

**Emergency Transboundary Outbreak  
Pest (ETOP) Situation Report for  
January with a Forecast till  
Mid-March, 2014**

## Summary

**The Desert Locust (SGR<sup>1</sup>)** situation remained active on the Red Sea coasts in January where breeding continued and hoppers and swarms were reported in several places in **Eritrea, Sudan, Saudi Arabia** and **Yemen** during this month.

Swarms from northern **Eritrea** reached southern **Sudan**, laid eggs in December and hatched by mid-January. Control operations treated more than 51,381 ha in **Eritrea, Sudan, Yemen** and **Saudi Arabia** combined during this month (>177,717 ha since November, 2013). Information on locust swarms from **northwest Somalia** invading **Djibouti** and possibly reaching eastern **Ethiopia** is being investigated. *Note: A preliminary result of a joint rapid impact assessment on locust invasions in Tihama Region in Yemen obtained in January. The report mentioned that farmers sustained considerable crop losses, but cautioned that in depth analyses are required. End note. Active surveillance and preventive interventions remain critical at all times to avoid any major crop/pasture losses.*

Adult groups and swarms were controlled on some 860 ha in **Mauritania, Niger** and **Algeria** during this month. No locusts were reported in the eastern outbreak region and all invasion countries remained calm during this period (CNLA/Chad, CNLA/Mauritania,

<sup>1</sup> Definitions of all acronyms can be found at the end of the report.

CNLA/Morocco, DLCO-EA<sup>2</sup>, DLMCC/Yemen, DGPCAPQ/Tunisia, FAO-DLIS, LCC/Oman, NCLC/Libya, PPD/Sudan).

**Forecast:** More hoppers and swarms will likely appear in **Eritrea** and **Yemen** and to some extent in **Saudi Arabia** and **Sudan** during the forecast period. Groups and swarms from the Red Sea coast will likely move to the interior **Saudi Arabia** and breed. More locusts from northwest **Somalia** may reach **Djibouti**. A few adult locusts/swarms may appear in **eastern Ethiopia** and eastern **Somalia**, but major activities are not expected during the forecast period. A few adult locusts will appear in **Oman** and start breeding in areas of recent rainfall. **Mauritania**, southwest **Morocco**, southwest **Algeria**, and southern **Libya** will likely experience small-scale breeding at the onset of favorable spring weather. A few adult locusts will appear in southeast **Iran** and south western **Pakistan** and likely breed, but significant activities are not expected during the forecast period (CNLA/Chad, CNLA/Mauritania, CNLA/Morocco, CRC, DLCO-EA<sup>3</sup>, DLMCC/Yemen, DGPCAPQ/Tunisia, DPPOS/India, FAO-DLIS, INPV/Algeria, LCC/Oman, NCLC/Libya, PPD/Sudan).

## OTHER ETOPS

**Red (Nomadic) Locust (NSE):** NSE remained active and hatching is expected to have commenced in areas which received

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

<sup>3</sup> DLCO-EA member-countries = Djibouti, Eritrea, Ethiopia, Kenya, Somalia, Sudan, South Sudan, Tanzania, Uganda,

early rains in most of the outbreak countries. Adult swarms that were reported in Lake Chiuta plains in **Malawi** during December likely laid eggs and perished (IRLCO-CSA).

**Forecast:** NSE will remain active and hatching and fledging will increase locust numbers in the outbreak areas during the forecast period. If left uncontrolled, hopper bands and swarms will pose a threat to crops and pasture, particularly near outbreak areas (IRLCO-CSA, OFDA/AELGA).

**IRLCO-CSA** has alerted its member-states and appealed to partners to assist timely survey and control operations and avoid potentially threatening outbreaks and invasions (IRLCO-CSA<sup>4</sup>, OFDA/AELGA).

**Madagascar Migratory Locust (LMC):** Information for January 2014 was not available at the time this report was compiled, however, locust activities continued during December and hoppers and immature and mature adults were reported in several places in the northern, central and northwestern outbreak and invasion areas (DPV-FAO).

**Forecast:** Good rains that fell during December created favorable ecological conditions for the second generation breeding to commence by the second dekad of January and continue through the forecast period. *Aggressive surveillance, monitoring and timely 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

<sup>4</sup> IRLCO-CSA member-countries = Botswana, Kenya, Malawi, Mozambique, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe

activities were reported in CAC in January (OFDA/AELGA).

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

**Tree locusts:** Control operations continued against Tree Locusts in January in **Turkana County** in **Kenya** where 94,000 ha were reported affected with high densities (20- 450 locusts/tree) populations. Aerial control operations treated 6,000 ha using a DLCO-EA spray aircraft and are expected to continue as more supplies become available (IRLCO-CSA).

**African Armyworm (AAW):** AAW outbreaks continued in January in **Malawi, Tanzania** and **Zimbabwe** and new outbreaks were reported in **Mozambique** where maize, rice and pastures were reported damaged. Affected farmers carried out control with assistance from the Ministry of Agriculture IRLCO-CSA).

**Forecast:** AAW outbreaks will continue in most of the affected areas and threaten crops and pasture during the forecast period. Trap operators are advised to maintain regular monitoring and reporting to enable timely control interventions (DLCO-EA, IRLCO-CSA, OFDA/AELGA, PHS/Tanzania).

**Quelea (QU):** QU birds were reported causing damage to sorghum in **Kenya** where aerial control operations were launched by the MoA in collaboration with DLCO-EA (DLCO-EA, IRLCO-CSA).

**Forecast:** QU outbreaks will continue in **Kenya** and threaten small grains in **Tanzania, Mozambique** and **Zimbabwe** (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 and issue dekadal alerts and monthly updates and advise 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.

With the support they received from external sources, including USAID/OFDA and their own resources, FCs are often able to launch preventive interventions and minimize and avoid the threats the SGR poses to food security and livelihoods of vulnerable communities. ***Preventive interventions that Mauritania launched from October 2013 through January 2014, with its own resources, and abated threatening locust invasions is a good example of a success story.***

CNLAs' continued efforts *to prevent, mitigate, avert and/or respond to potentially devastating SGR outbreaks and invasions* are good examples of **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 henceforth.*

### Weather and ecological conditions

Light rains were reported on both sides of the Res Sea coasts during in January and

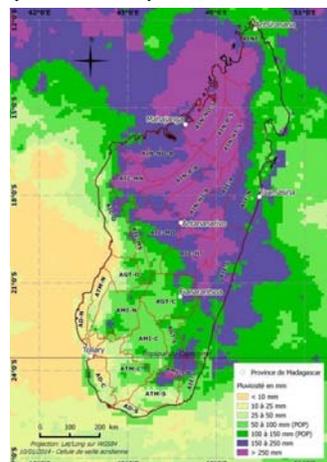
ecological conditions remained favorable for locust to persist during this month. Conditions were fairly favorable in localized areas in northwest and northern **Mauritania**, but remained unfavorable to sustain locust breeding in **Chad, Morocco**.

Heavy to moderate rains were recorded in **NSE** outbreak areas in **Mozambique, Tanzania, and Zambia** during January. Flooding of low lying areas occurred in Buzi-Gorongosa plains and Dimba plains in **Mozambique**. In **Tanzania**, good rainfall was recorded in several places: 339 mm in Malagarasi, 206 mm in Wembere and 147 in North Rukwa plains. In **Mozambique**, both Caia and Gorongosa in Dimba and Buzi-Gorongosa plains reported 133 mm and Mafambize in the other side of Buzi-Gorongosa reported 109 mm. Kafue Flat in **Zambia** reported nearly 200 mm of rain in January (IRLCO-CSA).

Light rains were reported in spring breeding areas in southeast **Iran** and southwest **Pakistan** in January, but SGR **India** remained dry during this period (DPPQS/India, FAO-DLIS).

Conditions are expected to have remained unfavorable in **Central Asia and Caucasus (CAC)** (OFDA/AELGA).

In **Madagascar**, optimum to heavy rains (>40 mm) resulted in 90% vegetation



overage with 100% greening in multiplication, gregarization and invasion areas in the north, central and western parts of the country in December (see Map from DPV-FAO, Feb. 2014). Northwesternly wind persisted blowing southwest in

December.

**Note:** Changes in the weather patterns contribute to ecological shift in ETOP habitats and can increase the risk of pest outbreaks, resurgence and even 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 continued improving in Sahel West Africa and Northwest Africa in January. In **Mauritania**, aggressive control interventions and drying up of vegetation reduced locust populations (more than 50,855 ha since the current campaign began on 5 October, including just 300 ha in January). In **Niger** adult groups were treated on 541 ha in the Tenere Desert during this month. In **Algeria**, adult groups were controlled on 20 ha near irrigated crops.



(SGR situation in January FAO-DLIS, Feb. 2014)

No locusts were reported in Chad, Libya, Morocco or Tunisia and no reports were received from invasion countries during this month.

**Forecast:** Should rainfall commence, small-scale breeding will occur in northwest and northern **Mauritania** and southwest **Morocco** in the coming months. As the temperature warmer and rains start falling, low numbers of adult locusts will

begin appearing and breed in the southern Atlas Mountain regions of **Algeria** and **Morocco** as well as in southwest and central **Libya** (CNLA/Mauritania, CNLA/Morocco, FAO-DLIS, NCDLC/Libya).

### SGR (Desert Locust) - Central Outbreak Region:

In **Sudan**, control operations treated hoppers and adult groups and swarms on 10,481 ha in the Red Sea State, Northern State and River Nile State (37,081 ha treated since November 2013). **Saudi Arabia** treated 23,676 ha during this month (more than 35,130 ha treated since November 2013). In **Eritrea**, control operations treated 16,545 ha mainly along the Red Sea coast some closer to the Sudanese border. In **Yemen** ground control treated hoppers and bands on 678 ha (see table below for detail).

	Eritrea	Sudan	S Arabia	Yemen	Total
Jan	16,545	10,481	23,676	678	51,388
Dec	38,000	5,894	10,990	24,099	78,983
Nov	10,200	20,700	466	15,989	47,355
Total	64,745	37,075	35,132	40,766	<b>177,718</b>

SGR control operations on the Red Sea coasts, Nov. 2013 thru Jan. 2014; (source: various)

A few swarms from northern **Eritrea** were reported reaching southern Sudan where they laid eggs in December and hatched by mid-January. In **Eritrea** more than 64,000 ha were reported controlled with local resources over the past three months and **Yemen** reported close to 40,800 ha treated since November. As local resources continued dwindling, **Eritrea** and **Yemen** appealed to external sources. So far, **Yemen** has received 25,000 l of pesticides from **Saudi Arabia** and an assistance package worth 500,000 USD from FAO. FAO is also considering an assistance package for **Eritrea** and DLCO-EA, headquartered in Addis Ababa, is planning to deploy spray plane to the country for locust operations. While these contributions are useful, affected countries in the region, mainly **Eritrea** and **Yemen**, will likely need more should the SGR situation persist and more locusts appear over the coming months, a situation which is largely dictated by the efficacy of [ongoing] control operations, the presence of

favorable ecological conditions and the capacity to implement preventive interventions where and when needed. In **Oman**, vegetation was green and the soil was moist in Musandam Peninsula, South Battinah, Dakhiliya and North Sharqiya Regions where surveys were carried out, but only a single solitary immature adult was detected in Qabel (DLMCC/Yemen, DLCO-EA, FAO-DLIS, LCC/Oman, PPD/Sudan).

**Forecast:** Locusts from the Red Sea coasts of **Saudi Arabia** will likely move to the interior of the country and begin breeding. Swarms that were reported in **Djibouti** may have or will spread into **eastern Ethiopia**. A few adult locusts may appear in **Oman** and start breeding if rains fall in the coming months (DLMCC/Yemen, DLCO-EA, FAO-DLIS, PPD/Oman, PPD/Sudan).

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

**Forecast:** Low numbers of adult locusts will likely appear and begin breeding in southeast **Iran** and south western **Pakistan** during the forecast period. Significant activities are not expected here or in **India** during the forecast period (DPPOS/India, FAO-DLIS)

**Red (Nomadic) Locust (NSE):** Breeding is underway and hatching is expected to have commenced in the outbreak areas where rainfall occurred. Locust concentrations and swarms that were reported in Lake Chiuta plains in **Malawi** in December are expected to have laid eggs and perished. NSE swarms may have also been flying from Lake Chiuta Plains and in adjacent areas in **Mozambique**. Successful breeding will have increased locust numbers in the outbreak areas in **Tanzania**, **Malawi** and **Mozambique** and **Zambia**.

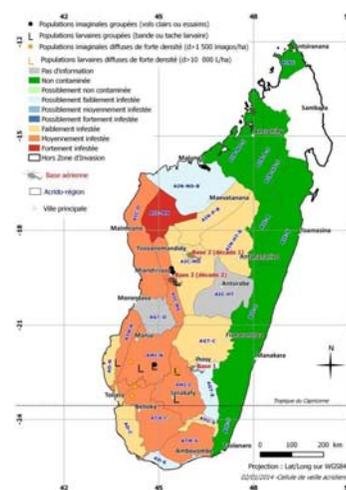
**Note:** NSE and AAW were reported damaging maize crops in Phalombe, Zomba, Machinga and Chiradzulu in Lake Chilwa Basin in southern **Malawi** where 200 ha were reported damaged by late December into early January. IRLCO-CSA has been approached by **MoA/Malawi** to assist with control operations.

**Forecast:** NSE activities will continue and 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 and in Lake Chilwa/Lake Chiuta plains in **Malawi** and **Mozambique** 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 threaten crops and pasture in these countries (IRLCO-CSA, OFDA/AELGA).

*IRLCO-CSA has alerted its member-states and appealed to partners to avail resources to maintain aggressive and timely survey, monitoring and coordinated control operations to avert any serious damage the pest could cause to crops and pasture and then food security of vulnerable populations down the line.*

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

An update was not available for January at the time this report was compiled, however, locust activities



continued during December and hoppers and immature and mature adults were present in several places in the outbreak and invasion areas in the northwest, central and northern zones (see map above; issued on 2/2014 by DPV-FAO).

**Note:** It was reported that insecurity in the southern gregarization zone undermined survey operations and hence information was not available for this area at the time this report was compiled (DPV-FAO). **End note.**

**Survey and control:** No data was available for January at the time this report was compiled and control operations were not conducted during the third dekad of December, but as of the second dekad of December, 68,264 ha were reported surveyed, and of these 49,364 ha were treated and 18,900 ha were protected by air and ground means (26,764 ha from Ihosy operation base and 41,500 ha from Tsiroanomandidy base). The two helicopters leased by FAO covered 297 hours in survey, sortie and control operations through the end of December, 2013 (DPV-FAO).

**Pesticides inventory:** As of the end of December, pesticide inventory was reported at 203,327 l/kg (360 kg of *GreenMuscle*, 62,117 l Chlorpyrifos and 140,850 l Teflubenzuron 50 UL). 436,640 l/kg of pesticides (including 640 kg of *GreenMuscle*) are expected to arrive in the country by the end of February, 2014.

**Human and environmental safety:** As part of its efforts to ensure safety of vulnerable populations and protect the environment, the campaign team [reported] recovered 254

empty 200 l metal drums and stored them for safe disposal (DPV-FAO).

**Forecast:** With good rains allowing ecological conditions to remain more and more favorable in the multiplication, invasion, concentration, and outbreak areas, second generation breeding is expected to have commenced by the second dekad of January and continue through the forecast period. *Vigilance, aggressive surveillance, monitoring and timely preventive interventions remain imperative to avert any major crop damage in the coming months.*

**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 until March/April (FAO-ECLO, OFDA/AELGA).

**Tree locusts:** Control operations that started against Tree Locusts in **Turkana County** in **Kenya** in late 2013 continued into January 2014. A comprehensive survey confirmed that

the outbreak covered 94,000 ha with high densities locusts at 20- 450 individuals per tree. Aerial control operations by DLCO-EA spray aircraft treated 6,000 ha and will likely continue as more supplies become available (DLCO-EA, IRLCO-CSA).

**Timor and South Pacific:** No update was received from E. Timor in January (OFDA/AELGA).

**African Armyworm (AAW):** AAW outbreaks continued causing damage to crops and pasture in **Malawi, Tanzania** and **Zimbabwe** in January. In **Malawi**, the pest affected more than 656 ha in Nsanje, Blantyre and Machinga Agricultural Divisions in January. The pest was reported inflicting severe damage to maize in Blantyre and Machinga where re-planting was needed in some areas. The MoA provided affected farmers with technical assistance, pesticides and sprayers to control the pest and seeds and fertilizers to re plant their field (IRLCO-CSA)

In **Tanzania**, AAW outbreaks were reported in Coast Region in Rufiji district (180 ha affected), in Mbozi district in Mbeya Region in the South Highlands (189 ha affected), and in Kilosa district in Morogoro Region. Control operations were undertaken by the affected farmers with material and technical support from the MoA (IRLCO-CSA, PHS/Tanzania).

In **Zimbabwe**, AAW outbreaks were reported causing mild to severe damage to maize and sorghum on more than 160 ha in Mbire, Muzarabani, Mount Darwin, Mukumbura and Rushinga districts in Mashonaland province from the second dekad of January. Affected farmers carried out control operations with technical and material assistance from the MoA.

In **Mozambique** AAW outbreaks occurred in Nhamatanda, Buzi, Dondo, Chemba, Chibabava and Gorongozza districts where more than 630 ha of maize, rice and/or pasture were affected in January. Control operations were

carried out by the affected famers with material and technical assistance from the MoA (IRLCO-CSA, MoA/Malawi, MoA/Zimbabwe, PHS/Tanzania).

**Forecast:** AAW outbreaks will likely persist in most of the outbreak countries. Trap operators, including community forecasters are advised to continue monitoring the situation closely and report trap catches to concerned authorities rapidly to facilitate timely control interventions (DLCO-EA, IRLCO-CSA, OFDA/AELGA, PHS/Tanzania).

**Quelea (QU):** QU bird outbreaks were reported causing damage to sorghum crops in Makueni County in **Kenya**. Aerial control operations were launched by the MoA in collaboration with DLCO-EA. Survey in traditional outbreak areas, including Nyanza, Eastern and Coast provinces and control operation were in progress at the time this report was compiled (IRLCo-CSA).

**Forecast:** QU outbreaks will continue in **Kenya** and the bird will also likely threaten maturing small grains in **Tanzania, Mozambique** and **Zimbabwe**. Active surveillance and timely interventions remain essential to avert any crop losses during the forecast period (IRLCO-CSA, OFDA/AELGA, PHS/Tanzania).

**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 up to a million or more 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 January. 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 maintain regular monitoring to avoid any surprises. DLCO-EA, IRLCO-CSA, national PPDs, CNLAs, DPVs, ELOs, and others are encouraged to continue sharing ETOP information from the field with partners and stakeholders as often as available. Lead farmers and community forecasters are encouraged to remain vigilance and report any ETOP sightings to field agents and other contact persons immediately.

### **Inventories of National Stocks of Acridid Pesticides**

Pesticide inventory showed a modest change in January as few countries were engaged in control operations: Eritrea (16,545 ha), Sudan (10,481), Yemen (678 ha), Saudi Arabia (23,676 ha), Niger (541 ha), Mauritania (300 ha), Algeria 20 ha. No changes were reported in other countries during the reporting month.

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

Mindful of the risk of pesticides gradually becoming obsolete passed their usefulness and posing serious health and environmental threats and become considerable financial burden, ETOP countries, particularly those with large inventories and 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. Just recently, Saudi Arabia donated 25,000 l of pesticides to Yemen locust campaign. These are good examples 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 I/kg <sup>§</sup>
Algeria	1,190,000~ <sup>D</sup>
Chad	43,400
Eritrea	-4,400~
Egypt	Data not available
Ethiopia	1,600~
Libya	25,000
Madagascar	128,610
Mali	32,000 <sup>D</sup>
Mauritania	48,688 <sup>D</sup>
Morocco	3,757,000~ <sup>D</sup>
Niger	42,805~
Oman	20,000
Senegal	156,000~ <sup>D</sup>
Saudi Arabia	Data not available
Sudan	809,640~
Tunisia	36,575~
Yemen	266.23@ + 527 kg GM~

<sup>§</sup>Include different kinds of pesticides in ULV, EC and dust formulations  
~ data not current

<sup>D</sup> = Morocco, Senegal, Mauritania and Algeria donated/pledged 200,000 I, 30,000 I, and 30,000 I of pesticides to Madagascar in 2013; Mali donated 21,000 I for NSE in Malawi, Mozambique and Tanzania in 2012 and FAO facilitated the triangulation process and received 32,000 I from Morocco;

Mauritania donated 25,000 and 30,000 I of pesticides to Libya in 2012 and Madagascar 2013

GM = *GreenMuscle*<sup>TM</sup> (fungal-based biological pesticide)

@includes donations from Saudi Arabia

**LIST OF ACRONYMS**

AAW African armyworm (*Spodoptera expempta* - SEX)  
AELGA Assistance for Emergency Locust Grasshopper Abatement

AFCS Armyworm Forecasting and Control Services, Tanzania  
AfDB African Development Bank  
AME *Anacridium melanorhodon*  
APLC Australian Plague Locust Commission  
APLC Australian Plague Locust Commission  
CAC Central Asia and the Caucasus  
CBAMFEW Community-based armyworm monitoring, forecasting and early warning  
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)  
CNLA/CNLAA Centre National de Lutte Antiacridienne (National Locust Control Center)  
CRC Commission for Controlling Desert Locust in the Central Region  
CTE *Chortoicetes terminifera*  
DDLC Department of Desert Locust Control  
DLCO-EA Desert Locust Control Organization for Eastern Africa  
DMA *Dociostaurus maroccanus*  
DPPQS Department of Plant Protection and Quarantine Services  
DPV Département Protection des Végétaux (Department of Plant Protection)  
ELO EMPRES Liaison Officers  
EMPRES Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases  
ETOP Emergency Transboundary Outbreak Pest  
Fledgling immature adult locust /grasshopper that has pretty much the same phenology as mature adults, but lacks fully

	<i>developed reproductive organs and hence cannot breed</i>	PRRSN	<i>Pesticide Risk Reduction through Stewardship Network</i>
GM	<i>Green Muscle (a fungal-based biopesticide)</i>	QQU	<i>Quelea quelea</i>
ha	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>	SARCOF	<i>Southern Africa Region Climate Outlook Forum</i>
	<i>Integrated Regional Information Networks</i>	SGR	<i>Schistoseca gregaria</i>
IRLCO-CSA	<i>International Red Locust Control Organization for Central and Southern Africa</i>	SWAC	<i>South West Asia DL Commission</i>
ITCZ	<i>Inter-Tropical Convergence Zone</i>	TAG	<i>Technical Assistance Group</i>
ITF	<i>Inter-Tropical Convergence Front = ITCZ)</i>	Triangulation	<i>The process whereby pesticides are donated by a country or countries, with large inventories with no immediate need, to a country or countries with dire need and a third party steps into the negotiation table and assists with shipments, etc. Usually FAO plays the third party role.</i>
FAO-DLIS	<i>Food and Agriculture Organizations' Desert Locust Information Service</i>		
Hoppers	<i>young, wingless locusts/grasshoppers (Latin synonym = nymphs or larvae)</i>	USAID	<i>Unites States Agency for International Development</i>
Hopper bands	<i>groups of hoppers aggregated and marching in unison and pretty much in the same direction</i>	UN	<i>the United Nations</i>
Kg	<i>Kilogram (~2.2 pound)</i>	ZEL	<i>Zonocerus elegans, the elegant grasshopper</i>
L	<i>Liter (1.057 quarts or 0.264 gallon or 33.814 US fluid ounces)</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>
LMC	<i>Locusta migratoriacapito</i>		
LMM	<i>Locusta migratoria migratorioides (African Migratory Locust)</i>		
LPA	<i>Locustana pardalina</i>		
MoAFSC	<i>Ministry of Agriculture, Food Security and Cooperatives</i>		
MoARD	<i>Ministry of Agriculture and Rural Development</i>		
NCDLC	<i>National Desert Locust Control, Libya</i>		
NOAA	<i>National Oceanic and Aeronautic Administration</i>		
NSD	<i>Republic of North Sudan</i>		
NSE	<i>Nomadacris septemfasciata</i>		
OFDA	<i>Office of U.S. Foreign Disaster Assistance</i>		
PHD	<i>Plant Health Directorate</i>		
PHS	<i>Plant Health Services, MoA Tanzania</i>		
PPD	<i>Plant Protection Department</i>		
PPSD	<i>Plant Protection Services Division/Department</i>		

### Who to Contact:

If you have any questions, comments or suggestions, or know someone who would like to subscribe to this report, please, feel free to contact:

Yeneneh Belayneh: [ybelayneh@usaid.gov](mailto:ybelayneh@usaid.gov)  
Tel.: + 1-202-712-1859

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