

**Emergency Transboundary
Outbreak Pest (ETOP) Situation
Report for June with a Forecast
till mid-August, 2012**

Summary

The Desert Locust (SGR¹) continued developing in Niger and Mali in June where adults from southern Algeria and Libya started arriving from the last week of May. In Niger, some locusts have moved further south and reached Tanout. Damage has been reported on date palms in the Air and Ténéré. Ground teams treated more than 960 ha (2,400 acres) near Termit as of 1st June. Immature and mature locusts were reported in Aguelhoc, Timetrine, in *wadis* along the western side of the Adrar des Iforas in northern Mali, but the national locust control unit cannot access the northern part of the country and confirm or carry out further survey and control due to the ongoing insecurity situation. Scattered adult locusts were reported in southeastern Mauritania (DDL/C/Libya, FAO-DLIS, INPV/Algeria).

The current locust situation in northern Sahel is potentially dangerous as swarm movements will likely coincide with the summer cropping season. If so, this will further complicate the situation which is already precarious. FAO has issued an appeal for \$10 million to assist Sahel West African countries to address the current locust threat. Neighboring countries, including

Algeria and Morocco have indicated that they will provide pesticides to Mali, Niger and/or Chad. Some donors have also expressed interest to assist. No locusts were detected during surveys carried out in mid-June in Libya and only some 990 ha were treated in Algeria. However, Algeria, Libya, Morocco and Mauritania are alerted to remain vigilant to avert any potential invasions in fall when the locusts from the Sahel begin migrating back north. It is imperative that locusts are closely monitored and to the extent possible any threats are prevented.



(DL will soon start laying eggs in Mali and Niger, FAO-DLIS, July, 2012)

No locusts were reported in Chad, Ethiopia, Djibouti, Eritrea, Somalia, Sudan, Yemen Saudi Arabia, India, Iran and only a few adults were detected in Baluchistan in western Pakistan and Cholistan in western and eastern Pakistan during this period. Only some hoppers and adults caused minor damage on date palm and other crops in northeastern Oman (DDL/C/Libya, DLCO-EA, DPPQS/India, FAO-DLIS, INPV/Algeria).

Forecast: As a result of the good rains that fell in Niger and Mali earlier than usual, conditions have become favorable and one to two generations occur here and perhaps in Chad during this summer. The first egg-laying is expected to start in the coming

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

weeks and will likely continue well into July and form hoppers and bands. Mauritania may also experience an early summer breeding.

OFDA/TAG is closely monitoring the situation and will advise as necessary.

Other ETOPs

Red (Nomadic) Locust (*NSE*):

Swarms and groups of NSE persisted in the outbreak areas in Tanzania in June. A similar situation was reported in Malawi, but the situation Zambia and Mozambique remained fairly calm during this period (IRLCO-CSA).



(Red locust swarm in Ikuu Plain, Tanzania, 4/28/20120, IRLCO-CSA)

Forecast: The grass burning is in progress and will cause dense swarms to form. If left uncontrolled, these swarms will invade neighboring countries in the region and beyond (IRLCO-CSA).

Madagascar Migratory Locust (*LMC*):

No update was received at the time this report was compiled, but locusts may have continued appearing in areas that received good rains the previous months. FAO deployed a locust expert to assess the situation in the outbreak and invasion areas and

the results are being awaited (FAO-ECLO, FAO-CNA).



(A locust swam in southeastern Morondava, FAO, May 10, 2012)

Forecast: More locusts are expected to continue appearing in areas where good rains fell over the past months. Vigilance and timely interventions are essential to avert any major threats to agriculture and food security of the vulnerable populations (AELGA).

Moroccan (*DMA*), Italian (*CIT*) and Migratory (*LMI*) locusts in Central Asia and the Caucasus (CAC): DMA continued developing in CAC countries. Control operations treated close to 716,000 in May, 5x that of April. CIT began hatching in Armenia during the 3rd dekad of May and control operations were planned for the first half of June (FAO-ECLO).

Forecast: DMA will further develop and CIT will continue hatching in a number of countries and form hoppers and bands requiring control operations during the forecast period.

African Armyworm (*AAW*): AAW situation remained calm in all outbreak areas during June (DLCO-EA, IRLCO-CSA, PHS/Tanzania).

Forecast: AAW activities may appear in Kenya and Ethiopia due to local breeding during the forecast period. Trap operators and community forecasters are encouraged to monitor the situation and alert farmers and concerned authorities (AELGA, DLCO-EA, and IRLCO-CSA).

Quelea (QQU): QQU outbreaks were controlled over some 420 ha in Mbenya, Morogoro and Kilimanjaro Regions of Tanzania in June. The birds were also reported in Nyanza Province in Kenya, Ghaza province in Mozambique and Manicaland Province in Zimbabwe. The birds were reported damaging/threatening wheat, sorghum, millets and rice (DLCO-EA, IRLCO-CSA).

Forecast: QQU birds will likely continue posing a problem to small grain crop growers during the forecast period and vigilance is critical (AELGA, IRLCO-CSA).

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

Progress and Challenges in SGR Frontline Countries:

Sahel West Africa's SGR frontline countries (FCs) namely **Chad, Mali, Mauritania, Niger** have established autonomous national locust control units (CNLA) that are responsible for DL activities.

Funds provided by the African Development Bank, USAID, the World Bank, France, FAO, host-governments, and supports from 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 SGR outbreaks and avoid the threats they pose to food security and livelihoods of vulnerable communities.

However, the ongoing insecurity situation in the region, particularly in northern Mali and parts of Niger, continue undermining implementation of timely and effective survey and control interventions in these countries.

*CNLAs' efforts to avert mitigate or respond to potentially devastating SGR outbreaks and invasions deserve support and encouragements – a good example of **sustainable disaster risk reduction** with modest inputs.*

OFDA ETOP Activities and Impacts

- OFDA/TAG continues its initiatives in pesticide risk reduction through stewardship network (PRRSN) programs to ensure safety of vulnerable people and protect their assets and the shared environment against pesticide pollution. OFDA/TAG successfully launched two sub-regional PRRSNs in Eastern Africa and the Horn. The Horn of Africa PRRSN initiative has created a sub-set Association in Ethiopia (PSA-E).
- Discussions that began several months ago to launch similar PRR initiatives in North Africa and the Middle East were halted by the unrests manifested in the regions. An effort is underway to resume dialogue with partners in the region.

- OFDA continued its assistance for DRR through capacity strengthening programs with FAO to mitigate, prevent, and respond to and reduce risks of ETOP emergencies.
- OFDA's modest assistance for obsolete pesticide prevention and management has enabled FAO to develop a dynamic system (PSMS) for monitoring, managing and reporting pesticide inventories in ETOP prone countries. This has enabled countries to launch regular monitoring and make decisions concerning their stocks and prevent unnecessary accumulation of obsolete stocks.
- For the first time, OFDA is supporting a program through FAO to strengthen national and regional capacities in Central Asia and the Caucasus (CAC) to coordinate locust monitoring and reporting and plan prevention and mitigation efforts to abate and minimize the threats they pose to food security and livelihoods of vulnerable populations.
- OFDA/AELGA is exploring community-based armyworm forecasting, monitoring and early warning to reduce the risk of AAW threats to vulnerable populations and their assets.

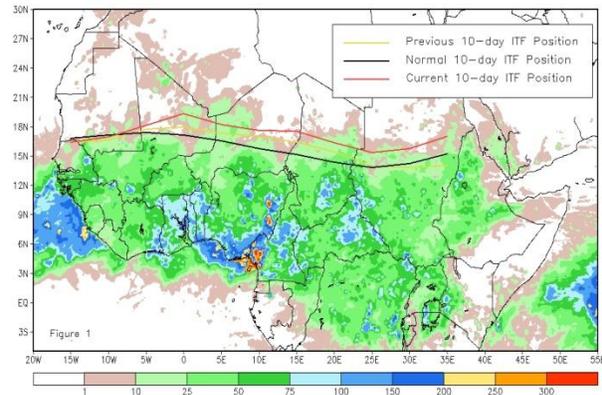
All ETOP SITREPs can be accessed on our website in the below link:

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

Weather and ecological conditions

During the last dekad of June, the Inter-Tropical Front (ITF) moved further North across the central and eastern portions of Africa. The mean western portion of the Front was around 18N, 1.2 degree N of the mean climatological position and in the eastern portion its mean was near 16.1N, 1.7 degrees N of its earlier position (see Map, NOAA, June, 2012).

Current vs. Normal Dekadal ITF Position and RFE Accumulated Precipitation (mm)
June 2012, Dekad 3



Below average rain was reported in portions of Senegal, Mali, Burkina Faso, Sudan and western Ethiopia where as above average rain was reported in Niger, South Sudan Republic, local areas in Kenya and Ethiopia, and portions of South Africa. From 11-20 June, the Front continued to progress north across the western (17.3N) and eastern (14.3N) sections of Africa and remained north of the climatological average position. Stronger daily bursts of southerly winds pushed rains into northern Mali and Niger during this period. Light to moderate rains fell in Libya, northern Mali, northern Niger and Chad during the first week of June (DLCC/Libya, NOAA).

Dry weather prevailed in the NSE outbreak areas in June except in Buzi-Gorongosa plains in Mozambique where isolated light rains were recorded. Temperatures remained relatively low in all the outbreak areas (IRLCO-CSA). Slight increase in temperature persisted in CAC countries in May and the situation is expected to have improved in June (FAO-AGP).

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

Detailed accounts of the ETOP situation and predictions for the next six weeks are presented henceforth.

SGR - Western Outbreak Region: SGR activities continued in northern Sahel in June where adult groups and swarms from southeastern Algeria and southwestern Libya were reported arriving from the last week of May well into June 11. More than 17 groups of immature adults and small swarms were reported between Arlit and Dirkou, the Air Mountains and the Ténéré Desert in northern Niger. Some adults reached pasture areas further south in the northern cropping zones near Tanout. The pest has caused damage to date palms and cultivated areas in the Air and Ténéré. Adults are maturing in northern Niger where small groups and swarms are present. An increasing number of immature and mature adults have been seen in pasture areas of central Niger between Tanout and Termit over the past few days. Adults were reported laying eggs in at least one place. Ground teams treated more than 960 ha in the grazing areas near Termit since June 1 (DDL/ Libya, FAO-DLIS, INPV/Algeria).

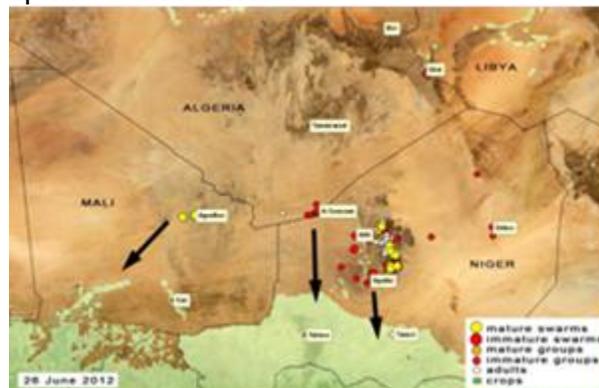
Immature and mature locusts were reported in Aguelhoc, Timetrine, and wadis along the western side of the Adrar des Iforas in northern Mali by nomads, travelers and other sources as the national locust control unit has no access to the northern part of the country due to the ongoing security situation.

The locust situation is potentially dangerous and requires immediate actions to abate any serious damage it could cause

to crops and pasture. The situation in southern Libya and Algeria has improved significantly as vegetation continued drying out and locusts were moving south to northern Sahel. No locusts were detected during surveys carried out in Libya from 13-16 June and only 987 ha were treated in Algeria during this period (DDL/ Libya, FAO-DLIS, INPV/Algeria).

International Appeal:

FAO issued an appeal for \$10 million to support Sahelian countries to address the current DL threat. Funds are required for national survey and control operations in the infested areas as well as in cropping and pasture areas. The scale of control operations beyond the summer will depend on rainfall, locust developments and control operations during the next two months. OFDA is evaluating the situation to respond to the international appeal and AELGA will continue monitoring the situation closely and issue updates and advise.



(southward migration locusts, 6/2012, FAO-DLIS)

Responses from neighboring countries:

Algeria has pledged 16,000 l of pesticides to Chad and 15,000 to Mali. Morocco and Algeria are also planning to provide pesticides to Mali and Niger. Mauritania, Algeria, Libya and Morocco are on alert and will activate their National Contingency Plans in preparation for a potential invasion in fall when the locusts in the Sahel begin migrating back north to these countries.

Mauritania has fielded survey and control teams to its eastern/southeastern border with Mali to

monitor and preventive swarms arriving from Mali. It has also donated 25,000 l of pesticides to Libya (on June 6th and 8th) through triangulation involving Ministries of Agriculture, FAO, CLCPRO and the national Desert Locust Control Centers in the two countries. Algeria Mauritania has indicated that it has adequate quantity of pesticides in its inventory for the summer campaign (DDL/Libya, FAO-DLIS, INPV/Algeria).



(FAO-DLIS, 26 June, 2012)

Forecast: In northern Niger and Mali the good rains that started this year more than a month and half earlier than normal created favorable conditions. As a result, at least one and probably two generations of breeding are likely and significantly increase locust numbers this summer in these countries and perhaps in Chad. The first generation of egg-laying is expected to start in a matter of weeks and continue through July. Control operations will be needed against hopper bands and swarms throughout summer season (AELGA, DDL/Libya, FAO-DLIS, INPV/Algeria).

SGR - Central Outbreak Region: No locusts were reported in Sudan, Eritrea, Ethiopia, Djibouti, Somalia or other Red Sea region countries during this period. Only a few adults and hoppers were reporting causing damage to date palm and other crops in northern Oman (DLCO-EA, FAO-DLIS).

Forecast: Small-scale breeding could commence and locust numbers increase in the interior of Sudan and in western Eritrea, but nothing significant is expected during the forecast period (DLCO-EA, FAO-DLIS).

SGR - Eastern Outbreak Region: Spring breeding areas in western Pakistan experienced a decline in locust numbers in June owing to unfavorable conditions. Only a few adults were detected in the interior and coastal areas in Baluchistan. A few solitary adults were observed in the summer breeding areas in Cholistan, Pakistan near the Indian border, but no locusts were reported in India (DPPQS/India, FAO-DLIS).

Forecast: Small-scale breeding could begin in eastern and perhaps western Pakistan, but significant developments are not expected during the forecast period (DPPQS/India, FAO-DLIS).

Red (Nomadic) Locust (NSE): Swarms and concentrations of NSE persisted in Ikuu-Katavi, Wembere, and North Rukwa plains as well as Malagarasi Basin in Tanzania in June. A similar situation was reported in Lake Chilwa/Lake Chiuta plains in Malawi. The situation remained relatively calm in Buzi-Gorongosa and Dimba plains in Mozambique and Kafue Flats and Lukanga Swamps in Zambia during this period (IRLCO-CSA).

Forecast: The grass burning that is in progress in all Red Locust outbreak areas will concentrate NSE populations into more dense swarms which, if not urgently controlled, will escape (as is happening in Ikuu-Katavi plains in Tanzania). Escaped swarms will migrate and invade neighboring countries, including Rwanda, Burundi, Uganda, or Congo Republic and possibly Zambia, Mozambique and Zimbabwe following the prevailing wind. Should the situation remain unchecked, the region could see a Red Locust plague emerging (IRLCO-CSA).

(Note: NSE breeding/outbreak areas are vast flat and treeless grasslands located at an altitude of 700 to 800 meters (2,300 to 2,600 ft) above sea level. These areas are frequently flooded. NSE breeds in these areas once a year and lays eggs at the onset of the rains in November/December. By January eggs hatch and form hoppers that go through six to seven stages before they fledge into immature adults by March to April. Immature adults concentrate and form swarms that threaten crops and pasture.

Many of the NSE breeding areas are protected conservation area where a large variety of game animals and birds thrive. This demands bio-rational tools, such as bio-pesticides and other selective and soft pesticides which are beneficial to the environment and safer to humans and non-target organisms, including cattle and game animals. Unfortunately, despite their environmental benefits, these tools are often expensive compared to conventional pesticides and hard to come by in large quantities adding a hurdle to control interventions. Nevertheless, one needs to consider their safety and environmental benefits over cost when selecting appropriate control tools for specific localities and crops (AELGA, PHS/Tanzania). **End note)**

Madagascar Migratory Locust (LMC):

A late received update indicated that gregarious adults from the second generation locusts formed groups and swarms (the 1st swarms appeared at the end of April). Adult populations were reported in the northern part of Horombe Plateau, Ankazoabo basin in the transitory outbreak areas in the southern and the central parts of the Betsiriry corridor as well as far north as Maintirano in the invasion areas. Aerial control operations treated more than 25,000 ha and protected almost 32,000 ha as of the first week of

June. FAO has deployed a locust expert to assess the situation in the outbreak and invasion areas and the results are being awaited (FAO-AGP).

Forecast: Locusts will likely continue appearing in areas of green vegetation.

USAID/OFDA will continue closely monitoring the situation through AELGA project as well as other means and advise accordingly (AELGA, FAO-CNA).

Moroccan (DMA), Italian (CIT) and Migratory (LMI) locusts in Central Asia and the Caucasus (CAC): A late received report indicated that DMA was further developing in many CAC countries. Control operations treated close to 716,000 in May, five fold of the area treated in April, in Afghanistan, Georgia, Tajikistan and Uzbekistan. Control operations have also begun in Azerbaijan, but details were not available at the time this report was compiled. CIT has begun hatching in Armenia during the 3rd dekad of May and control operations were planned for the first half of June (FAO-ECLO).



(Locust prone CAC countries, FAO)

Forecast: Hatching and hopper formations will commence/continue in some countries and control operations will be required in the coming months (AELGA, FAO-ECLO).

Australian Plague Locust (APL): No update was received for June at the time this report was compiled. However, eggs that were laid from local populations from mid-March on and from redistributed adults continued diapausing and will do so till next spring and no activities are expected during the forecast period (APLC).



(Australian plague locust, source: APLC)

Timor and South Pacific: No update was received in June in Timor and South Pacific during this period.

African Armyworm (AAW): AAW outbreaks were not reported in June, but moth catches could increase during the forecast period in the northern outbreak region. The situation remained calm in other countries during this period (DLCO-EA, IRLCO-CSA, PHS/Tanzania).

Forecast: Local breeding will likely begin in Kenya and southern Ethiopia and increase the AAW number. Active monitoring and preventive intervention are recommended. Trap operators and community forecasters are encouraged to continue monitoring and alert farmers and report to relevant authorities as needed (AELGA, DLCO-EA, and IRLCO-CSA).

Quelea (QQU): Aerial QQU control covered 65 ha in Manyara, 220 ha in Mbeya and 235 ha in Morogoro regions in Tanzania in June spraying Queliatox with DLCO-EA aircraft. The birds were threatening and/or destroying wheat,

bulrush, millet or irrigated rice. DLCO-EA also dispatched its spray aircraft to Kisumu District in Kenya to control the birds that were attacking rice crops, but the operation was disrupted due to heavy rains. QQU birds were reported attacking irrigated wheat in Chipinge district of Manicaland Province in Zimbabwe where ground operations were in progress at the time this report was compiled. The situation was calm in Mozambique after IRLCO-CSA and the Ministry of Agriculture carried out control operations in Chokwe district of Ghaza province (IRLCO-CSA).

Forecast: QQU birds will likely continue being a problem to small grain crop growers in the Rift Valley and Nyanza Provinces in Kenya, in Tanzania, Mozambique as well as in winter wheat growing provinces in Zimbabwe. Vigilance should be exercised to protect crops (AELGA, 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 colony composed of a million birds (very common) is capable of consuming and destroying 7-10 tons or 7,000 to 10,000 kg of seeds/day, enough to feed 15,000-20,000 people for a day.

Rodents: rodents were reported in southern Mauritania, but details were not available.

Note: 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. **End note.**

Front-line countries where ETOP outbreaks first occur are advised to remain vigilant. Countries in the invasion zones should maintain the capacity to monitor and 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. Lead farmers and community forecasters are

encouraged to remain vigilant and report any ETOP sightings to field agents and other contact persons.

Inventories of Acridid Pesticide Stocks

ETOP pesticide inventory changed slightly during June as control operations continued in Niger and Algeria where 960 ha and 987 ha were treated, respectively during the month (DDL/C/Libya, FAO-DLIS).

Mindful of the risk of pesticides becoming obsolete once passed their end-of-use, 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 discard them immediately. All options should be explored to avoid the risks that old stocks pose to humans, the environment, and non-target organisms as well as the huge financial burden associated with disposing them. A judiciously executed triangulation (**see page 1 for definition**) of stocks from countries with large inventory to where there are immediate needs is a double-edged alternative that is worth considering.

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

Estimated (acridid) pesticide inventories

Country	Quantities in '000l/kg ^{\$}
Algeria	1,200~
Chad	108.09~
Eritrea	43.9~
Egypt	Data not available
Ethiopia	1.9+~

Libya	Data not available
Madagascar	Data not available
Mali	208.8d~
Mauritania	435.3~
Morocco	4,100~
Niger	27.25+
Senegal	156~~
Saudi Arabia	Date not available
NSD	860"
Tunisia	167.6~
Yemen	33.00 + .527 kg GM

These quantities include ULV, EC and dust formulations
 ~ data not necessarily current
 ~~ as of September 28, 2011
 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 expempta* - SEX)
- AELGA Assistance for Emergency Locust Grasshopper Abatement
- AFCS Armyworm Forecasting and Control Services, Tanzania
- AfDB African Development Bank
- 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	<i>Commission de Lutte Contre le Criquet Pélerin dans la Région Occidentale (Commission for the Desert Locust Control in the Western Region)</i>	FAO-DLIS	<i>Food and Agriculture Organizations' Desert Locust Information Service</i>
		Kg	<i>Kilogram (~2.2 pound)</i>
		L	<i>Liter (1.057 quarts or 0.264 gallon or 33.814 US fluid ounces)</i>
CNLA/CNLAA	<i>Centre National de Lutte Antiacridienne (National Locust Control Center)</i>	LMC	<i>Locusta migratoriacapito</i>
		LMM	<i>Locusta migratoria migratorioides (African Migratory Locust)</i>
CRC	<i>Commission for Controlling Desert Locust in the Central Region</i>	LPA	<i>Locustana pardalina</i>
		MoAFSC	<i>Ministry of Agriculture, Food Security and Cooperatives</i>
CTE	<i>Chortoicetes terminifera</i>	MoARD	<i>Ministry of Agriculture and Rural Development</i>
DDLC	<i>Department of Desert Locust Control</i>	NOAA	<i>National Oceanic and Aeronautic Administration</i>
DL	<i>Desert Locust</i>	NSD	<i>Republic of North Sudan</i>
DLCO-EA	<i>Desert Locust Control Organization for Eastern Africa</i>	NSE	<i>Nomadacris septemfasciata</i>
		OFDA	<i>Office of U.S. Foreign Disaster Assistance</i>
DMA	<i>Dociostaurus maroccanus</i>	PHD	<i>Plant Health Directorate</i>
DPPQS	<i>Department of Plant Protection and Quarantine Services</i>	PHS	<i>Plant Health Services, MoA Tanzania</i>
DPV	<i>Département Protection des Végétaux (Department of Plant Protection)</i>	PPD	<i>Plant Protection Department</i>
		PPSD	<i>Plant Protection Services Division/Department</i>
ELO	<i>EMPRES Liaison Officers</i>	PRRSN	<i>Pesticide Risk Reduction through Stewardship Network</i>
EMPRES	<i>Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases</i>	QQU	<i>Quelea quelea</i>
		SARCOF	<i>Southern Africa Region Climate Outlook Forum</i>
ETOP	<i>Emergency Transboundary Outbreak Pest</i>	SGR	<i>Schistoseca gregaria</i>
		SWAC	<i>South West Asia DL Commission</i>
GM	<i>Green Muscle (a fungal-based biopesticide)</i>	TAG	<i>Technical Assistance Group</i>
ha	<i>hectare (= 10,000 sq. meters, about 2.471 acres)</i>	USAID	<i>Unites States Agency for International Development</i>
IRIN	<i>Integrated Regional Information Networks</i>	UN	<i>the United Nations</i>
		ZEL	<i>Zonocerus elegans, elegant grasshopper</i>
IRLCO-CSA	<i>International Red Locust Control Organization for Central and Southern Africa</i>		
ITCZ	<i>Inter-Tropical Convergence Zone</i>		
ITF	<i>Inter-Tropical Convergence Front = ITCZ)</i>		

Point of Contact:

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