

**Emergency Transboundary Outbreak Pest (ETOP) Situation Bulletin for
August 2020 with a forecast through mid-October**
résumé en français est inclus

SUMMARY

The **Desert Locust** (*Schistoseca gregaria* - **SGR**¹): The SGR situation remained serious in the central outbreak region (COR) during August. Breeding continued in **Ethiopia** and **Somalia** with swarms arriving from **Yemen** further exacerbating the situation. Control operations treated 54,703 ha in Ethiopia and 8,800 ha in Somalia during this month. Swarm movements from northern **Kenya** to Ethiopia, **Uganda** and **South Sudan** declined and only very few arrived in northern Uganda and southeastern South Sudan (250 ha were treated) during August. Scattered adults were detected in several places in summer breeding areas in **Sudan** where more than 178,000 ha were surveyed during this month. Several mature swarms invaded **Eritrea** and spread throughout the highlands and the Red Sea coast where good rains fell in August. In **Yemen**, hoppers, adult groups and swarms continued developing in the central highlands south of Sana'a in the interior and southern coastal areas and some adults were detected on the Red Sea coast and control operations treated 5,909 ha during this month. Swarms from **Yemen** invaded southwest **Saudi Arabia**, and some reached the Red Sea coast near Jizan. Control operations treated mature swarms on 1,355 ha in southwest **Saudi Arabia** and southern Red Sea coast. In **Oman**, adult groups and swarms were treated on some 58 ha on the southern coast. In the eastern outbreak region (EOR), extensive hatching and hopper and band formations occurred in **India** and, to a lesser extent, in southeast **Pakistan** and intensive control treated hoppers on 49,124 ha in Rajasthan, India and 26,381 ha in Tharparkar, Pakistan during August. In the western outbreak region (WOR), the situation remained calm and only a few isolated and scattered adults were detected in Mauritania, Mali, Niger and Chad. <http://www.fao.org/ag/locusts/en/info/info/index.html>

Forecast: In COR, locusts will continue further developing in **Ethiopia, Somalia, Yemen** and **Eritrea**. The autochthonous swarms in **Ethiopia**, and **Somalia** and those coming from **Yemen** will likely follow the seasonal wind and move southward and reach southeastern **Ethiopia** and southern Somalia and may even reach **Kenya** during the forecast period. **Sudan** will likely witness increased locust populations as breeding is expected to occur where ecological conditions have improved from summer rains. In EOR, fledging from previous breeding will form adult groups and small swarms which will mature, breed and lay eggs along the India and Pakistan borders. The ongoing intensive control operations that reduced parental populations will continue further reducing hoppers and bands from the 2nd

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

generation breeding during the forecast period in the region in EOR. The WOR will likely remain generally calm and only limited breeding may occur in parts of **Mauritania, Mali, Niger** and **Chad** during forecast period. <https://locust-hub-hqfao.hub.arcgis.com/>

Thanks to the collective efforts of development and humanitarian partners, host countries, NGOs, international and regional organizations, Pvt., etc. - the fight against the locust invasions has been intensified and is making a difference. It remains critical that all SGR affected countries maintain vigilance and regular surveillance, monitoring and launch timely control interventions. Sustaining the much appreciated generosity of development and humanitarian partners that made a difference in the locust campaign operations is always encouraged as it plays a crucial role in minimizing impacts of the locusts on food security and livelihoods of tens of millions of vulnerable people and communities amidst the rapidly spreading and debilitating COVID-19 pandemic and other stressors.

Red (Nomadic) Locust (*Nomadacris septemfasciata*) (**NSE**): No update was received at the time this report was compiled, however, it is likely that NSE persisted in primary breeding areas in Malawi, Mozambique, Tanzania.

African Migratory Locust: *Locusta migratoria migratorioides* (**LMI**): LMI populations were reported in Zambia and Zimbabwe. The presence of the pest in northern Botswana and Namibia were also reported earlier.

Tree Locusts, *Anacridium spp.* (**ASP**): ASP report was not received during this month.

Central American Locust, *Schistocerca piceiferons* (**CAL**): No update was received at the time this bulletin was compiled, but it is likely that the pest persisted in some countries in Central and South America.

South American Locust, *Schistocerca cancellata* (**SCA**): No update was received on SCA at the time this report was compiled, however, however, it is likely that the pest continued appearing in several South American countries - *Argentina, Bolivia, Brazil, Paraguay and Uruguay during this month.*

Italian (CIT), Moroccan (DMA), and Asian Migratory Locusts (LMI): CIT and LMI presence and control operations continued in CAC region whereas DMA has completed egg laying and died out.

Fall Armyworm (*Spodoptera frugiperda*) (**FAW**): FAW was reported in Tanzania and it is likely the pest was present in other maize growing countries growing countries.

African Armyworm (AAW) (*Spodoptera exempta*): AAW outbreak was not reported during this month.

Quelea spp. (QSP): QSP outbreak continue threatening small grain crops in Kenya and Uganda.

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): La situation de la SGR est restée grave dans la région centrale de l'épidémie (COR) en août. La reproduction s'est poursuivie en Éthiopie et en Somalie, des essaims arrivant du Yémen, aggravant encore la situation. Les opérations de lutte ont traité 54 703 ha en Éthiopie et 8 800 ha en Somalie au cours de ce mois. Les mouvements d'essaims du nord du Kenya vers l'Éthiopie, l'Ouganda et le Soudan du Sud ont diminué et très peu sont arrivés dans le nord de l'Ouganda et le sud-est du Soudan du Sud (250 ha ont été traités) en août. Des ailés épars ont été détectés à plusieurs endroits dans les zones de reproduction estivale du Soudan, où plus de 178 000 ha ont été recensés au cours de ce mois. Plusieurs essaims matures ont envahi l'Érythrée et se sont répandus dans les hautes terres et la côte de la mer Rouge où de bonnes pluies sont tombées en août. Au Yémen, des larves, des groupes d'ailés et des essaims ont continué à se développer dans les hauts plateaux du centre au sud de Sanaa, dans les zones côtières intérieures et méridionales, et des ailés ont été détectés sur la côte de la mer Rouge et les opérations de lutte ont traité 5 909 ha au cours de ce mois. Des essaims du Yémen ont envahi le sud-ouest de l'Arabie saoudite et certains ont atteint la côte de la mer Rouge près de Jizan. Les opérations de lutte ont traité des essaims matures sur 1 355 ha dans le sud-ouest de l'Arabie saoudite et sur la côte sud de la mer Rouge. En Oman, des groupes d'ailés et des essaims ont été traités sur quelque 58 ha de la côte sud. Dans la région orientale de l'épidémie (EOR), des éclosions et des formations de larves et de bandes extensives se sont produites en Inde et, dans une moindre mesure, dans le sud-est du Pakistan et des larves traitées par lutte intensive sur 49.124 ha au Rajasthan, en Inde et 26.381 ha à

Tharparkar, Pakistan en août. Dans la région ouest de l'épidémie (WOR), la situation est restée calme et seuls quelques adultes isolés et épars ont été détectés en Mauritanie, au Mali, au Niger et au Tchad

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

Prévisions: Au COR, les criquets continueront de se développer en Éthiopie, en Somalie, au Yémen et en Érythrée. Les essaims autochtones en Éthiopie et en Somalie et ceux en provenance du Yémen suivront probablement le vent saisonnier et se déplaceront vers le sud et atteindront le sud-est de l'Éthiopie et le sud de la Somalie et pourraient même atteindre le Kenya pendant la période de prévision. Le Soudan connaîtra probablement une augmentation des populations de criquets, car une reproduction devrait avoir lieu là où les conditions écologiques se sont améliorées à cause des pluies estivales. Dans l'EOR, l'envol d'une reproduction précédente formera des groupes d'ailés et de petits essaims qui mûriront, se reproduiront et pondront le long des frontières de l'Inde et du Pakistan. Les opérations de lutte intensive en cours qui ont réduit les populations parentales continueront de réduire davantage les larves et les bandes de reproduction de 2e génération pendant la période de prévision dans la région de l'EOR. Le WOR restera probablement généralement calme et seule une reproduction limitée peut avoir lieu dans certaines parties de la Mauritanie, du Mali, du Niger et du Tchad pendant la période de prévision <https://locust-hub-hqfao.hub.arcgis.com/>

Grâce aux efforts collectifs des partenaires au développement et humanitaires, des pays hôtes, des ONG, des organisations internationales et régionales, du Pvt., Etc. - la lutte contre les invasions acridiennes s'est intensifiée et fait la différence. Il reste essentiel que tous les pays touchés par la SGR maintiennent la vigilance et la surveillance régulière, le suivi et lancent des interventions de lutte en temps opportun. Soutenir la générosité très appréciée des partenaires de développement et humanitaires qui ont fait une différence dans les opérations de campagne antiacridienne est toujours encouragé car il joue un rôle crucial dans la minimisation de l'impact des criquets sur la sécurité alimentaire et les moyens de subsistance de dizaines de millions de personnes et de communautés vulnérables au milieu de la rapide propagation et débilitante de la pandémie de COVID-19 et d'autres facteurs de stress.

Criquet nomade (*Nomadacris septemfasciata*) (NSE): Aucune mise à jour n'a été reçue au moment où ce rapport a été rédigé, cependant, il est probable que l'NSE ait persisté dans les principales zones de reproduction au Malawi, au Mozambique et en Tanzanie.

Criquet migrateur africain: *Locusta migratoria migratorioides* (LMI): Des populations de LMI ont été signalées en Zambie et au Zimbabwe. La présence du

ravageur dans le nord du Botswana et en Namibie a également été signalée plus tôt.

Le criquet arborial, *Anacridium spp*: (ASP): Le rapport ASP n'a pas été reçu ce mois-ci.

Criquet Amérique centrale, *Schistocerca piceifrons piceiferons* (CAL): Aucune mise à jour n'a été reçue au moment de la compilation de ce bulletin, mais il est probable que le ravageur persiste dans certains pays d'Amérique centrale et d'Amérique du Sud.

Criquet d'Amérique du Sud, *Schistocerca cancellata* (SCA): Aucune mise à jour n'a été reçue sur la SCA au moment de la compilation de ce rapport, cependant, il est probable que le ravageur ait continué à apparaître dans plusieurs pays d'Amérique du Sud - Argentine, Bolivie, Brésil, Paraguay et Uruguay au cours de ce mois.

Criquets italiens (CIT), marocains (DMA), Asian Migratory Locust (LMI): Les opérations de présence et de lutte de CIT et de LMI se sont poursuivies dans la région de la CAC, tandis que la DMB a terminé la ponte et s'est éteinte.

Chenille Légionnaire d'automne (*Spodoptera frugiperda*) (FAW): La FAW a été signalée en Tanzanie et il est probable que le ravageur était présent dans d'autres pays producteurs de maïs.

Chenille Légionnaire africaine (AAW), *Spodoptera exempta*: aucune épidémie d'AAW n'a été signalée ce mois-ci.

***Quelea spp. oiseaux* (QSP):** l'épidémie de QSP continue de menacer les cultures de petites céréales au Kenya et en Ouganda.

La surveillance active, le suivi et les interventions préventives et curatives opportunes ainsi que le partage des information 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, including previous issues can be accessed and downloaded on USAID Pest and Pesticide Monitoring website: [USAID Pest and Pesticide Monitoring](#)

Additional resources on ETOPs can be found on the last pages of this Bulletin.

Weather and Ecological Conditions

In **COR**, the ITF reversed direction and returned northward during the 3rd dekad of August moving the north of the climatological average position along most of its length. The mean western (10W-10E) portion of the ITF was approximated at 21.0N, which was north of the mean position by 1.4 degrees and 1.3 degrees north of its position during the 2nd dekad of the month. This anomalous position resulted in enhanced rains over central areas of Mali and Niger.

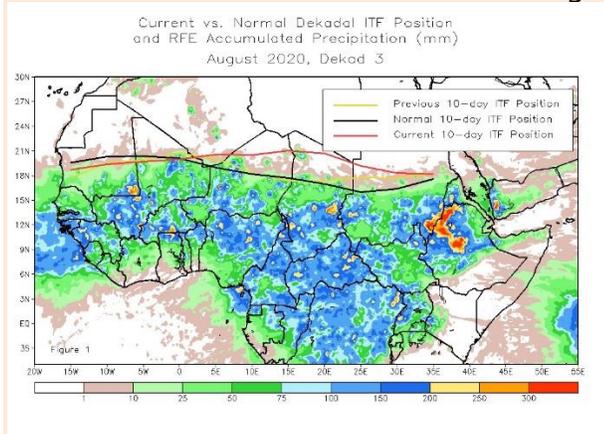


Figure 1 above shows the position of the ITF during the 3rd dekad of August relative to the long-term climatological position during the same Dekad period compared to its position during the 2nd dekad of August (NOAA). The mean eastern (20E-35E) portion of the ITF was located at 18.5N, which was well to the north of the mean position by 1.7 degrees and .7 degree north of its position the previous dekad. The unusual

northerly position for the ITF led to heavy rains over Chad, Sudan, and northern Ethiopia and reaching Eritrea.

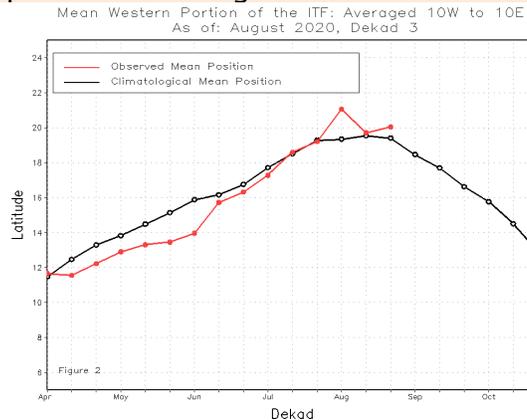


Figure 2 – Latitude value of ITF position in the western region (NOAA, 9/2020)

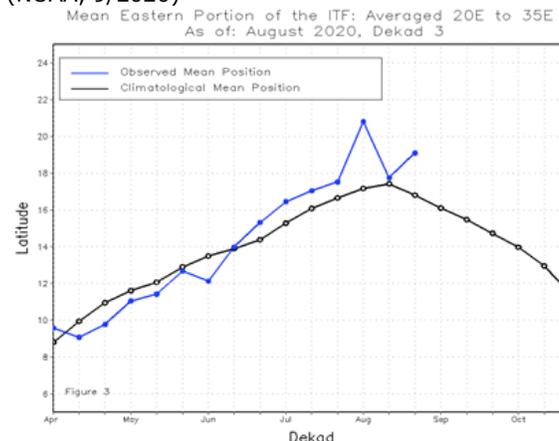
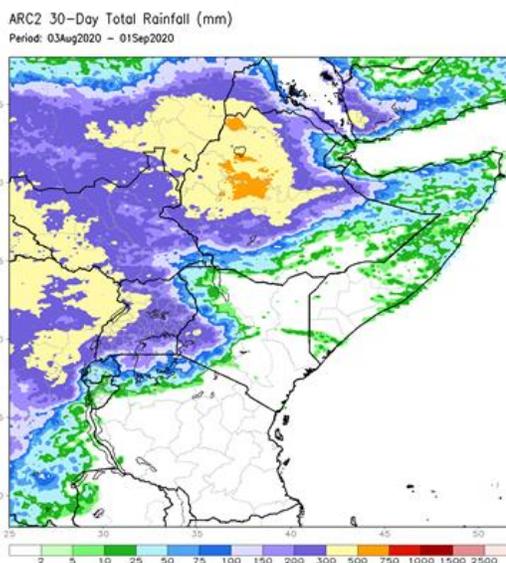
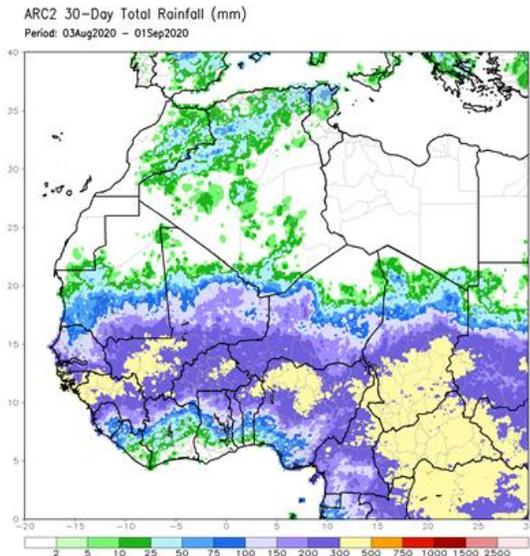


Figure 3. Latitude position of ITF in its eastern part (NOAA, 9/2020)



NOAA 9/2020



NOAA 9/2020

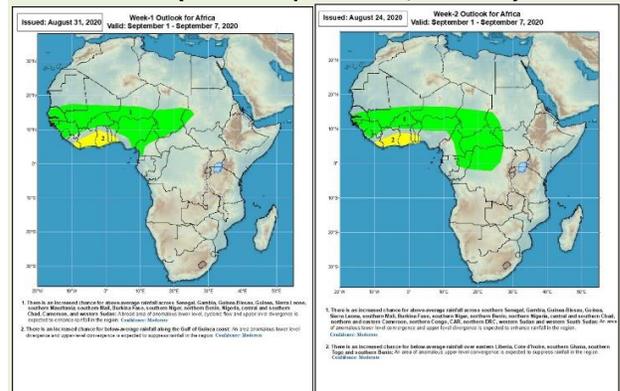
In EOR, heavy rainfall continued in the summer breeding areas along both sides of the India and Pakistan borders throughout August. As a result, annual vegetation further developed and ecological conditions continue being favorable for locust breeding throughout Rajasthan and northern Gujarat in India as well as Tharparkar, Nara, and Cholistan deserts in Pakistan. Favorable conditions also developed in the Lasbela valley west of Karachi and heavy rains and flooding occurred on the 27th in Karachi where a record 345 mm were received in a single day, with the week's total reaching 760 mm (FAO-DLIS).

The **NSE** outbreak region remained generally dry during July. Only isolated showers were reported in Gorongosa (13 mm), Nhamatanda (12 mm), Buzi (17 mm), and Mafambisse (19 mm) in the Buzi-Gorongos plains, and in Dimba plains, Dimba (70 mm) and Caia (5 mm) in Mozambique (IRLCO-CSA).

CAC Region: In CAC, mostly remained hot and dry with limited precipitation in some places in CA.

Precipitation outlook: 1-7 September, there is an increased chance for above-average rainfall across Senegal, Gambia, Guinea-Bissau, Guinea, Sierra Leone, southern Mauritania, southern Mali, Burkina Faso, southern Niger, northern Benin, Nigeria, central and southern Chad, Cameroon, and western Sudan. There is an increased chance for below-average rainfall along the Gulf of Guinea coast.

8-14 September, there is an increased chance for above-average rainfall across southern Senegal, Gambia, Guinea-Bissau, Guinea, southern Mauritania, southern Mali, Burkina Faso, southwestern Niger, northern Cote d'Ivoire, northern Ghana, northern Togo, northern Benin, Nigeria, southwestern Chad, as well as northern and eastern Cameroon (see map below, NOAA).



SGR proliferation vis-a-vis climate factors

Note: Changes in the weather pattern such as increased or decreased temperatures and precipitation can contribute to an ecological shift in ETOP habitats and could increase or decrease the risk of pest outbreaks, resurgence and/or emergence of new pests. The extended SGR outbreaks and upsurges are partially attributed to the

change in the weather pattern, i.e., extensive and above normal rainfall partly associated with the occurrence of multiple cyclones over a period of less than two years – May 2018 to December 2019 in the COR region.

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 Desert Locust (*Schistoseca gregaria* - **SGR**²): The SGR situation remained serious in COR during August. Summer breeding started in northern **Ethiopia** where an increasing number of hopper bands formed and swarms that arrived from Yemen further increased parental stock. Control operations treated 54,703 ha in Ethiopia during this month. In Somalia, control operations treated 8,800 ha during this month. Several mature swarms invaded **Eritrea** and southwest Saudi Arabia from Ethiopia and Yemen, respectively, where breeding and hopper band formation is likely. Control operations treated 1,301 ha in Eritrea during August. In **Kenya**, swarms continuously declined due to control operations and outward migrations to Uganda, South Sudan and Ethiopia, and control operations treated 5,454 ha in Kenya during this month. A few swarms moved from northwest Kenya to adjacent areas of **Uganda** and **South Sudan** (250 ha controlled. In **Somalia**, immature swarms persisted on the northwest plateau between Hargeisa and Boroma down the escarpment to the coast. Mature solitarious groups were detected near Silil on the coast and immature swarms were also observed on the plateau northwest of Iskushuban and

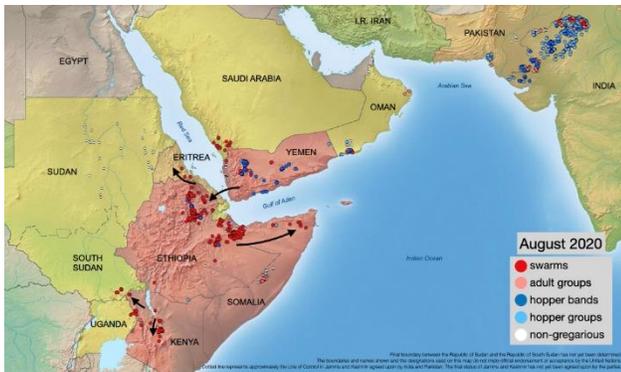
near E rigavo. Immature adults were also detected in the central region of Galguduud between Dusa Mareb and Galkayo. Control operations treated 8 800 ha with biopesticides mostly by air. In **Djibouti**, swarms flying towards Ethiopia were detected in the 2nd week of August and only a few scattered mature adults were observed on the ground, but not crop damage was reported (DLCO-EA, FAO-DLS, FAO/SSD, PPD/Ethiopia, SPPV/Djibouti).

Scattered adults were detected in several places in summer breeding areas in **Sudan** where more than 178,000 ha were surveyed during this month. In **Yemen**, hoppers, and adult groups and swarms continued developing and appearing in several places in the central highlands south of Sana'a in the interior and southern coastal areas and some adults were detected on the Red Sea coast. Control operations treated 5,909 ha during this month. Mature swarms were controlled on 1,355 ha in southwest **Saudi Arabia** and southern Red Sea coast. In **Oman**, adult groups and swarms were treated on some 58 ha on southern coast (DLMCC/Yemen, FAO-DLIS, LLC/Oman, PPD/Sudan).



Immature adult locust impeding a survey vehicle in eastern Ethiopia, (Source: DLCO-EA, 8/2020)

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



SGR situation for August (9/2020, FAO-DLIS)

Forecast: In COR, breeding will increase locust numbers in eastern Ethiopia, northern Somalia, across Eritrea and Yemen where ecological conditions will remain favorable, unless control operations are intensified during the forecast period. Several mature swarms that invaded Eritrea from Ethiopia and southwest Saudi Arabia from Yemen will breed during the forecast period. Depending on weather and ecological conditions, some swarms may remain immature in eastern Ethiopia and northern Somalia and spread south towards Kenya on the back of the seasonal winds in October. Swarms from Yemen will likely ride the same wind trajectory and reach Somalia and continue further southwest into Kenya during the next rainy season between October and December. Sudan will likely see increased locust numbers from widespread, but small-scale autochthonous breeding in West and North Darfur, West and North Kordofan, White Nile, Kassala, northern part of the Northern States and the western side of the Red Sea Hills, including the Nubian Desert. Breeding may also occur on the Red Sea coast and northeastern subcoastal areas of recent rainfall (DLCO-EA, DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Ethiopia, SPPV/Djibouti).

SGR - EOR: In the eastern outbreak region (EOR), extensive hatching and

hopper and band formations occurred in **India** and, on a smaller scale, in southeast **Pakistan** where intensive control operations treated hopper groups and bands on 49,124 ha in Rajasthan, India and 26,381 ha in Tharparkar, Pakistan during August (FAO-DLIS).



SGR movement forecast during August, FAO-DLIS, 8/2020

Forecast: In EOR, fledging will form adult groups and small swarms along the India and Pakistan borders. Swarms will mature, breed and form 2nd generation hoppers and bands in October, but on an expectedly reduced level given the impressive control operations that have been undertaken and continue in both India and Pakistan (BHA/TPQ, FAO-DLIS).

SGR - WOR: In the WOR, the situation remained calm and only a few isolated and scattered adults were detected in Mauritania, Mali, Niger and Chad (ALNA/Chad, CNLAP/Mali, CNLA/Mauritania, CNLAA/Morocco, CNLA/Tunisia, FAO-DLIS, FAO-DLIS).

Forecast: In WOR, limited breeding is likely in **Chad, Niger, Mali,** and **Mauritania,** but significant development is not likely in the coming months.

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): No update was received at the time this report was compiled, however, it is likely that NSE swarms persisted in the primary breeding areas in Malawi, Mozambique, Tanzania and Zambia (BHA/TPQ).

Forecast: NSE swarms will likely persist in the primary breeding areas in Malawi, Mozambique, Tanzania and Zambia Zambu. As the dry season progresses and vegetation areas shrink, dense groups and swarms are expected to form. If left uncontrolled, the pest will likely migrate to challenge vulnerable people and communities (BHA/TPQ)

African Migratory Locust, LMI: Low to medium-density outbreaks of hopper bands and fledglings of LMI occurred in Kalabo, Lukulu, Sikongo, Sesheke and Mwanzi districts of Zambia over an estimated 75 000 ha. Ground control was carried out jointly by IRLCO-CSA and MinAgri and 96% Fenitrothion was utilized. In Zimbabwe, mild LMI outbreaks were reported in the Low Veld region affecting Mukwasine and Hippo Valley Sugarcane Estates. Control was carried out by the affected farms (BHA/TPQ).

Forecast: Receding of flood water along the Zambezi River and its tributaries will create suitable conditions for egg laying for LMM during the forecast period. Continued breeding will allow swarm formations. The pest will likely start developing in northern Botswana (Chobe and Okovango) and Namibia in the coming rainy season and threaten crops and pasture. If left unattended, some of the swarms will likely invade neighboring areas and threaten crops. According to IRLCO-CSA, aerial surveillance to assess

the situation in the Simalaha plains, northern parts of the Zambezi plains and the Kafue Flats in August are necessary. If left unattended swarms will threaten maize, wheat and sugarcane crops in neighboring areas. It is to be recalled that LMI was detected in northern Botswana Okavango and Chobe and in northeastern Namibia as early as February 2020 and persisted through June threatening crops and grazing land (FAO/ROSFS).

Central American Locust - *Schistocerca piceifrons peceifrons* (CAL): No update was received during this time, however, it is likely the pest continued appearing and being a problem.

South American Locust, *Schistocerca cancellata* (SAL): No update was received at this time, but the pest likely persisted in several countries where it was reported earlier - Argentina, Bolivia, Brazil, Paraguay and Uruguay during July <https://www.voanews.com/americas/argentina-battles-locust-plague-northern-province>.

Italian (CIT), Moroccan (DMA) and Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): DMA season has ended in all countries. CIT and LMI are expected to have continued with egg laying season before they end their seasonal developments during the forecast period; note: COVID-19 restrictions continued slowing down activities (BHA/TPQ/PMI) <http://www.fao.org/locusts-cca/en/>

Forecast: DMA activities will remain calm till next spring. CIT and LMI will further develop before they begin declining during the forecast period.

Fall armyworm (FAW): FAW infestation was reported in irrigated Maize fields in

Meru district, Arusha region. Updates were not available from other regions at the time this Bulletin was compiled, but it is likely the pest persisted across maize growing areas in Asia, including China and other maize growing regions across Asia, Pacific and elsewhere. It is to be recalled that this year FAW movement to Northern China occurred at least three months earlier than last year, suggesting the likelihood of the pest becoming a resident in country's largest (45%) corn producing region (BHA/TPQ, DLCO-EA, USDA/FAS).

Forecast: FAW will likely continue affecting rain-fed and irrigated maize and other cereal crops across sub-Saharan Africa, Asia, the Pacific Regions and elsewhere during the forecast period.

Areas suitable to Fall Armyworm

Regions with little forest cover, a minimum annual temperature of 18–26 °C and receiving 500–700 mm of rainfall in the three wettest months are prone to fall armyworm infestation as predicted by the species distribution models based on occurrences in Africa and the Americas.

ENVIRONMENTAL SUITABILITY INDEX

Not suitable Marginal Suitable Highly suitable
0 10 20 30 40 50 60 70 80 90 100



Source: CAB, 2019. Invasive Species Compendium, Wallingford, UK: CAB International.
P. K. Dutta, 19/06/2019

REUTERS

Active monitoring, surveillance, reporting and preventive and curative actions remain critical to abate significant crop damage (BHA/TPQ).

Recent Events on FAW: The first meeting of the Technical Committee of the Global Action for Fall Armyworm Control (GAFC) was conducted on **May 18, 2020**. The GAFC is a pioneering initiative that aims to mobilize USD 500 million over the period 2020–2022 to take radical, direct and coordinated measures to fight FAW at a global level. The 3 key objectives of the GAFC are to:

- Establish a global coordination and regional collaboration on monitoring, early warning, and intelligent pest management of FAW;
- Reduce crop losses caused by FAW and
- Reduce the risk of further spread of FAW to new areas (Europe and South Pacific).

Key Activity update: BHA/TPQ/FSL is working on innovative intervention projects to benefit large numbers of small-scale farming communities in affected countries with the intention to scale-up cross different FAW prone regions. This initiative will building on experiences gained over the past several years, including through OFDA and RFS sponsored initiatives.

Note: Several species of FAW natural enemies have been identified in Ethiopia, Kenya, Tanzania, Madagascar, India, etc. and are being further studied to determine their efficacy, environmental impacts and safety. **End note.**

African Armyworm (AAW): AAW outbreaks were not reported during this month (DLCO-EA).

Forecast: AAW activities will likely remain calm in the primary outbreak areas during the forecast period (DLCO-EA, BHA/TPQ).

Note: OFDA developed printable and web-based interactive maps for AAW: <http://usaid.maps.arcgis.com/apps/Viewer/index.html?appid=8ff7a2eefbee4783bfb36c3e784e29cb>
OFDA/PSPM is considering a similar map for the CBFAMFEW countries.

Strong surveillance, monitoring and quarantine enforcement remain critical to prevent invasive pest species.

Quelea sp. (QSP): QSP infestations were controlled in Kenya's Narok County where the pest was reported causing damage to wheat fields. The pest was also reported attacking rice fields in Kingdom Rice scheme in Bulambuli District, in northeastern Uganda where it damaged 800 ha of rice fields before it left the area. Updates were not received from other QSP prone countries, but it is likely that the pest continued threatening off season and in season small-grain crops (DLCO-EA, BHA/TPQ).

Forecast: QSP continue posing a threat to small grain cereal crops in several countries in southern and eastern Africa as well as elsewhere during the forecast period (BHA/TPQ, DLCO-EA).

Facts: QSP birds 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 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, however, it is likely that the pest continued being a problem to crops and produce (BHA/TPQ).

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, an Au COR, les criquets continueront de se développer en Éthiopie, en Somalie, au Yémen et en Érythrée. Les essaims autochtones en

Éthiopie et en Somalie et ceux en provenance du Yémen suivront probablement le vent saisonnier et se déplaceront vers le sud et atteindront le sud-est de l'Éthiopie et le sud de la Somalie et pourraient même atteindre le Kenya pendant la période de prévision. Le Soudan connaîtra probablement une augmentation des populations de criquets, car une reproduction devrait avoir lieu là où les conditions écologiques se sont améliorées à cause des pluies estivales. Dans l'EOR, l'envol d'une reproduction précédente formera des groupes d'ailés et de petits essaims qui mûriront, se reproduiront et pondront le long des frontières de l'Inde et du Pakistan. Les opérations de lutte intensive en cours qui ont réduit les populations parentales continueront de réduire davantage les larves et les bandes de reproduction de 2e génération pendant la période de prévision dans la région de l'EOR. Le WOR restera probablement généralement calme et seule une reproduction limitée peut avoir lieu dans certaines parties de la Mauritanie, du Mali, du Niger et du Tchad pendant la période de prévision. d the zoonotic disease this pest carry/transmit.

All ETOP front-line countries must maintain regular monitoring and surveillance and launch control interventions as needed. Regular crop scouting is critical to avoid damage /losses. Invasion countries must also remain on alert. Regional and national ETOP entities - DLCO-EA, IRLCO-CSA, DLCCs, DLMCC, CNLAs, National DPVs and PPDs, ELOs, etc., are encouraged to continue sharing ETOP information with stakeholders as often as possible. Lead farmers, field scouts, community forecasters and others must remain vigilant and report ETOP detections to relevant authorities as quickly as possible.

OFDA’s Contributions to ETOP Abatement Interventions

USAID/OFDA/PSPM is sponsoring an operational research through Arizona State University to develop a tool to manage the Senegalese grasshopper (OSE).

OSE is a notorious pest of cereal and vegetable crops as well as pasture and causes serious damage to small-holder farmers in its wide geographic coverage extending from the Canneries, to Cape Verde to nearly all sub-Saharan Africa regions to India and beyond. This pest occurs more frequently than several other grasshopper/locust species and is a constant threat to small-holder farmers.

USAID/BHA/TPQ continuously explores parties interested in developing and expanding innovative technologies to help minimize the impacts of ETOPs on food security and livelihoods of the most vulnerable peoples and communities across regions.

The online Pesticide Stock Management System (PSMS) that was developed by FAO with financial assistance from donors, including USAID/OFDA, that continued benefiting participating countries across the globe was halted due to lack of resources to maintain the system. FAO has agreed to search for resources and revive the PSMS system. Thanks to the system, SGR frontline countries and others had been able to effectively manage their strategic pesticide stocks and minimize/avoid accumulation of unusable 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 promotes an IPM approach to minimize risks associated with pesticide poisoning, stockpiling, and environmental contamination. 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 is worth considering

Inventory of Strategic Pesticide Stocks for SGR Control

During August, inventory of pesticide stocks changed in all regions except WOR. Close to 222,446 ha (a significant decrease from June due to intensive control, decline in locust numbers from end of life, and increased mobility in some areas) to were treated (Eritrea = 1,310 ha; Ethiopia = 54,703 ha; India_ 49,124 ha; Kenya = 4,520 ha; Oman = 58 ha; Pakistan = 26,381; Saudi Arabia = 1,355 ha; Somalia = 8,800 ha; South Sudan = 250 ha; Uganda = ?; and Yemen = 5,909 ha).

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

Country	Quantity, l/kg*
Algeria	1,186,034~
Chad	34,100
Egypt	10,253 ULV, 45,796
Eritrea	527~

Ethiopia	110,543~
Libya	24,930~
Kenya	~
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~
Somalia	~
Sudan	103,482
South Sudan	
Tunisia	62,200 obsolete
Uganda	
Yemen	35,000 ^D ; 180 kg GM~
<p>*Includes different pesticides and formulations - ULV, EC and dust;</p> <p>~ data may not be current;</p> <p>^D = Morocco donated 100,000 l of pesticides to Madagascar and 10,000 l to Mauritania in 2015</p> <p>^D = In 2013 Morocco donated 200,000 l to Madagascar</p> <p>^D = Saudi donated 10,000 to Yemen and pledged 20,000 l to Eritrea</p> <p>^{DM} = Morocco donated 30,000 l of pesticides to Mauritania</p> <p>GM = <i>Green Muscle</i>TM (fungal-based biological pesticide, e.g., NOVACRID)</p>	

LIST OF ACRONYMS

AAW *African armyworm (Spodoptera expempta)*

AELGA *Assistance for Emergency Locust Grasshopper Abatement*

AFCS *Armyworm Forecasting and Control Services, Tanzania*

AfDB *African Development Bank*

AGRA *Agricultural Green Revolution in Africa*

AME *Anacridium melanorhodon (Tree Locust)*

APLC *Australian Plague Locust Commission*

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

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

CABI *Center for Agriculture and Biosciences International*

CAC *Central Asia and the Caucasus*

CBAMFEW *Community-based armyworm monitoring, forecasting and early warning*

CERF *Central Emergency Response Fund*

CIT *Calliptamus italicus (Italian Locust)*

CLCPRO *Commission de Lutte Contre le Criquet Pèlerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)*

CNLA(A) *Centre National de Lutte Antiacridienne (National Locust Control Center)*

COR *Central SGR Outbreak Region*

CPD *Crop Protection Division*

CRC *Commission for Controlling Desert Locust in the Central Region*

CTE *Chortoicetes terminifera (Australian plague locust)*

DDLC *Department of Desert Locust Control*

DLCO-EA *Desert Locust Control Organization for Eastern Africa*

DLMCC *Desert Locust Monitoring and Control Center, Yemen*

DMA *Dociostaurus maroccanus (Moroccan Locust)*

DPPQS *Department of Plant Protection and Quarantine Services, India*

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

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To learn more about our activities and programs, please, visit our website:

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

Additional resources on SGR and other ETOPs

SGR

USAID Pest Monitoring:

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

Archived ETOP Bulletins:

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

UN/FAO Desert Locust Watch

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

FAO Locust Hub

<https://locust-hub-hqfao.hub.arcgis.com/>

FAO Locust Emergency Appeal for Greater Horn of Africa and Yemen

http://www.fao.org/fileadmin/user_upload/emergencies/docs/Greater%20Horn%20of%20Africa%20and%20Yemen%20%20Desert%20locust%20crisis%20appeal%20%20May%202020.pdf

<http://www.fao.org/emergencies/crisis/desertlocust/en/>

FAO visuals on SGR

<http://tv.fao.org/>

FAO Desert Locust Crisis

<http://www.fao.org/emergencies/crisis/desertlocust/en/>

CIT, DMA and LMI – FAO-PPPD

<http://www.fao.org/locusts-cca/en/>

DLCO-EA

<http://www.dlco-ea.org/final/index.php/about-us>

FAO/Central Region Locust Control Commission

<http://desertlocust-crc.org/Pages/index.aspx?CMSId=8&lang=EN>

FAO/Western Region Locust Control Commission
<http://www.fao.org/clcpro/fr/>

FAO Locust Watch - Central Asia and Caucasus
<http://www.fao.org/locusts-cca/en/>

USAID supports for locust operations in the CAC Region: <http://www.fao.org/locusts-cca/programme-and-donors/projects-donors/en/>

FAO SGR Response Overview Dashboard
<http://www.fao.org/locusts/response-overview-dashboard/en/>

FAO Locust Hub
<https://locust-hub-hqfao.hub.arcgis.com/>
<http://www.fao.org/ag/locusts/en/activ/DLIS/eL3suite/index.html>

FAW
USAID FtF FAW
<https://www.agrilinks.org/post/fall-armyworm-africa-guide-integrated-pest-management>

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

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

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

FAO NURU FAW Application
<http://www.fao.org/news/story/en/item/1141889/code/>

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

FAO FAW Monitoring and Early warning System
<http://www.fao.org/3/CA1089EN/ca1089en.pdf>

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

<https://www.invasive-species.org/wp-content/uploads/sites/2/2019/03/Fall-Armyworm-Evidence-Note-September-2017.pdf>

AAW
<http://www.armyworm.org/latest-armyworm-forecast-irlco-csa-oct-2018/>