisions: Dans la région du COR, les criquets qui se sont déplacés des zones de reproduction hivernale de la zone côtière de la mer Rouge se déplacent vers les zones irriguées le long du Nil au Soudan et en Égypte et vers l'intérieur de l'Arabie Saoudite où ils se reproduiront probablement au cours de la période de prévision. Sur la base des prévisions météorologiques, davantage de précipitations et de pluies provenant de potentiels cyclones tropicaux pourraient survenir dans le golfe d'Aden et la péninsule arabique de mai à juin, créant des conditions favorables au développement des SGR (une surveillance, un rapport et un contrôle réguliers restent importants pour atténuer toute menace potentielle.). Dans le WOR, un développement significatif est peu probable. Dans l'EOR, avec des précipitations normales à supérieures à la moyenne prévues dans les zones de reproduction printanière du sud-est de l'Iran et du sud-ouest du Pakistan, une reproduction à petite échelle est probable au cours de la période de prévision.

Criquet nomade (*Nomadacris septemfasciata* - NSE): la situation en matière de NSE est restée globalement calme, même si de nouveaux cas devraient avoir eu lieu dans les principales zones de résurgence où les prospections devaient confirmer.

Criquet migrateur africain (AML/LMI): migratorioïdes) (LMI – AML): des foyers localisés de AML ont été signalés fin février et mars 2024 au Botswana, en Angola et en Namibie et contrôlés. Les populations de LMA ont persisté en Zambie et au Kenya.

Criquet migrateur capito, (LMC): Aucune mise à jour n'a été reçue au cours de ce mois et des activités sont attendues.

Le criquet arborial, *Anacridium spp*: (ASP): Des essaims de criquet arboricole sahélien (*Anacridium melanorhodon*) ont été confirmés dans 4 régions du Burkina Faso.

Langosta Centroamericana, *Schistocerca piceiferons* (CAL) (Criquet Amérique centrale (CAL): Aucune mise à jour n'a été reçue et le ravageur restera en récession jusqu'au début de la saison des pluies en juin-juillet.

Criquet d'Amérique du Sud, *Schistocerca cancellata* (SAL): Aucun criquet n'a été signalé.

Criquets italiens (CIT), marocains (DMA), Asian Migratory Locust (LMI): DMA et CIT commenceront à apparaître au printemps.les saisons

Chenille Légionnaire d'automne (*Spodoptera frugiperda*, J. E. Smith) (FAW): La chenille légionnaire d'automne a continué à affecter les zones de culture du maïs au Malawi, au Zimbabwe et ailleurs.

Chenille Légionnaire Africaine (*Spodoptera exempta*) (AAW): De faibles infestations de chenille légionnaire africaine ont été signalées sur le maïs à Dondo, Nhamatanda et Buzi au Mozambique.

***Quelea spp* oiseaux (QSP):** des foyers de QSP ont été signalés attaquant le riz dans les régions de Mbeya, Manyara, Kigoma et Dodoma en Tanzanie. Le ravageur a également été signalé dans la province de Masvingo au Zimbabwe. Aucune mise à jour n'a été reçue ailleurs où le ravageur pourrait être présent.

La surveillance active des ETOP, le suivi, le partage d'informations et l'exécution d'interventions préventives en temps opportun restent essentiels pour réduire les menaces que les GETOP font peser sur la sécurité alimentaire et les moyens de subsistance des personnes et des communautés vulnérables.

USAID / BHA / TPQ surveille régulièrement les GETOP en étroite collaboration avec son réseau mondial de PPD/DPV/PHS nationaux du MoA, les entités régionales et internationales de surveillance et de contrôle des ravageurs, la FAO, la CLCPRO, le CRC, la DLCO-EA et l'IRLCO-CSA, les centres de recherche, le milieu universitaire, le secteur privé, la société civile, les ONG et autres, et compile et publie des bulletins analytiques mensuels GETOP (veuillez vous référer à la liste des acronymes sur les dernières pages). Fin du résumé

Note: All previous and current GETOP Bulletins can be accessed here: [USAID Pest and Pesticide Monitoring](#)

Additional GETOP resources can be found on the last pages.

Weather and Ecological Conditions

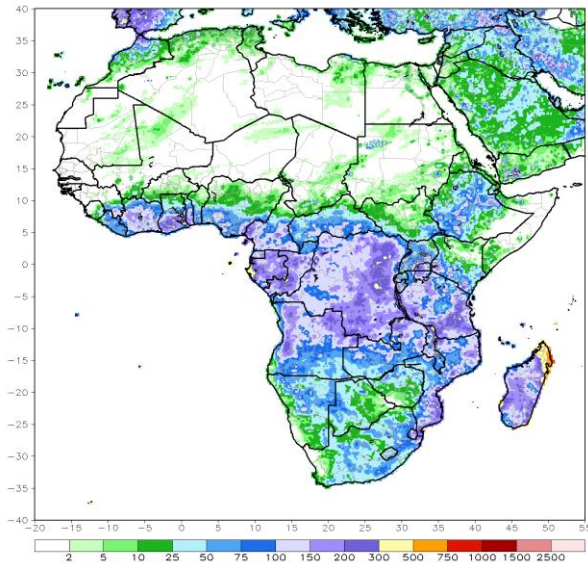
During March, rainfall was above-average in northern parts of western, and central Ethiopia, southwestern and central Eritrea, southern Kenya, parts of central,

southern, and eastern Tanzania, southeastern South Sudan, Djibouti, parts of far northwestern Somalia, and western Burundi. Rainfall was below-average in western, central, and most of southern South Sudan, southern Somalia,

most of Uganda, southwestern and south-central Ethiopia, northern and central Kenya, Rwanda, eastern Burundi, and some regions in northern, central, and southern Tanzania.

In Central Africa, rainfall was above-average in some parts of western and eastern Gabon, central Congo, east-central Cameroon, and some parts of central and eastern DRC. Rainfall was below-average in southern Cameroon, Equatorial Guinea, central and southern Gabon, northern Congo, southwestern, southern and central CAR, and most of western, northeastern, and parts of southeastern DRC.

RFE2 30-Day Total Rainfall (mm)
Period: 01Mar2024 - 30Mar2024



In West Africa, rainfall was above-average in parts of northwestern, central, and coastal Cote d'Ivoire, southern parts of Ghana, central and southern Togo, parts of southern Benin, northwestern Liberia, southeastern Guinea, and parts of southern Nigeria. Rainfall was below-average in east-central parts of Guinea, central and northern Sierra Leone, eastern Liberia, southwestern Cote d'Ivoire, northern parts of Ghana and Togo, northern and central Benin, southwestern Burkina Faso, and

southwestern and south-central portions of coastal Nigeria (NOAA 4/2024)

In southern Africa, rainfall was above-average in many parts of west-central, northern, and east-central Angola, some parts of northeastern Zambia, northern and parts of central Malawi, some parts of northern and southern Mozambique, Eswatini, west-central and eastern South Africa, and northern and southern Madagascar. Rainfall was below-average in southern, central, and far northwestern Angola, northern and central Namibia, most of Botswana, Zimbabwe, many parts of western, most of Zambia, northern and central Mozambique, central and southern Malawi, central and northeastern South Africa, Lesotho, and northwestern and central Madagascar.

Gulf of Aden and the Arabian Sea may experience cyclone activities in May and June resembling the 2018 cyclones that occurred in the region will likely bring more rains. There is a slight to moderate tilt in the odds to favor above-average rainfall over many places in the Sahel region, including Sudan, Western Ethiopia etc., during summer 2024.

There is a slight to moderate tilt in the odds to favor below-average rainfall over parts of Mexico during the NH spring 2024. There is a slight to moderate tilt in the odds to favor above-average rainfall over much of Central America and the Caribbean.

Most of the **NSE** outbreak areas received normal rainfall during March 2024 – Malawi: 31.9 to 237.6 mm, Mozambique: 139.0 to 158 mm, Tanzania: 191.3 to 450.08 mm and Zambia 30.7 mm.

The Caucasus and Central Asia (CCA):

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



[2019-2021 Desert locust outbreak \(FAO/DLIS\)](#)

Detailed Accounts of Monthly GETOP Situation and Forecast for the Next Six Weeks

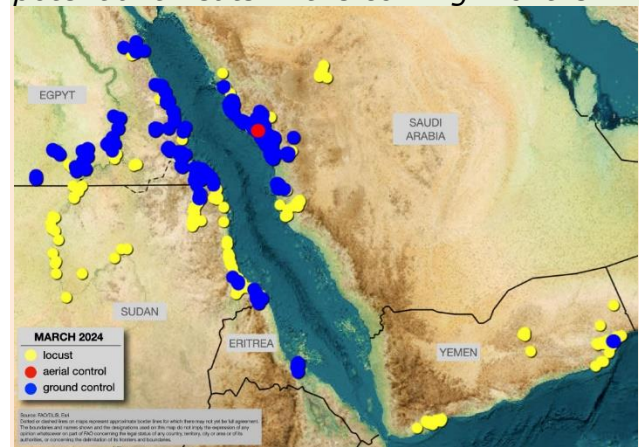
The **Desert Locust** (*Schistoseca gregaria* - **SGR**²): In COR, the SGR situation remained calm during March in winter breeding areas.

In Sudan, extensive ground surveys covered 92,430 ha along the Red Sea coast, northwest of the Red Sea hills and ground control treated 1,695 ha against immature groups and various stages of hopper bands. Vegetation is generally dry and soil moisture is very low to none in areas that were surveyed. In a Eritrea, 1,445 ha were controlled during March in the Red Sea region. Although vegetation is green in some places, soil moisture is dry and ecological conditions are unfavorable. In Ethiopia, surveys were not conducted, and locust scouts have not reported locust presence. No locusts were reported in Djibouti, Oman, or Somalia or elsewhere in the region during this month.

Forecast: In COR, locusts from the Red Sea coastal areas will move to the irrigated areas of the Nile River in southern Egypt and northern Sudan and the interior Saudi Arabia and Yemen and

begin breeding due to favorable conditions from rain that fell during March and likely to continue in April and May. Limited breeding may occur in northwest Somalia and eastern Ethiopia where favorable conditions develop. Potential tropical cyclones along Gulf of Aden and southern Yemen will likely bring more rains and create favorable breeding conditions.

Active surveillance and timely preventive interventions remain critical to abate any potential threats in the coming months.



SGR situation, FAO-ECLC, 4/2024

SGR – WOR: In WOR, ecological conditions were generally unfavorable, and the SGR situation remained calm during this month. Annual and perennial vegetation were green only in irrigated areas in Adrar region where insignificant number of isolated mature and immature adults were reported. No locusts were reported in Burkina Faso, Chad, Mali, Morocco, Niger, or Tunisia during this month.

Forecast: In WOR, significant development is not likely in the absence of favorable conditions. develop in WOR during the forecast period.

² Definitions of all acronyms can be found at the end of mature the report.

SGR - EOR: No locusts were reported in EOR - Afghanistan, India, Iran, or Pakistan during this month.

Forecast: As the temperature rises rainfall is expected to start in spring breeding areas and small-scale breeding will likely occur in parts of the coastal and interior areas of southeast Iran and southwest Pakistan.

SGR threats can be abated with coordinated and planned surveillance and preventive control interventions led by the National/PPD in collaboration with relevant national and regional organizations, adequate resources made available [by host authorities and partners] coupled with deterrence of unnecessary anthropogenic anomalies (e.g., conflicts, security incidences, blockage of transportation arteries, delayed resource release, unwarranted asset diversions, etc.).

Red (Nomadic) Locust (NSE): NSE situation remained relatively calm in the primary outbreak areas in the IRLCO-CSA region where fledglings are expected to have occurred.

Forecast: NSE fledglings are expected to concentrate and form swarms in the primary outbreak areas in Tanzania; Malawi, Mozambique, and Zambia. Survey and preventive control interventions remain critical to avoid crop damage.

African Migratory Locust (AML - LMI): Localized outbreaks of AML were reported between from late February and early March 2024 in Botswana's Gumare area in the North-West district (527 ha were reported affected and 29 ha

treated), 50 ha were treated in Gambos in Huila province of Angola; 10 ha were controlled in Liambezi and old Musokotwane in the Zambezi region of Namibia. The affected countries are experiencing a major drought. if unattended, AML invasion is likely to cause additional stress (FAO/SFS). AML populations persisted in Simalaha Plains in Zambia and Wajir County in Kenya.

Forecast: AML will likely concentrate and form swarms in Simalaha plains, Zambia. MoA extension staff and farmers are encouraged to intensify surveillance and report AML situation to the relevant authorities..

Active monitoring and surveillance remain critical to plan timely preventive control interventions and abate the threats the ETOPs pose.

Malagasy locust (Locust migratoria capito - LMC): LMC activities were not reported during this month.

Tree locust - *Anacridium spp* (*wernerellum* - AWE): Swarms of the Sahelian Tree Locust, (**Anacridium melanorhodon**) were confirmed in 4 regions of Burkina Faso.

Elegant grasshopper (*Zonocerus elegance* (ZEL): No update was received.

Central American Locust - *Schistocerca piceifrons* (CAL): No update was received at the time this bulletin was compiled and CAL is expected to remain in recession until the rainy season begins in June to July.

[Note: *CAL is a serious pest in 10 regions in Mexico (Campeche, Chiapas, Hidalgo, Oaxaca, San Luis Potosí, Tabasco, Tamaulipas, Veracruz, Quintana Roo and Yucatán - MoA/México), and in CA region, and it is known to attack hundreds of species of plants of economic importance, including agave, banana, beans, corn, cotton, peanut, rice, sesame, soybean, sorghum, sugarcane, and several species of fruit trees (Pech, CESVY-SENASICA, Mexico)*

South American Locust, *Schistocerca cancellata* (SAL) (a.k.a. Flying lobster): SAL was not reported during this month.

Italian (CIT), Moroccan (DMA) and Migratory (LMI) DMA and CIT are expected to begin appearing.

Forecast: DMA and CIT are expected to develop during the forecast period.

Fall armyworm (FAW): FAW continued affecting maize growing areas. Moderate infestations were reported in all Agricultural Development Divisions in Malawi where the pest was reported affecting considerable numbers of hectares. Infestations were also reported in Mashonaland West, Matabeleland South Masvingo, Midlands and Mashonaland East Provinces in Zimbabwe. Control operations were carried out by the affected farmers with technical and material support by MoA. It is likely that the pest is present in maize growing areas elsewhere.

Forecast: FAW has become a resident pest in several countries it has invaded since 2016 (its first appearance on the African continent). The pest will continue threatening crops and causing damage if left unattended.

Active surveillance, monitoring, reporting, and timely preventive interventions remain critical to abate major crop damage.

FAO-led Global Action for Fall Armyworm Control

NOTE: The Food and Agriculture Organization of the United Nations (FAO) and CIT continued active engagements in a transformative, coordinated Global Action for Fall Armyworm Control (GAFC) which was launched in December 2019 as an urgent response to the rapid spread of FAW. GAFC was intended to be implemented in 65 [target] countries across Africa, Near East and Asia-Pacific from 2020 to 2022: [FAO GLOBAL ACTION FOR FAW CONTROL](#)

BHA/TPQ is collaborating with partners to benefit farming communities and host-governments with the intention to scale up and spread gains across FAW prone regions, consistent with the spirit of GAFC and host-country strategies. These initiatives are built on experiences gained over the past several years, including outcomes of projects and programs supported through USAID legacy OFDA, legacy BFS, national partners, CGIARs, FAO, and several other entities.

Note: Several species of FAW natural enemies have been identified across different countries and regions and their efficacy, effectiveness, environmental impacts, safety, and other relevant parameters have been tested. Some have been in use in an IPM toolbox. For instance, a package of biological control for FAW was demonstrated in a video clip from Syria that *Trichogramma pretiosum*, an egg parasitoid, can be mass released to control the FAW egg populations. Bacterial insecticide, such as *Bacillus*

thuringiensis is sprayed four to five days after a *Trichogramma pretiosum* parasitoid was released to control any surviving FAW larvae. The third component in the package was mass release of a larval parasitoid, *Habrobracon hebetor*, that further disrupts the life cycle of FAW. Other environmentally friendly and safer alternatives are also being tried and utilized to prevent and mitigate FAW damage in many countries across the globe. End note.

African Armyworm (Spodoptera exempta, Walker) (AAW): Low infestations of AAW were reported on maize in Dondo, Nhamatanda and Buzi in Mozambique where affected farmers launched control operations with MoA support.

Forecast: AAW outbreaks are likely to continue attacking young and late-planted maize in some parts of Tanzania, Kenya, and Mozambique.

USAID legacy OFDA through DLCO-EA and host-country partners sponsored a project in East Africa where farmers and technical staff received training in AAW identification, detection, monitoring, surveillance, trap operations, reporting as well as managing which is still benefiting them and the farming communities.

Quelea species (QSP): QSP outbreaks were reported attacking rice and controlled in several districts in Tanzania. The bird was also reported attacking sorghum in Zimbabwe.

Forecast: QSP birds are likely to continue threatening small grain crops in Tanzania, Kenya, Zimbabwe and elsewhere where small grain crops are still in the field.

QSP prone countries are always encouraged to share with neighboring countries and relevant regions information on the pest situation, actions undertaken as well as follow up plans.

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

Rodents: No update was received during this month, but the pest remains a perennial problem to pre- and post-harvest crops across various regions.

FACTS: On average, an adult rat can consume 3-5 gm of food (grain, etc.) per day; a population of 200 rats/ha (a very low density/unit area) can consume a quantity enough to feed an adult sheep/day, not to mention the multiple times that amount of food the rats can damage, destroy, and contaminate making it unfit for human or animal consumption; rats are also zoonotic - diseases vectors and transmitters.

Coconut rhino beetle (CRB) (Oryctes rhinoceros – CRH): CRB outbreak was reported during previous months in the **Republic of Marshall Island** where the pest was observed attacking coconut plants. Actions to respond to the CRB threat continued. At the request of the GoRMI the UN/FAO deployed an expert who met with concerned authorities and partners and conducted assessments, provided training, and developed immediate and long-term actions.

CRB presence was reported in **Vanuatu**. This invasive pest species breeds profusely and attacks several plants, including coconut, palm oil trees, and several other crops across the southern Pacific regions.

All GETOP front-line countries are encouraged to maintain regular monitoring and surveillance as well as launch preventive control interventions in a timely manner. Regular crop scouting is critical to avoid damage/losses. Invasion countries must also remain alert. Regional and national ETOP entities - DLCO-EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, ELOs, National DPVs and PPDs, etc., are encouraged to continue sharing ETOP information and reports with stakeholders, including neighboring countries, and humanitarian and development partners, etc., as early and often as possible. Lead farmers, field scouts, community forecasters and others must remain vigilant and report ETOP detections to relevant authorities in their jurisdictions as quickly as possible. Strong surveillance, monitoring and quarantine enforcement remain critical to prevent invasive pest species.

NOTE – Advanced Technologies for GETOP Surveillance, Early Warning and Forecasting Enhance Effective GETOP Management: Innovative technologies, such as drones, for high-resolution images in remote and hard-to-reach inaccessible areas are being explored. Drones for locust monitoring, and localized control in sensitive, and hard to reach areas continuous improving showing promising results. While the range of agriculture-oriented drones may be limited for large-scale area-wide ETOP interventions, such as massive swarms and hopper bands, countries and partners have expressed interests to support work

on key parameters associated with these technologies.

Crowd and cloud sourcing for data collection, sharing, etc. are another set of assets that can be of great value for GETOP operations. Dynamic population and biotope modeling, from CIRAD and ICIPE, respectively, and accounting for associated parameters such as soil moisture, vegetation index, etc. that involved multiple partners – USAID, Penn-FAO, NOAA, NASA, CIRAD, ICIPE, National and International Research institutions, academia, private sector, and many more will certainly contribute to better understand ETOP – DL phenology, ecology, habitat range with a goal to manage them safely and effectively. **End note.**

ETOP Proliferation and Climatic Factors

Note: Climate induced weather anomalies contribute to an ecological shift in ETOP habitats, triggering risks in the outbreaks and resurgence of ETOPs and/or the emergence of new and invasive pest species. The frequency, extent, and payload of ETOP prevalence, appearances, and upsurges are partially attributed to the changes in the weather patterns - extensive, and above normal rainfall partly associated with the occurrence of multiple cyclones or persistent drought that significantly impact pest presence, proliferation causing additional stresses to food security and livelihoods of vulnerable communities and populations:

Case in point: multiple cyclones that occurred in the western Indian Ocean, in the Arabian Peninsula and the Horn of Africa region within a time span of less than two years, from May 2018 to December 2019, lead to major SGR

upsurges and outbreaks that continued impacting the COR region through 2021 [into 2022] End note; Scientific review of the impact of climate change on plant pests – A global challenge to prevent and mitigate plant pest risks in agriculture, forestry, and ecosystems. Rome. FAO on behalf of the IPPC Secretariat.

<https://www.fao.org/documents/card/en/c/cb4769en>.

BHA's Contributions to ETOP Abatement Interventions

USAID/BHA/TPQ continues its effort in strengthening national and regional capacity in GETOP prone countries across regions. The supports for GETOPs include projects on FAW in Eastern Africa, the Horn, locusts and grasshoppers in West Africa, desert locusts in the Red Sea region, the Horn of Africa, and the Arabian Peninsula, as well as three major locust species in the Caucasus and Central Asia (CCA) regions.

In Eastern Africa, Southern Africa and the Horn, a multi-year DRR project that targets community based FAW monitoring forecasting and early warning is in progress in all five countries (Ethiopia, Malawi, Rwanda, Uganda, and Zambia) under the auspice of the International Center for Insect Physiology and Ecology [ICIPE](#) in close collaboration with participating countries.

In the Caucus and Central Asia region, where tens of millions of farmers and herders are affected by three major locust species, BHA is co-funding a multi-year DRR project. The project is being implemented under the leadership of UNFAO in close collaboration with the affected countries in the regions [BHA CCA Locust Support](#).

BHA/TPQ/FS also co-sponsors a multi-year DRR locust project through the

UN/FAO in the CRC region with a focus on strengthening surveillance, monitoring, early detection, and early warning as well as management of the SGR to improve food security and livelihoods of tens of millions of vulnerable communities and contribute to the national economy.

USAID/BHA/TPQ/FSL supports operational research through Arizona State University on integration of alternative locust and grasshopper management tools into community and National Plant Protection Departments practices. This project is being implemented in West Africa in collaboration with Senegal/PPD, University of Gaston Berker University, St Lous, Senegal, CIRAD, French Institute of Development Research (IRD).

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

BHA/TPQ promotes an integrated pest management (IPM) approach - the Agency policies, and procedures - to help minimize health risks and protect the environment from misuse and mismanagement of pesticides, pesticide containing materials and empty containers, and improve safer and effective pest pesticide management interventions. An informed procurement decisions and use of pest management products as well as judiciously executed

triangulations of surplus stocks are worth considering.

Inventory of Strategic Pesticide Stocks for SGR Control

In March, the SGR strategic pesticide stocks were slightly reduced (1,695 ha were treated in Sudan and 1,445 ha in Eritrea, 17 693 in Egypt, 19,703 in Saudi Arabia).

Table 1. Estimated inventory of strategic SGR Pesticide Stocks in frontline and invasion countries.

Country	Quantity l/kg
Algeria	1,184,761~
Burkina Faso	2,572
Chad	65,420 + 169 bio-p
Egypt	6,989 ULV, 25,418~
Eritrea	7,555
Ethiopia	29,260~
Libya	24,930~
Kenya	?
Madagascar	9,335~+
Mali	240~ bio-p
Mauritania	31,723 + 316.5 ^{GM}
Morocco	3,375,082, ^D
~Niger	62,000
Oman	5,000~
Saudi Arabia	?
Senegal	154,372~
Somalia	?
Sudan	4,305~?
South Sudan	?
Tunisia	62,200 ^{OB} +200 ^{OBML} +1,025 ^{LV}
Uganda	?
Yemen	8,528; 172.35kg ^{GM} ~

*Includes different pesticides and formulations - ULV, EC and dust.

Bio-p = biopesticide

~ data may not be current.

+ = other MoA stocks are not included

? = data not available

^{GM} = GreenMuscle™ (fungal-based – *Metarhizium acridum* - biological pesticide, e.g., NOVACRID)

^{OB} = obsolete

^{ML} = malathion

^{LV} = Larvos

LIST OF ACRONYMS

- AAW African armyworm (*Spodoptera exempta*)
- 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)
- AML African Migratory (*Locusta migratoria migratorioides*)
- APLC Australian Plague Locust Commission
- APLC Australian Plague Locust Commission Bands groups of hoppers marching in the same direction
- ASARECA Association for Strengthening Agricultural Research in Eastern and Central Africa
- BHA Bureau for Humanitarian Assistance (USAID)
- CABI Center for Agriculture and Biosciences International
- CAL Central American Locust *Schistocerca piceifrons piceiferons*
- CBAMFEW Community-based armyworm monitoring, forecasting and early warning
- CCA Caucasus and Central Asia
- CERF Central Emergency Response Fund
- CIT *Calliptamus italicus* (Italian Locust)
- CLCPRO Commission de Lutte Contre le Criquet Pèlerin dans la Région Occidentale (Commission for the

	<i>Desert Locust Control in the Western Region)</i>		<i>ICAPC IGAD's Climate Prediction and Application Center</i>
CNLA(A)	<i>Centre National de Lutte Antiacridienne (National Locust Control Center)</i>		<i>IGAD Intergovernmental Authority on Development (Horn of Africa)</i>
COR	<i>Central SGR Outbreak Region</i>		<i>IRIN Integrated Regional Information Networks</i>
CPD	<i>Crop Protection Division</i>		<i>IRLCO-CSA International Red Locust Control Organization for Central and Southern Africa</i>
CRB	<i>Coconut rhino beetle (Oryctes rhinoceros – ORH)</i>		<i>ITCZ Inter-Tropical Convergence Zone</i>
CRC	<i>Commission for Controlling Desert Locust in the Central Region</i>		<i>ITF Inter-Tropical Convergence Front = ITCZ)</i>
CTE	<i>Chortoicetes terminifera (Australian plague locust)</i>		<i>FAO-DLIS Food and Agriculture Organizations' Desert Locust Information Service</i>
DDLC	<i>Department of Desert Locust Control</i>		<i>Hoppers young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)</i>
DLCO-EA	<i>Desert Locust Control Organization for Eastern Africa</i>		<i>JTWC Joint Typhoon Warning Center</i>
DLMCC	<i>Desert Locust Monitoring and Control Center, Yemen</i>		<i>Kg Kilogram (~2.2 pound)</i>
DMA	<i>Dociostaurus maroccanus (Moroccan Locust)</i>		<i>L Liter (1.057 Quarts or 0.264 gallon or 33.814 US fluid ounces)</i>
DPPQS	<i>Department of Plant Protection and Quarantine Services, India</i>		<i>LCC Locust Control Center, Oman</i>
DPV	<i>Département Protection des Végétaux (Department of Plant Protection)</i>		<i>LPA Locustana pardalina</i>
ELO	<i>EMPRES Liaison Officers –</i>		<i>LMC/ML Locusta migratoriacapito (Malagasy locust)</i>
EMPRES	<i>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases</i>		<i>Metarhizium acridum (a fungal entomopathogen used for locust and grasshopper control, e.g., NOVACRID (Benin isolate; Green Muscle (Niger and CIRO isolates); The entomopathogen was formerly named M. anisopliae var acridum and before that it was referred to as M. flavoveridea and Metarhizium sp.)</i>
EOR	<i>Eastern SGR Outbreak Region</i>		<i>MoAFSC Ministry of Agriculture, Food Security and Cooperatives</i>
ETOP	<i>Emergency Transboundary Outbreak Pests</i>		<i>MoAI Ministry of Agriculture and Irrigation</i>
FAW	<i>Spodoptera frugiperda (SFR) (Fall armyworm (FAW))</i>		<i>MoARD Ministry of Agriculture and Rural Development</i>
Fledgling	<i>immature adult locust /grasshopper that has the same phenology as mature adults, but lacks fully developed reproductive organs to breed</i>		<i>NALC National Agency for Locust Control</i>
GM	<i>GreenMuscle® (a Metharhizium fungal-based biopesticide); NOVACRID, Green Guard</i>		<i>NCDLC National Center for the Desert Locust Control, Libya</i>
ha	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>		<i>NOAA (US) National Oceanic and Aeronautic Administration</i>
			<i>NPS National Park Services</i>

NSD Republic of North Sudan
NSE *Nomadacris septemfasciata* (Red Locust)
OFDA Office of U.S. Foreign Disaster Assistance
PBB Pine Bark Beetle (*Dendroctonus* sp.: [Curculionidae](#) – 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, etc.)
SAL South American (*Locust Schistocerca cancellata*)
SARCOF Southern Africa Region Climate Outlook Forum
SGR *Schistoseca gregaria* (the Desert Locust)
SSD Republic of South Sudan
SPB Southern Pine Beetle (*Dendroctonus frontalis*) – true weevils
SWAC Southwest Asia DL Commission
PBB Pine Bark Beetle
PHS Plant Health Services
PSPM Preparedness, Strategic Planning and Mitigation (formerly known as Technical Assistance Group - TAG)
TPQ Technical and Program Quality Triangulation Transfer of donated pesticides from countries with large inventories with no immediate need to countries with immediate need through a third party 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 has emerged as a relatively new, dry season pest, largely associated with the destruction of its natural habitat through deforestation, land clearing for agricultural and other development efforts and climate anomalies.

Point of Contact:

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To learn more about our activities and programs, and/or download archived GETOP Bulletins, please, visit our website: [USAID/BHA PPM](#)

Additional resources on GETOPs

USAID/BHA Pest and Pesticide Monitoring and GETOP Bulletins: [USAID/BHA PPM](#)
USAID Pest Management Guidelines [USAID PMG](#)
[US EPA IPM](#)
SGR: USAID/BHA supports for locust operations in the CCA Region [BHA CCA Locust Support](#)
UN/FAO Desert Locust (SGR) Watch [FAO Desert Locust Watch](#)
FAO Locust Hub [SGR HUB](#)
FAO Locust Emergency Appeal for Greater Horn of Africa and Yemen [SGR Appeal for GHA and Yemen](#)
FAO Desert Locust Crisis [SGR Crisis](#)
FAO/Central Region Commission for the SGR Control [SGR CRC](#)
FAO/Western Region Commission for SGR Control [SGR CLCPRO](#)

FAO SGR Response Overview Dashboard

[FAO SGR Dashboard](#)

FAO Locust Watch – Caucasus and

Central Asia [CCA Locust Watch](#)

IGAD Climate Predication and Application

Centres [ICPAC Climate SGR](#)

The Desert Locust Control Organization

for Eastern Africa [DLCO-EA](#)

FAW:

USAID FtF FAW [USAID FAW](#)

USAID FAW PEA/PERSUAP [FAW PERSUAP](#)

FAO FAW Monitoring and Early warning
System [FAW EW&M](#)

FAO-USAID Global Action for FAW Control
webinars [GAFC](#)

FAO NURU FAW Application [Nuru the
talking app for FAW](#)

FAW management animation SAWBO

[FAW Management Animation](#)

[FAW GAFC Map 2022](#)

[CABI on FAW](#)

CABI on Invasive species [Invasive
Species Compendium](#)

AAW:

[Armyworm](#)

Famine Early Warning System Network

[FEWS NET](#)

NOAA Climate Prediction Center [NOAA](#)

[CPC](#)