

**Emergency Transboundary Outbreak
Pest (ETOP) Situation Report for
December 2013 with a Forecast till
mid-February, 2014**

Summary

The Desert Locust (SGR¹) situation continued developing in **Eritrea, Saudi Arabia, Yemen** and **Sudan**, in December. Aerial and ground operations treated close to 80,000 ha during this month.

In **Eritrea**, 38,000 ha were treated by air and ground means. In **Yemen**, ground operations treated hoppers, adult groups and swarms on more than 24,099 ha during this period. In **Sudan**, ground and aerial operations controlled locusts on some 5,900 ha on the southern coast between Tokar Delta and the **Eritrea** border and the sub-coastal areas of the northeast and **Saudi Arabia** controlled mature and immature locusts on 10,990 ha during this month. Solitary hoppers and adult locusts were reported in northeastern **Somalia** where unusually heavy tropical cyclonic rains occurred in November.

In **Mauritania**, aggressive control interventions (50,555 ha treated since October 5th) coupled with unfavorable ecological conditions reduced locust outbreaks. Hopper groups and adults were detected in the Tenere Desert and solitary adults persisted in Tamesna in **Niger** and solitary maturing adults were reported in southern **Morocco**. The

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

situation in northern **Mali** remained unclear due to absence of surveys. No locusts were reported in other countries in Sahel West Africa, North Africa, and the Red Sea region, the Horn or East Africa and Southwest Asia during this period.

Forecast: Should ecological conditions remain favorable along the Red Sea coasts and Gulf of Aden (a likely scenario), second generation breeding that commenced during this month will continue and locust numbers will increase during the forecast period. Other outbreak areas are not expected to experience significant developments in the coming months (CNLA/Chad, CNLA/Mauritania, DLCO-EA², DLMCC/Yemen, DGPCAPQ/Tunisia, DPPQS/India, FAO-DLIS, INPV/Algeria, LCC/Oman, PPD/Sudan).

Vigilance, active surveillance and preventive interventions remain critical to avoid a repeat of the 2007 locust invasions that started in the Arabian Peninsula and crossed the Red Sea and invade the Horn and Eastern Africa.

OTHER ETOPS

Red (Nomadic) Locust (NSE): NSE swarms were reported in Lake Chilwa Plains in **Malawi** during the last week of December. A similar situation may have occurred in the neighboring Lake Chiuta Plains. Hatching and hopper formations are expected to have commenced in

² DLCO-EA member-countries = Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, South Sudan, Tanzania, Uganda,

Tanzania and Mozambique during this period (IRLCO-CSA, OFDA/AELGA).

Forecast: NSE will remain active in **Tanzania, Malawi, Mozambique** and **Zambia** during the forecast period. If left uncontrolled, swarms from successful breeding in the NSE outbreak areas will pose a threat to crops and pasture.

IRLCO-CSA has alerted its member-states and impressed up on partners to provide resources to conduct urgent survey and control operations and avoid potentially threatening outbreaks and invasions (IRLCO-CSA³, OFDA/AELGA).

Madagascar Migratory Locust (LMC): Locust activities continued during December and hoppers and adults were reported and controlled on close to 20,000 ha in several areas in invasion and multiplication zones (DPV-FAO).

Forecast: Mating and egg-laying will progress and hoppers will form groups and bands in several places in the coming dekads. *Vigilance, aggressive surveillance, and preventive interventions remain imperative to avert any major crop damage in the coming months* (DPV-FAO, OFDA/AELGA).

Moroccan (DMA), Italian (CIT), Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): No locust activities were reported in CAC in December (OFDA/AELGA).

³ IRLCO-CSA member-countries = Botswana, Kenya, Malawi, Mozambique, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe

Forecast: Locust activities are not expected in the CAC region until sometime in March (FAO-ECLO, OFDA/AELGA).

Tree locusts: Control operations continued against tree locusts in Turkana County in Kenya where 90,000 ha were reported affected. The Ministry of Agriculture and Livestock in collaboration with the Desert Locust Control Organization for Eastern Africa (DLCO-EA) treated 3,500 ha using DLCO's spray aircraft. Survey and control operations were financed by the UN/Food and Agriculture Organization (FAO). Control operations were in progress at the time this report was compiled (DLCO-EA, IRLCO-CSA).

African Armyworm (AAW): AAW outbreaks were reported in crops and pasture in **Malawi** and **Zambia** in December. In **Malawi**, the pest was controlled by the affected farmers with technical and material assistance from the Ministries of Agriculture. AAW outbreaks were also reported in south-eastern **Tanzania** during December (IRLCO-CSA, OFDA/AELGA PHS/Tanzania).

Forecast: AAW outbreaks will likely continue in **Malawi, Zambia**, and **Tanzania** and also begin appearing in **Zimbabwe** during the forecast period. Trap operators are advised to monitor the situation aggressively and report on time any activities to concerned authorities to allow timely launching of control interventions (DLCO-EA, IRLCO-CSA, OFDA/AELGA, PHS/Tanzania).

Quelea (QU): Quelea birds were reported causing damage to small grain

cereal in Siaya County in Kenya (DLCO-EA, IRLCO-CSA).

Forecast: QU birds will be a problem to irrigated rice crops in **Kenya** and **Tanzania** during the forecast period. Active monitoring and timely interventions are critical to avert any major crop damage during the forecast period (DLCO-EA, IRLCO-CSA).

OFDA/TAG, through its Pest and Pesticide Monitoring, Reporting and Response unit (=Assistance for Emergency Pest [Locust/Grasshopper] Abatement) will continue monitoring ETOP situations closely in all regions and issue dekadal alerts and monthly updates as well as provide advices as often as necessary. **End summary**

Progresses made 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 all SGR activities.

Funds provided by the African Development Bank, USAID, the World Bank, France, FAO, host-governments as well as assistance from neighboring countries enabled FCs to equip CNLAs and build infrastructure as well as help train staff to prevent and respond to SGR outbreaks. With the support they get from external sources and with their own resources, FCs were able to minimize and avoid the threats the SGR poses to food security and livelihoods of vulnerable communities.

*CNLAs' continued efforts to prevent, mitigate, avert and/or respond to potentially devastating SGR outbreaks and invasions are good examples of **sustainable disaster risk reduction** that deserve encouragements and support.*

OFDA ETOP Activities and Impacts

- OFDA's support and contributions from other donors enabled FAO to establish Pesticide Stock Management System (PSMS) in 50 countries around the globe. As a result, participating countries can now conduct regular inventories and make informed decisions to prevent unnecessary accumulations of obsolete stocks, avoid costly disposal operations, ensure safety of their citizens and protect their shared environment.
- OFDA-sponsored, three year program on scaling up community-based armyworm monitoring, forecasting and early warning which was launched in FY 2013 is progressing well. The program aims at reducing the risk of armyworm threats to food security and livelihoods of rural communities and vulnerable populations. Activities are being coordinated by the DLCO-EA in collaboration with partners in Ethiopia, Kenya and Tanzania. Among partners' latest achievement is successful launching of a mobile based information collection and transmission by local farmers.
- OFDA continues its assistance to sustainable pesticide risk reduction initiatives through stewardship network

(SPRRSN) programs by strengthening capacities of host-countries and partners to ensure safety of vulnerable populations and protect their assets and the shared environment against pesticide contamination. OFDA/TAG has successfully launched two sub-regional SPRRSNs in Eastern Africa and the Horn. The Horn of Africa SPRRSN initiative has created a "model" Association dubbed as Pesticide Stewardship Association-Ethiopia (PSA-E) which is viewed as a boiler plate for future initiatives.

- OFDA is considering expansion of the SPRRSN initiatives in North Africa, West Africa, the Middle East, CAC and other regions.
- OFDA continued its assistance for capacity strengthening as part of its DRR programs through a cooperative agreement with FAO to mitigate, prevent, and respond to and reduce the risk of ETOP emergencies and avoid misuse and mishandling of pesticides, pesticide-incorporated materials and application platforms in the western, central and eastern regions.
- OFDA supported DRR program aimed at strengthening national and regional capacities for ETOP operations in Central Asia and the Caucasus (CAC) is in progress. The program focuses on improving national and regional capacities to better coordinate locust monitoring and reporting as well as joint plans for survey and prevention to minimize the threats they pose to food security and livelihoods of vulnerable populations.

Note: All ETOP SITREPs, including the current one can be accessed on our websites:

<http://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>

Detailed accounts of the weather, ETOP situation and forecast for the next six weeks are discussed below.

Weather and ecological conditions

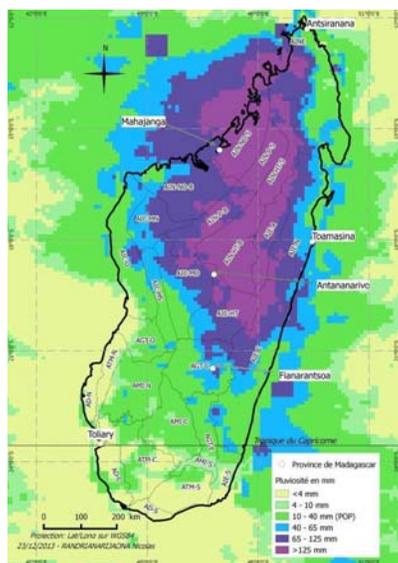
Moderate rainfall was reported on December 24th on coastal plain in the Gulf of Aden **Yemen**. Earlier in the month, moderate to good rains were reported in the Red Sea coast and allowing locusts to further develop.

In **Mauritania**, cloudy skies with light precipitation dominated much of Trarza Region in Nouakchott-Inchiri, southern Dakhlet-Nouadhibou and Tiris-Zemmour. Light rain fell in Bir Moghreïn (10 mm) in Tiris Zemmour on December 6 making ecological conditions favorable in localized areas for locusts to survive and reproduce (CNLA/Mauritania). In **Chad, Morocco**, ecological conditions remained unfavorable to sustain locust breeding.

Rainfall continued in the **NSE** outbreak areas in **Tanzania** and **Mozambique** during December. In **Tanzania**, good rainfall was recorded in several places: 405 mm in Kaliua in Malagarasi Basin, 225 mm in Mpanda (Ikuu-Katavi Plains), 170 mm in Muze (Lake Rukwa Plains) and 167.5 mm in Masenge (Wembere Plain). **Mozambique** recorded good rainfall in the following areas: 120 mm in Caia (Dimba plains), 113 in Mafambisse (Buzi-Gorongosa Plains), 98 mm in Buzi and 78 mm in Nhamatanda (Buzi-Gorongosa Plains). Weather data for Malawi was not available at the time this report was

compiled. However, moderate to heavy rainfall is expected to have continued in Kafue Flats and Lake Chilwa/Chiuta plains in **Malawi** during December (IRLCO-CSA).

In **Madagascar**, LMC-optimum to heavy rain was recorded in the invasion, multiplication and Gregarization areas during the first two dekads of December (Map, DPV-FAO, Jan. 2014) causing vegetation coverage to increase to 80% to 100% with height range



of 10 to 35 cm (higher numbers represent invasion areas where heavy rains were recorded). In the Gregarization areas, vegetation (grass) coverage was higher than 90% and grass height was 10 to 30 cm with a recovery rate of 70 to 85%. Shrubs, bushes

and woody vegetation showed a higher greening rate of 90%. Rainfall was low in the northern transient and condensation zone leaving much of the grassy areas dry with below 10% vegetation coverage and grass height of between 10 and 15 cm. The west coast received less than 4 mm of rainfall during the first dekad of December. The prevailing wind trajectory was northwest to the southeast (DPV-FAO).

Light rains fell in eastern **Iran/Western Pakistan**. SGR areas in India remained dry during this period (DPPQS/India, FAO-DLIS).

In **Central Asia and Caucasus (CAC)**, rainfall has ended and the temperature has dropped and vegetation is dry (FAO-ECLO).

Note: Changes in the weather patterns contribute to ecological shift in ETOP habitats and can increase the risk of pest outbreaks and resurgence as well as emergence of new pests. Regular monitoring and reporting of anomalous manifestations in habitats and pest situation remain essential. **End note.**

DETAILED ACCOUNTS OF ETOP SITUATION AND FORECASTS FOR THE NEXT SIX WEEKS

SGR - Western Outbreak Region: The SGR situation improved in Sahel West and northwest Africa towards the end of December. In **Mauritania**, aggressive control interventions and drying up of vegetation reduced locust populations (**Mauritania** treated more than 50,555 ha since the current campaign began on October 5th - 14,712 in December - 10,233 ha in the 1st dekad, 3,946 ha in the 2nd dekad and 533 in the 3rd dekad, showing a trend in drastic reduction).



(SGR situation in November, FAO-DLIS, Jan/2014)

Hopper groups and adults were detected in the Tenere Desert and solitary adults persisted in Tamesna in **Niger**. The situation in northern **Mali** remained unclear due to the absence of surveys. Few solitary maturing adults were reported in southern **Morocco**. No locusts were reported in other countries in Sahel West Africa and North Africa during this period.

(**Note: Mauritania** is one of the counties in Sahel West Africa that have benefited a great deal from supports provided by USAID/OFDA and other donors and the FAO to strengthen

its capacity for the prevention and control of locust invasions. Hence, it was able to avert a potentially serious locust upsurge very similar to the 2003-05 upsurges that began in the same region). **End note.**

SGR (Desert Locust) - Central Outbreak

Region: SRG continued developing in **Sudan, Yemen, Eritrea** and **Saudi Arabia** where aerial/ground control operations were in progress in December. In **Sudan**, hoppers, bands and adults were controlled on some 5,900 ha during December. In **Eritrea**, aerial and ground operations treated hoppers and adults on some 38,000 ha (16,200 ha in November) near cropping areas along the Red Sea coast. Isolated adult locusts were detected in Ayisha in eastern **Ethiopia** and groups of copulating and egg-laying adults and solitary hoppers were reported in the winter breeding area on the northeastern coast in **Somalia**, where a heavy cyclonic rain was reported in November (DLCO-EA, FAO-DLIS, PPD/Sudan).

In **Yemen** fledging continued in December and groups of immature and mature adults and swarms were reported on December 22 in several places, i.e., 15 swarms in Haggah, 12 swarms in Sada'a Governorate, 3 swarms in north west of Sada'a and one copulating swarm between Alzuhra and Abbs. Two immature swarms were also reported in Alqabitah and almsemair on the Gulf of Aden area. Ground control operations continued in the northern and central parts of Tihama and treated hopper bands and adult groups in several places between Al Zuhrah and Midi on a total of 24,990 ha during this month (15,989 ha were treated in November). A few immature swarms were seen in the foothills near the **Saudi Arabia** border and Sada'a, and northwest of Aden (DLMCC/Yemen). In **Saudi Arabia**, hopper and adult locusts were controlled on 10,990 ha in Lith and Jizan during this month. Second generation breeding and

egg-laying are in progress in **Yemen, Saudi Arabia** and **Eritrea**. No locusts were reported in Djibouti, Oman or other countries in the region during this period (DLMCC/Yemen, FAO-DLIS, LCC/Oman, PPD/Sudan).

Forecast: Adult groups and swarms will continue appearing in several areas in Tihama, Red Sea coastal plains and Gulf of Aden in **Yemen** where ecological condition favor locusts to persist and breed. Breeding will also continue along the Red Sea coasts in **Eritrea, Sudan and Saudi Arabia**. Locust numbers will increase in some of these places during the forecast period. **Somalia** may experience breeding in the northeast coast where unusually good rains fell during November. In eastern **Ethiopia**, adult locusts will likely persist, but not expected to develop further during the forecast period. Other countries in the region will remain calm, however, neighboring countries in the region should be on the lookout as locusts may arrive from **Yemen, Sudan** or **Eritrea** during the forecast period (DLMCC/Yemen, DLCO-EA, FAO-DLIS, PPD/Oman, PPD/Sudan).

SGR - Eastern Outbreak Region: No locusts were reported in southeastern **Iran** or southeastern **Pakistan** and no locusts were reported in Rajasthan and Gujarat **India** during this period (DPPOS/India, FAO-DLIS).

Forecast: A few isolated adults may appear along the southeastern **Iran**-southwestern **Pakistan** regions during the forecast period, but significant developments are not likely (DPPOS/India, FAO-DLIS)

Red (Nomadic) Locust (NSE): Several NSE swarms were reported flying from Lake Chilwa Plain towards Chikala Hills in **Malawi** during the last week of December. A similar situation may have been taking place in the neighboring Lake Chiuta Plains. Successful breeding may have occurred in Ikuu-Katavi plains, Wembere plains and Malagarasi Basin

in **Tanzania** where significant parental populations persisted. No locusts were reported in other countries in the region during December, but some activities may have commenced in **Mozambique** in areas neighboring **Malawi** (IRLCO-CSA).

Forecast: Extensive hatching will form large hopper bands in the outbreak areas in Ikuu-Katavi, Wembere plains and Malagarasi Basin in **Tanzania**; in Buzi-Gorongosa and Dimba plains in **Mozambique** and in Lake Chilwa/Lake Chiuta plains in **Malawi** where swarms have already formed and began threatening crops and pasture. Successful breeding in the Dimba plains (**Mozambique**) and Kafue Flats (**Zambia**) will result in increased appearance of hopper bands and adult populations.

If left uncontrolled, the locusts will continue threatening crops and pasture in the outbreak and invasion areas in **Malawi**, **Mozambique** and **Tanzania** in the coming months. Timely and coordinated survey and control operations are critical to avert severe crop and pasture damage and affect food security (IRLCO-CSA, OFDA/AELGA).

IRLCO-CSA member-states are encouraged to avail resources for the designated organization - IRLCO-CSA - to launch survey, monitoring and coordinated and timely control operations to avert any serious danger the pest could cause to crops and pasture and even food security down the line.

Madagascar Migratory Locust (LMC) and Red (Nomadic) Locust (NSE):

Locust activities continued during December and hoppers and immature and mature adults were reported in several places in the invasion. Immature adults were seen in search of suitable breeding areas where good rains were recorded in invasion areas in the Central West and Central and North the

outbreak areas. Late instar hoppers and immature adults were also observed in the invasion, multiplication, densation, and Gregarization areas. High density adult infestations were reported in some places, e.g., 20,000/ha in Mihavatsy in the transitional multiplication areas. The operational Base teams in Ihosy and Tsiroanomandidy reported total areas infested since the beginning of November 2013 at 26,956 ha in the outbreak areas and 66,650 ha in invasion areas. Insecurity situation in the southern Gregarization zone prevented survey operations during this period and no information was available for this area at the time this report was compiled (DPV-FAO).

Survey and control: Large areas were surveyed and treated during this period and as of December 20th, a cumulative total of 68,264 ha were reported treated (49,364 ha) and/or protected (18,900 ha) by air and ground means. Operations in the Ihosy base treated/protected 26,764 ha and the Tsiroanomandidy team controlled/protected 41,500 ha as of December 20th. FAO helicopters have covered 297 hours in survey and control operations through the second dekad of December (DPV-FAO).

Pesticides inventory: As of December 20th, pesticide inventory was reported at 203,327 l/kg (360 kg of *GreenMuscle*, 62,117 l Chlorpyrifos and 140,850 l Teflubenzuron 50 UL) and additional 436,640 l/kg (640 kg is biopesticide) are expected to arrive in the country in the next months (DPV-FAO).

Forecast: Good rains that fell during this month and favorable breeding conditions created as a result will allow further breeding and locust numbers to increase in the invasion, sensation, multiplication and

Gregarization areas during the forecast period. *Vigilance, aggressive surveillance, monitoring and preventive interventions remain imperative to avert any major crop damage in the coming months the road.*

The latest locust information from FAO-DPV/Madagascar is available on:

<http://www.fao.org/emergencies/results/en/?keywords=Madagascar%20locust%20crisis>

Moroccan (DMA), Italian (CIT), Migratory (LMI) Locusts in Central Asia and the Caucasus (CAC): No locusts were reported in CAC during this period (OFDA/AELGA).



(Locust prone CAC countries, FAO)

Forecast: Locust activities are not expected in CAC up until March (FAO-ECLO, OFDA/AELGA).

Tree locusts: Survey, monitoring and control operations continued against tree locusts in **Turkana County in Kenya** where 90,000 ha were reported affected up until December. Control operations were launched by the Ministry of Agriculture and Livestock in collaboration with the DLCO-EA and treated 3,500 ha with Fenitrothion 96% in December. DLCO-EA's spray aircraft was used for the spray operations and financial assistance was provided by the UN/FAO). Control operations

were in progress at the time this report was compiled (DLCO-EA, IRLCO-CSA).

Timor and South Pacific: No update was received in E. Timor in December, but some ETOP activities are expected to have occurred in parts of the country (OFDA/AELGA).

African Armyworm (AAW): AAW outbreaks were reported in Machinga, Zomba, Blantyre, Mangochi, Mulanje, Phalombe, Chiladzulu and Balaka, districts in **Malawi** in December. The pest was reported attacked maize and pasture on more than 1,700 ha and caused light to severe damage and 587 households were reported affected by the outbreak. Control operations were carried out by farmers with technical and material assistance (pesticides and sprayers) from the Ministry of Agriculture and Food Security. In **Zambia**, AAW outbreaks were reported on 394 ha in Chipata, Patauke, Katete, and Nyimba districts of Easter Province and affected 291 households during the last week of December. An unconfirmed report of AAW outbreaks in Gwembe district in the Southern Province was received. High numbers of moths were reported in Kilwa, Masasi, and Southern Highlands in Mbeya districts in **Tanzania**. Nine villages in Lindi and Masasi districts in south-eastern **Tanzania** were reported affected by 9-15 December (IRLCO-CSA, PHS/Tanzania).

Forecast: AAW outbreaks will continue in **Malawi, Zambia** and possibly **Mozambique** and **Zimbabwe** as the next wave of moths migrate to neighboring areas. **Tanzania's** southern highlands will also experience outbreaks and central and east-central regions will see AAW activities. Trap operators, including community forecasters are advised to continue monitoring the situation closely and report trap catches to concerned authorities in time to facilitate a timely launch of control operations (DLCO-EA, IRLCO-CSA, OFDA/AELGA).

Quelea (QU): QU bird outbreaks were reported in Siaya County in **Kenya** during December. Plans were underway to launch control operations by the Crop Protection Division of the Ministry of Agriculture and Livestock. QU birds are likely to have commenced breeding in **Mozambique** and **Zimbabwe**. No QU activities were reported in the other IRLCO-CSA and/or DLCO-EA member-countries during this period (DLCO-EA, IRLCO-CSA).

Forecast: QU birds may have started breeding in **Mozambique** and **Zimbabwe** and fledglings and adult are likely to be a problem to small grain cereal growers in these countries. QU will continue being a problem to irrigated rice crops in Siaya, Nyando, Kisumu Kirinyaga counties of **Kenya** and Dodoma, Shinyanga, Morogoro and Mbeya regions of **Tanzania** and Chokwe district of **Mozambique** during the forecast period. Active monitoring and timely interventions are critical to avert any major crop losses during the forecast period (IRLCO-CSA).

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 QQU colony can contain a million birds (very common) and is capable of consuming and destroying 6,000 to 10,000 kg of seeds/day, enough to feed 12,000-20,000 people for a day.*

Rodents: No reports of rodent outbreaks were received during December. However, rodents remain a constant threat to cereal and other crops and produces in many outbreak and invasion areas and require regular surveillance and preventive interventions (OFDA/AELGA).

Front-line countries are advised to remain vigilant. Invasion countries are cautioned to stay on the lookout and monitor to avoid any surprises. DLCO-EA, IRLCO-CSA, national PPDs, CNLAs, DPVs, ELOs, and others are

encouraged to continue sharing with partners and stakeholders the valuable information they obtain from the field through various means as often as possible. Lead farmers and community forecasters are encouraged to remain vigilance and report any ETOP sightings to field agents and other contact persons.

Inventories of National Stocks of Acridid Pesticides

Pesticide inventory changed during this period in a few countries where control operations were carried out: Mauritania (14,712 ha), Eritrea (38,000 ha), Madagascar (), Sudan (5,900 ha), Yemen (24,099 ha), and Saudi Arabia (10,990 ha). The situation remained unchanged in other countries during this month.

Note: Some of the inventories shown below are not necessarily current, as many countries tend to draw down their inventories for controlling other agricultural pests or report after activities are concluded. **End note.**

Mindful of the risk of pesticides gradually becoming obsolete once passed their usefulness and posing serious health and environmental threats, ETOP-prone countries, particularly those with large inventories, but less likely to use them within a reasonable time period, are encouraged to test their stocks regularly and determine whether they should use, retain, share or safely discard them.

With the support from USAID/OFDA, Japan, the Netherlands and other donors, FAO has been able to install a web-based tracking system – Pesticide Stock Management System (PSMS) - in more than 50 countries around the globe. The System has enabled dozens of countries to identify stocks that require testing, or put to an immediate use, or shared or promptly disposed.

OFDA/AELGA encourages countries to continue exploring options that are proven safe and effective in preventing the risks pesticide stockpiling could pose to vulnerable populations and communities, their shared environment and assets as well as beneficial organisms and to minimize and ultimately avoid financial burdens associated with disposal of obsolete pesticide stocks. It promotes IPM at all times. A judiciously executed triangulation of usable stocks from countries with large inventories to where they are much needed is a win-win situation worth considering.

Note: Morocco donated 200,000 l of pesticides to Madagascar to support the ongoing locust campaign. Other countries, including Mauritania, Algeria and Senegal pledged large quantities of pesticides to Madagascar. This is a good example of a solidarity that heralds a win-win situation where by donating countries are not only assisting the receiving country, but also avoiding a potential threat that could otherwise cost millions of dollars in disposing large pesticide stocks once they become obsolete and unsafe to use.

Note: *The core message of sustainable Pesticide Stewardship Program is to strengthen the national and regional pesticide delivery systems by linking partners at different levels to help reduce pesticide related health risks as well as minimize and prevent environmental pollution, and thereby improve food security and ultimately contribute to the national and regional economy. **End note.***

Estimated quantities of pesticides available for ETOP operations in frontline countries as of November, 2013

Country	Quantities l/kg [§]
Algeria	1,190,000~ ^D
Chad	43,400
Eritrea	-4,400~
Egypt	Data not available

Ethiopia	1,600~
Libya	25,000
Madagascar	128,610
Mali	32,000 ^D
Mauritania	48,688 ^D
Morocco	3,757,000~ ^D
Niger	42,805~
Oman	20,000
Senegal	156,000~ ^D
Saudi Arabia	Data not available
Sudan	809,640~
Tunisia	36,575~
Yemen	2,301 + 527 kg GM~

[§]Include different kinds of pesticides in ULV, EC and dust formulations
~ data not current
^D = Morocco, Senegal, Mauritania and Algeria donated/pledged 200,000, 25,000 l, 30,000 l, and 30,000 l of pesticides to Madagascar in 2013; Mali donated 21,000 l for NSE in Malawi, Mozambique and Tanzania in 2012 and FAO facilitated the triangulation process and received 32,000 l from Morocco; Mauritania donated 25,000 and 30,000 l of pesticides to Libya in 2012 and Madagascar 2013
GM = *GreenMuscle*TM (fungal-based biological pesticide)

LIST OF ACRONYMS

AAW	African armyworm (<i>Spodoptera expempta</i> - SEX)
AELGA	Assistance for Emergency Locust Grasshopper Abatement
AFCS	Armyworm Forecasting and Control Services, Tanzania
AfDB	African Development Bank
AME	<i>Anacridium melanorhodon</i>
APLC	Australian Plague Locust Commission
APLC	Australian Plague Locust Commission
CAC	Central Asia and the Caucasus

<i>CBAMFEW</i>	<i>Community-based armyworm monitoring, forecasting and early warning</i>	<i>IRLCO-CSA</i>	<i>International Red Locust Control Organization for Central and Southern Africa</i>
<i>CERF</i>	<i>Central Emergency Response Fund</i>	<i>ITCZ</i>	<i>Inter-Tropical Convergence Zone</i>
<i>CIT</i>	<i>Calliptamus italicus</i>	<i>ITF</i>	<i>Inter-Tropical Convergence Front = ITCZ)</i>
<i>CLCPRO</i>	<i>Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)</i>	<i>FAO-DLIS</i>	<i>Food and Agriculture Organizations' Desert Locust Information Service</i>
<i>CNLA/CNLAA</i>	<i>Centre National de Lutte Antiacridienne (National Locust Control Center)</i>	<i>Hoppers</i>	<i>young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)</i>
<i>CRC</i>	<i>Commission for Controlling Desert Locust in the Central Region</i>	<i>Hopper bands</i>	<i>groups of hoppers aggregated and marching in unison and pretty much in the same direction</i>
<i>CTE</i>	<i>Chortoicetes terminifera</i>	<i>Kg</i>	<i>Kilogram (~2.2 pound)</i>
<i>DDLC</i>	<i>Department of Desert Locust Control</i>	<i>L</i>	<i>Liter (1.057 quarts or 0.264 gallon or 33.814 US fluid ounces)</i>
<i>DL</i>		<i>LMC</i>	<i>Locusta migratoriacapito</i>
<i>DLCO-EA</i>	<i>Desert Locust Control Organization for Eastern Africa</i>	<i>LMM</i>	<i>Locusta migratoria migratorioides (African Migratory Locust)</i>
<i>DMA</i>	<i>Dociostaurus maroccanus</i>	<i>LPA</i>	<i>Locustana pardalina</i>
<i>DPPQS</i>	<i>Department of Plant Protection and Quarantine Services</i>	<i>MoAFSC</i>	<i>Ministry of Agriculture, Food Security and Cooperatives</i>
<i>DPV</i>	<i>Département Protection des Végétaux (Department of Plant Protection)</i>	<i>MoARD</i>	<i>Ministry of Agriculture and Rural Development</i>
<i>ELO</i>	<i>EMPRES Liaison Officers</i>	<i>NOAA</i>	<i>National Oceanic and Aeronautic Administration</i>
<i>EMPRES</i>	<i>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases</i>	<i>NSD</i>	<i>Republic of North Sudan</i>
<i>ETOP</i>	<i>Emergency Transboundary Outbreak Pest</i>	<i>NSE</i>	<i>Nomadacris septemfasciata</i>
<i>Fledgling</i>	<i>immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully developed reproductive organs and hence cannot breed</i>	<i>OFDA</i>	<i>Office of U.S. Foreign Disaster Assistance</i>
		<i>PHD</i>	<i>Plant Health Directorate</i>
		<i>PHS</i>	<i>Plant Health Services, MoA Tanzania</i>
		<i>PPD</i>	<i>Plant Protection Department</i>
		<i>PPSD</i>	<i>Plant Protection Services Division/Department</i>
<i>GM</i>	<i>Green Muscle (a fungal-based biopesticide)</i>	<i>PRRSN</i>	<i>Pesticide Risk Reduction through Stewardship Network</i>
<i>ha</i>	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>	<i>QQU</i>	<i>Quelea quelea</i>
	<i>Integrated Regional Information Networks</i>	<i>SARCOF</i>	<i>Southern Africa Region Climate Outlook Forum</i>
		<i>SGR</i>	<i>Schistoseca gregaria</i>
		<i>SWAC</i>	<i>South West Asia DL Commission</i>

TAG	<i>Technical Assistance Group</i>
Triangulation (pesticide)	<i>The process whereby pesticides are donated by a country or countries with large inventories, but no immediate need to a country or countries with obvious and desperate needs and a third party takes on the negotiation role and assists with arranging shipments, etc. Usually FAO plays the third party role.</i>
USAID	<i>United States Agency for International Development</i>
UN	<i>the United Nations</i>
ZEL	<i>Zonocerus elegans, the elegant grasshopper</i>
ZVA	<i>Zonocerus variegatus, the variegated grasshopper; this insect is believed to be emerging as a fairly new distractive dry season pest, largely due to the clearing of its natural habitat through deforestation, i.e. land clearing for agricultural and other development efforts.</i>

Who to Contact:

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