Summary

The Desert Locust (SGR) infestations persisted in May along the Red Sea coast in Saudi Arabia where aerial and ground control treated hoppers and swarms on more than 25,000 ha. Small-scale operations were carried out in Western Sahara in Algeria, in northwest Mauritania and southwestern Morocco. Breeding occurred in spring breeding areas in southeast Iran and western Pakistan where close to 12,700 ha were sprayed during this month. Control operations declined in southeastern Egypt and overall the situation remained fairly calm elsewhere in the outbreak and invasion areas during this period. No surveys were carried out in Mali, Niger, Tunisia, Chad and Libya during this period (CNLA/Mauritania, CNLAA/Morocco, DLCO-EA, DPPQS/India, FAO-DLIS, INPV/Algeria, and PPD/Sudan).

Forecast: The operation in progress on the Red Sea coast in Saudi Arabia will likely keep the current infestations under control. However, escapee adults possibly concentrate in areas of green vegetation and form small groups and swarms and ultimately reach the interior of Yemen east of Sana’a in the coming weeks. If good rains fall in these areas, breeding will commence and locust numbers will increase during the forecast period. While the ongoing political unrest in Yemen undermines survey and control operations, efforts should be made to reduce the risk of large-scale populations developing and invading the Region at large. Small groups or swarms from Saudi Arabia may reach the summer breeding areas in northern Sudan and scattered adults will likely appear in the summer breeding areas in northern Sahel in Mauritania, Mali, Niger and Chad during the forecast period. Active surveillance and preventative interventions should be exercised to avoid unexpected surprises (CNLA/Mauritania, CNLAA/Morocco, DLCO-EA, DPPQS/India, FAO-DLIS, INPV/Algeria, and PPD/Sudan).

Other ETOPs

Red (Nomadic) Locust (NSE): No NSE update was received at the time this report was compiled.

Madagascar Migratory Locust (LMC): LMC situation is on the decline in the southwestern outbreak areas in Madagascar as swarms continued moving northeast and west and some have already reached the central and southeast regions during this period. Swarms were also reported east of south Horombe, in Marerano and on Belomotra plateau. Copulating adults were observed in the surroundings of Manambien between Tsivory and Tranomaro in the south and southeast. Swarms were seen flying out of the Karimbola plateau and the coastal lowland savanna areas in Androy and in Ankazoabo plateau heading northwest. Swarms and hoppers were controlled on more than 22,500 ha during this month and more than 205,306 ha have been protected or controlled since the current campaign began on November 28, 2010. As part of human safety and environmental protection, 640 empty 200-liter pesticide barrels have been recovered.
and retained in Toliara (Tuléar) and the Zonal locust operation base for future disposal. The two helicopters deployed for survey and control operations have logged a combined total of 744 hours and 38 minutes as of end of May, 2011.

**Forecast:** Movement of dense swarms will continue, particularly towards east, northeast and northwest in the coming months. The situation will remain calm in the southwest where conditions have become mostly unfavorable, but more activities may be seen in the northwest and western parts of the country where winter crops may be threatened (FAO-CNA).

**Note:** The UN/FAO and the Malagasy Center for Locust Control are spearheading the current locust control campaign in the country. The United States Agency for International through its Office of Foreign Disaster Assistance (OFDA) responded in time and favorably to the appeal issued in support of the locust emergency campaign operations. Other donors have pledged and/or made contributions and it is anticipated that this will likely continue. End note.

**Moroccan (DMA), Italian (CIT) and Migratory (LMI) locusts in Central Asia and the Caucasus (CAC):** DMA further developed in Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan and to some extent Turkmenistan and hoppers were treated on more than 607,000 ha in April through mid-May. DMA and CIT activities will likely continue in the coming months.

**Armyworm (AAW):** AAW outbreaks were reported in Harari Region, Dire Dawa Administrative council, Oromiya Region and Somali Region in eastern Ethiopia during the fourth week of May. The caterpillars were at an early stage and control operations were being organized by the regional Agricultural Bureaus (DLCO-EA).

**Quelea (QQU):** A DLCO-EA aircraft controlled QQU on 1,160 ha in several regions of Tanzania using 2,300 l avicide during this month. Rice, finger millet, bulrush and sorghum crops were saved from the QQU attack. Operations were in progress in Morogoro and Mbeya regions at the time this report was compiled. No reports were received in Kenya and no QQU were seen in Ethiopia during this period (DLCO-EA, IRLCO-CSA).

**OFDA/AELGA** (Assistance for Emergency Locust and Grasshopper Abatement) will continue monitoring ETOP situations in all regions and issue updates and advices as often as necessary. End summary

**Progress in SGR Frontline Countries:**
SGR frontline countries (FCs) in Sahel West Africa, namely Chad, Mali, Mauritania and Niger have established autonomous national locust control units (CNLA) responsible for DL activities.

Funds provided by the African Development Bank, the World Bank, USAID, France, FAO, host-governments, neighboring countries and others enabled the FCs to equip CNLAs with necessary tools, materials and infrastructure as well as help train staff to prevent and respond to DL outbreaks and avoid the threats they pose to food security and livelihoods of vulnerable communities.
OFDA ETOP Activities

- OFDA/TAG continues its initiatives in pesticide risk reduction through stewardship network (PRRSN) to ensure safety of vulnerable people as well as protect their assets and the environment against pesticide pollution. OFDA/TAG successfully launched two sub-regional PRRSNs in Eastern Africa and the Horn. Discussions that began several months ago to launch similar initiatives in North Africa and the Middle East were halted by the ongoing situation in the regions. Dialogue on introducing similar initiatives in other regions is underway.

- OFDA continues its support for capacity strengthening to mitigate, prevent and respond to and risks of ETOP emergencies and associated human health threats and environmental pollutions.

- OFDA encourages and supports [FAO's] initiative to strengthen national and regional capacities in Central Asia and the Caucasus (CAC) to help coordinate locust monitoring, reporting as well as interventions among neighboring countries. The ultimate goal of the initiative is to prevent and mitigate locust threats and improve food security and livelihoods of vulnerable communities.

All SITREPs can be accessed on our website at:

http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/locust/

Weather and ecological conditions

During the third dekad of May, the Inter-Tropical Front (ITF) significantly moved northward, particularly at its eastern segment and reached a mean average positions of 14.9N, two degrees ahead of the climatology mean position and far north of the previous dekad position of 10.9N due to enhanced southerlies in the Gulf of Guinea region and moisture convergence from the Congo Air Boundary.

The mean western portion of the ITF was at about 15.4N, ahead of the climatology mean by 0.3 degrees (see map above) (NOAA).

During the 2nd dekad of May, the western segment of the Front reached 14.0N and coincided with the climatology mean position, but the eastern segment was only 0.6 degrees north of its previous position of 10.3N, due to strong northerlies from the Sahara and Arabian regions (see map above --- ITF historical mean position for this dekad, --- ITF position for this dekad) (NOAA).
During the first dekad of May, the Front slowly progressed northward compared to the third dekad of April. However, it was closest to its climatology mean position for that time of the year. The mean western portion was located at 13.3N and the mean eastern portion was at around 10.3N lower than the climatology mean due to strong northerlies from the Sahara and Arabia regions (see map) (NOAA).

Light to moderate rainfall was recorded in western and central Sahara in Algeria during the first and second dekads of May. Moderate to good rains were recorded on the Red Sea coast and the interior of Yemen and Saudi Arabia where ecological conditions are favorable. Light to moderate rains were reported on the plateau in Northern Somalia and parts of eastern Ethiopia but vegetation remained dry. The summer breeding areas in the interior of Sudan received light showers but ecological conditions remained unfavorable. Vegetation continued drying out along the Red Sea coasts in Egypt, Sudan and Saudi Arabia as well as in northern Oman (DLCO-EA, FAO-DLIS, PPD/Sudan). Rainfall deficit was reported in the northwest and Centre Malagasy Migratory locust gregarization areas whereas the south received normal to above normal precipitation. However, as a whole the situation remained favorable in most of the areas over the past three dekads except in Ihosy, Ankaraobato, Gogogogo, Beomby and Soalara (FAO-CNA).

Light rains were recorded in spring breeding areas in western Pakistan and southeastern Iran and light to moderate showers fell in the summer breeding areas in Rajasthan, India during the second half of May (DPPQS/India, FAO-DLIS). The temperature increased in all CAC countries and dry spells persisted in southern Central Asia.

**Note:** Changes in the weather patterns and the shift in the ecology of landscape are believed to exacerbate the risk of pest outbreaks and resurgence. Regular monitoring and reporting are essential. **End note.**

**Detailed accounts of ETOP situation, activities and ecological conditions are presented below.**

**SGR - Western Outbreak Region:** The SGR infestation declined in the Western outbreak region and ground operations treated small groups of hoppers and adults in 5,544 ha in northwest Mauritania in May. The situation remained calm in adjacent areas in the southern Morocco where groups of adults appeared further north and laid eggs and control operations treated 542 ha during this period. Small hopper bands and groups as well as adults were detected near irrigated areas in the central Sahara in Algeria and controlled on 275 ha. No surveys were carried out in Mali, Niger,
Senegal, Tunisia, and Chad and no locusts were reported during this month. In Libya surveys are being undermined by the ongoing situation in the country (CNLA/Mauritania, CNLAA/Morocco, FAO-DLIS and INPV/Algeria).

Note: In accordance with the recommendations of the sixth EMPRES committee meeting that was held in Libya from 19-20 December, 2010, and to develop alternatives to chemical control, INPV/Algeria conducted a field trial on the efficacy of a Metarhizium anisopliae var acridum (a fungal-based biopesticide (GreenMuscle) against DMA. The trial was carried out in May in Sidi Bel Abbés wilala. Analysis of the results and the final reports of the findings are under way. End Note.

Forecast: Scattered adults will appear in the summer breeding areas in northern Sahel in Mauritania, Mali, Niger and Chad in June (CNLA/Mauritania, CNLAA/Morocco, FAO-DLIS and INPV/Algeria).

SGR - Central Outbreak Region: SGR persisted along the central Red Sea coast in Saudi Arabia where ground and aerial operations treated nearly 25,000 ha during May (nearly twice that number was treated in April). On May 39th, several immature adult SGR were observed on the streets of Asmara. The SGR situation improved along the Red Sea coast of Egypt where only 65 ha were treated during this period. No locusts were detected during ground surveys carried out by PPDs in spring breeding areas in the Somali Administrative Region in eastern Ethiopia and in Sudan in May (DLCO-EA, FAO-DLIS, PPD/Ethiopia, and PPD/Sudan).

Forecast: The ongoing operations on the central coast of Saudi Arabia will likely put the infestations under control. Nevertheless, escapee adults will form small groups and swarms and reach the interior of Yemen east of Sana’a from Marib and Al-Jawf to Sayun and Thamud in the Shabwa and Hadhramaut regions. Should good rains fall during the forecast period, breeding will commence and locust numbers will increase in these areas.

Adults and groups of swarms from the coast of Saudi Arabia are likely to appear along the Nile and Atbara Rivers between Khartoum and Dongola as well as in White Nile, North Kordofan and North Darfur and some locusts may also appear and breed in western lowlands in Eritrea during forecast period. The movements of locusts from Saudi Arabia should diminish from July onwards. No locusts are expected in eastern Ethiopia and a few isolated adults may appear in areas of recent rainfall on the escarpments between Hargeisa and Berbera, but significant developments are not likely during the forecast period. Other countries in the region will likely remain calm during this time. Mindful of the ongoing situation in Yemen.
undermining survey and control operations, every effort should be made to launch preventive interventions in the interior of the country during the forecast period to reduce the risk of large-scale developments and invasions that could threaten the Region as a whole (AELGA, DLCO-EA, FAO-DLIS, DLMCC/Yemen, and PPD/Ethiopia).

**SGR - Eastern Outbreak Region:** Small-scale breeding occurred in spring breeding areas in Baluchistan western Pakistan and in southeastern Iran where locust numbers increased and formed small groups. Control operations treated 6,700 ha in Iran and nearly 6,000 ha in Pakistan during this period. No locusts were reported in the scheduled desert regions in India or other countries in the region (DPPQS/India, FAO-DLIS).

**Forecast:** Locust numbers will increase slightly in the spring breeding areas in western Pakistan, but decline during the forecast period as some adults begin moving to the summer breeding areas along the Indo-Pakistan border (DPPQS/India, FAO-DLIS).

**Red (Nomadic) Locust (NSE):** NSE update was not received at the time this report was compiled.

**Forecast:** Locust populations will likely subside and IRLCO-CSA will undertake survey and control operations during the months of June/July as necessary (IRLCO-CSA).

**Madagascar Migratory Locust (LMC):** LMC situation subsided in the southwestern outbreak areas in May. Swarms continued moving northeast and west and adults and fledglings reached the central and southeast regions during this period. Late instar bands and immature adults were scattered over 15-20,000 ha in the vicinity of Iaborano and dense swarms were reported in Beraketa-Isoanala-Ianabinda region, east of south Horombe. Swarms were detected in Marerano in the northwest zone, on Belomotra plateau passing through the Sakondry basin and copulating and other adults were observed scattered over 20,000 ha in the surroundings of Manambien between Tsivory and Tranomaro in the south and southeast. Swarms were also seen flying out of the Karimbola plateau and the coastal lowland savanna in Androy the northwest and in Ankazoabo plateau between Tandrano and Mani during the first dekad of the month.

Control operations were carried out against swarms and hoppers on more than 22,500 ha during this month. As of the end of May, 2011, close to 205,306 ha have been protected or controlled with conventional pesticides (Chlorpyrifos), an insect growth regulator (Nomolt) and a biopesticide (GreenMuscle). 640 empty 200-liter pesticide barrels have been recovered and retained in Toliara (Tuléar) and the Zonal locust operation base since the current campaign began on November 28, 2010 for future disposal. The two helicopters that began operations on October 13, 2010 have logged 744 hours and 38 minutes as of end of May.

Environmental assessment of spray operations in areas treated with Chlorpyrifos in concluded that no intoxication of humans or domestic animals was reported and some beneficial insects, such as ants, and beetles showed some impacts, including slow re-colonization and Tenebrionidae and Carabidae beetles showed a 23.5 to 40% decrease in Mahafaly. Beehives were not present in the sprayed areas and impact data was not available on honeybee and no adverse impact was observed on vertebrates (FAO-CNA).

**Forecast:** The dispersal of swarms will continue east and northwards, particularly east, north east and northwest in the coming months. The situation will remain calm in the southwest
where conditions have for the most part, become unfavorable (FAO-CNA).

Note: The UN/FAO and the Malagasy Center for Locust Control are spearheading the current locust control campaign in the country. The United States Agency for International through its Office of Foreign Disaster Assistance (OFDA) responded in time and favorably to the appeal issued in support of the locust emergency campaign operations. Other donors have pledged and/or made contributions and it is anticipated that this will likely continue. End note.

CNA and partners must remain vigilant and continue monitoring and reporting of areas where egg laying has occurred and locust developments have been detected or will be likely must be reported and responded to as rapidly as possible.

OFDA/TAG will continue monitoring the situation in close collaboration with FAO, CNA and other partners and issue updates and provide advice as often as necessary.

Moroccan (DMA), Italian (CIT) and Migratory (LMI) in Central Asia and the Caucasus (CAC): The DMA situation intensified from early April on in Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan and to some extent Turkmenistan where hoppers have been treated on more than 607,000 ha in April through mid-May. Natural vegetation was already dry in southern Central Asian countries, and hoppers and adults were concentrating in vegetation that remained green. DMA and CIT activities will likely continue in the coming months. Other countries in CAC will likely remain relatively calm during the forecast period. Other countries in CAC will likely remain relatively calm during the forecast period. Routine surveillance and monitoring are essential (AELGA).

Australian Plague Locust (APL): No update was received at the time this report was compiled, but most of the eggs that were laid during April and in previous month will remain dormant and until hatching begins sometime in October (AELGA, APLC).

Timor and South Pacific: No update was received in May in Timor, but it is likely that migratory locusts may have been posing a threat to crops and pasture in the past months. The situation will likely further develop during the forecast period. It is important that a proactive stance is maintained to avoid significant damage to crops and pasture (AELGA).

African Armyworm (AAW): AAW outbreaks were reported in Harari Region, Dire Dawa Administrative council, Oromiya Region and Somali Region in eastern Ethiopia where early
instar caterpillars were detected during the 4th week of May. Control operations were organized by the regional Agricultural Bureaus (DLCO-EA).

(a farmer standing in the middle of his maize field in Korongwe, Tanzania and gazing in disbelief at what AAW larvae have done to his crop; photo, courtesy Wilfred Mushobozi, April, 2011)

**Forecast:** AAW outbreaks will likely continue in eastern, central and northern Ethiopia and perhaps southern Eritrea during the forecast period. Some minor AAW populations will likely be noticed in the central, eastern and northern Rift Valley in Kenya. Trap operators should remain vigilant and share information with concerned bodies for timely interventions (AELGA, DLCO-EA).

**Quelea (QQU):** QQU outbreaks were reported in Dodoma Shinyanga, Musoma & Morogoro Regions in Tanzania. A DLCO-EA aircraft controlled 10 roosts and 8 colonies using 2,300 l of avicide on an area measuring 1,160 ha. The birds were seen roosting on *Acacia trees*, *Typha* grasses and Reeds. Control operations saved rice, finger millet, bulrush and sorghum. The spray aircraft logged 17 hours spraying and 15 hours for survey and logistics, 32 hours in total. Operations were in progress in Morogoro and Mbeya regions at the time this report was compiled. No reports were received in Kenya and no QQU were reported in Ethiopia (DLCO-EA) during this period.

(A QQU roost, a file photo; free encyclopedia)

**Facts: QQU** birds can travel ~100 km/day looking for food. An adult QQU bird can consume 3-5 g of grain and perhaps destroy the same amount each day. A colony composed of a million birds (very common) is capable of consuming and destroying 7-10 tons of seeds/day (enough to feed 15,000-20,000 people for a day).

**Rodents:** No rodent outbreak or infestation was reported during this month, but the pest remains a constant threat to both pre- and post-harvest crops and produces in many countries around the globe.

Several raptor birds such as barn owl, Tyto alba and other animals are known nature’s biological control agents that contribute to maintaining the balance between outbreaks and a period of lull.

Front-line countries are advised to remain vigilant. Countries in the invasion zones should maintain the capacity to avoid any unexpected surprises. DLCO-EA, IRLCO-CSA, national PPDs, CNLAs, DPVs, ELOs and others are encouraged to continue sharing information with partners and other stakeholders as often as possible.
Inventories of Acridid Pesticide Stocks

A cumulative total of some 61,000 l of pesticides were used in May, mainly in Saudi Arabia, Madagascar, Iran, Pakistan, Mauritania and to a lesser extent in Morocco, Algeria and Egypt.

Mindful of the phenomenon that pesticides become obsolete once past their shelf-lives, ETOP-prone countries, particularly those with large stocks, but are less likely to use them within a reasonable time, are encouraged to test their inventories regularly and determine whether they should use, retain, share or discard them immediately. All options should be explored to avoid severe human health impacts as well as huge environmental and financial burdens associated with handling and disposing of large stocks of obsolete pesticides.

A judiciously executed triangulation of stocks from countries with large inventory to where the need exists is a double-edged alternative that is worth considering.

Note: The core message of pesticide stewardship [networking] is to strengthen the national and regional pesticide delivery systems by linking partners at different levels and thereby reduce pesticide related health risks, avoid environmental pollution and improve food security as well as ultimately contribute to the national economy. End note.

Estimated [acridid] pesticide inventories as of April, 2011

<table>
<thead>
<tr>
<th>Country</th>
<th>Quantities in ‘000l/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>1,800~</td>
</tr>
<tr>
<td>Chad</td>
<td>108.09~</td>
</tr>
<tr>
<td>Eritrea</td>
<td>43.90~</td>
</tr>
<tr>
<td>Egypt</td>
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</tr>
<tr>
<td>Ethiopia</td>
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<tr>
<td>Libya</td>
<td>Data not available</td>
</tr>
<tr>
<td>Madagascar</td>
<td>1.6c + 0.00g + 1.10b</td>
</tr>
<tr>
<td>Mali</td>
<td>209d~</td>
</tr>
<tr>
<td>Mauritania</td>
<td>435.3~</td>
</tr>
<tr>
<td>Morocco</td>
<td>4,101~</td>
</tr>
<tr>
<td>Niger</td>
<td>28.24+</td>
</tr>
<tr>
<td>Senegal</td>
<td>519~</td>
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<tr>
<td>Saudi Arabia</td>
<td>Date not available</td>
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<tr>
<td>Sudan</td>
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</tr>
<tr>
<td>Tunisia</td>
<td>167.60~</td>
</tr>
<tr>
<td>Yemen</td>
<td>33.00 + .527 kg GM</td>
</tr>
</tbody>
</table>

These quantities include ULV, EC and dust formulations

~ data not necessarily current

l = Mali donated 21,000 l for RL in Malawi, Mozambique and Tanzania late last year and FAO facilitated the triangulation + quantity reported in Agadez

@ left-over stocks of Chlopyrifos from the 2003-5 DL campaign was tested for quality and found to be usable through 2012

This includes EC, ULV and Dust for all crop protection uses

GM = GreenMuscle

b = biopesticide (Madagascar)

c = conventional pesticides (Madagascar)

g = insect growth regulator (Madagascar)

LIST OF ACRONYMS

AAW African armyworm (Spodoptera exempta - SEX)

AELGA Assistance for Emergency Locust Grasshopper Abatement

AME Anacridium melanorhodon

APL Australian Plague Locust

APLC Australian Plague Locust Commission

CAC Central Asia and the Caucasus

CERF Central Emergency Response Fund

CIT Calliptamus italicus

CLCPRO Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)
To learn more about our activities and the programs we support, please, visit our website at:
http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/locust/

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