



# ECLO Operations Report

## EMERGENCY CENTRE FOR LOCUST OPERATIONS

### SITUATION UPDATE as of August

*The Desert Locust situation continues to remain calm in all regions and only limited ground control operations have been carried out in Algeria and Libya this summer. Good rains have fallen in the summer breeding areas in the Sahel in West Africa and small-scale breeding will cause locusts to increase slightly. No locusts have been reported so far this summer in the Central Region but small-scale breeding is expected to occur in areas of recent rainfall in the Sudanese interior and perhaps on the Red Sea coast near the Yemen / Saudi Arabia border. A few small local outbreaks could develop in October or November in some of the above areas.*

A preparatory meeting for a workshop on alternative methods for locust control was held at the FAO HQ on 21-22 June. Representatives from locust-affected countries, producers of the biopesticide *Metarhizium* and staff from the International Institute for Tropical Agriculture (IITA), the International Co-operation Centre of Agricultural Research for Development (CIRAD) and the FAO Locust Group participated. Apart from planning the workshop, the participants discussed the usefulness of bio-pesticides in preventive locust control strategies.

### 38<sup>th</sup> Session of the Desert Locust Control Committee, Rome 11-15 September

The 38th session of the FAO Desert Locust Control Committee (DLCC) will be held at FAO Headquarters from 11-15 September 2006.

The DLCC is the primary forum for locust-affected countries, donors and relevant organizations. It advises FAO on all locust management issues such as early warning, campaign planning, information, survey, control, emergencies, human health and the environment.

The meeting will focus on the current Desert Locust situation and forecast, and review the 2003-05 upsurge. The Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES) will be discussed, as well as bilateral assistance, new technologies, the DLCC Technical Group, trust fund contributions and a 2007-08 workplan.

20 working papers associated with these topics will be presented at the event. They are posted in English, French and Arabic on FAO's Locust Watch site:

<http://www.fao.org/ag/locusts/en/info/929/index.html>

### Regional Workshop for the Development of a Strategy to Avoid Stock-piling of Obsolete Pesticides Bamako (Mali), 15 – 18 May, 2006

Lack of coordination among partners on provision and purchase during the recent Desert Locust campaign gave rise to an over-supply of pesticides in the Western Region. A regional workshop jointly organised by FAO and the World Bank, with the assistance of Sahelian Committee for Pesticides, took place in Bamako to develop a coordinated management of the considerable pesticide stocks remaining and to avoid their becoming obsolete. The event was supported with funding provided by the Netherlands.

The workshop was attended by representatives from 14 countries (Algeria, Burkina Faso, Cap Verde, Chad, The Gambia, Guinea, Guinea-Bissau, Libya, Mali, Mauritania, Morocco, Niger, Senegal, and Tunisia), as well as experts from the FAO, the Commission for Controlling the Desert Locust in the Western Region (CLCPRO), the coordination group for Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (EMPRES), the World Bank, the Sahelian Committee for Pesticides, representatives from the chemical industry and NGOs.

The workshop stressed the urgency of reducing the quantity of pesticides which is currently 7 880 432 litres in the region, of which 1 793 000 litres can be considered as strategic stock, meaning that at least 5 million litres have to be treated, made innocuous or be re-used for other purposes. The main conclusions of the workshop were:

- The best possible use of the pesticide stocks would be against grasshoppers during the summer campaigns. Correct usage must be guaranteed through meticulous registration of the use of the pesticides and an assurance that spray operations are executed by authorized and well-trained staff.
- The storage and management of the stocks should be up-graded to avoid environmental damages and misuse of the pesticides.
- A regional database on pesticides should be established and all concerned staff must be trained in pesticide management.
- The current list of registered pesticides used for locust control should be increased.
- Quality analysis of the stored pesticides should be carried out in a systematic manner.

## Efforts to Mitigate Environmental and Health Hazards in the Aftermath of the Desert Locust Campaign

The control strategy to thwart the vast Desert Locust upsurge of 2004 focused on killing the maximum number of locusts to save crops and pastures while measures had to be taken to minimize the impact of the control operations on human health and the environment. During the campaign, an estimated 12.9 million ha were sprayed with over 13 million litres of pesticides. More than 7.8 million litres of pesticides remained at the end of the campaign. This was partly caused by the fact that additional quantities of pesticides were purchased towards the end of the campaign. These pesticide stocks are now being accounted for and the majority of them need to be disposed of as soon as possible.

While trying to address the problems with surplus stocks after the campaign it has to be considered that many of the affected countries do not have environmental impact research strategies, specialized laboratories or a sufficient number of qualified staff to follow the fate of the pesticides in the environment and within the framework of public health policies. This means that it is necessary not only to take care of and treat the pesticides that can become obsolete and their containers, necessary steps also have to be taken in order to i) strengthen environmental compliances; ii) enforce the application of regulations and rules for safer handling, use and storage of pesticides; iii) strengthen the technical capacity of the national teams for Quality and Environment Survey of Treatments (QUEST) in collaboration and agreement with the EMPRES programme and the CERES-Locustox foundation, while ensuring their linkage to national locust control units; and iv) pursue the establishment of pesticide contractual arrangements to reduce the accumulation of pesticide stocks. These challenges have to be addressed in collaboration with the FAO, CLCPRO, donors and the pesticide producers. The Bamako Workshop outlined a strategy to accomplish this and efforts to attend to the complicated aftermath of the campaign are currently being done all over the region.

New storage facilities are being constructed and old ones rehabilitated or destroyed. FAO is supporting these actions in close collaboration with the World Bank. Metal drums are crushed in machines that combine the compression with rinsing through special solvents. The drumcrushers are capable of reducing 200 litre steel barrels to 20 kg packages, the size of small suitcases and they have been ordered for (and partly delivered to) Algeria, Chad, Morocco, Niger, Senegal, and Tunisia. Drumcrushers were purchased with funding provided by Germany, France, Italy, Belgium, and the African Development Bank. The disposal of plastic containers is more complicated since some pesticide is absorbed into the plastic. Measures are taken to address this issue, while FAO is continuously making sure that only pesticides in metal drums are ordered. Human health and environmental risks could be avoided through the use of products that are virtually non-toxic for non-target organisms, such as Green Muscle®. This product has recently been tested in large-scale field trials in Algeria and in Niger and additional trials are scheduled for 2006 and 2007. In February 2007, a workshop to plan for further development and promotion of alternative control methods will be held in Dakar (Senegal), in collaboration with the World Bank.

During the campaign no serious human and health incidents were reported. However, there is a lack of analytical methods to monitor intoxications and research has started to develop biomarkers for the detection of exposure to pyrethroids, at the same time as efforts to train control (QUEST) teams continue.

So far, QUEST teams have been established in Burkina Faso, Cape Verde, Chad, The Gambia, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, and Senegal. The teams are composed of staff from the Ministries of Agriculture, Health and Environment. In Mali, Mauritania and Senegal the QUEST teams have been institutionalized. QUEST teams are funded by Spain, Sweden, Germany, and the European Community.



Soil sampling at St Louis International Airport in Senegal, a heavily polluted site.



Health check of field workers before "polluted sites" mission, Mauritania.



Storage facility in Mauritania.



Leaking drum.



Collection of polluted soil at a site in Mauritania.



Compressed pesticide drums in a storage facility in Mauritania.

Photo top left:  
FAO/Wim Mullié.

All other photos:  
FAO/G. van de Klashorst.

## Training of Teams for Quality and Environment Survey of Treatments (QUEST), in the Gambia

The Gambia has an area of 10 600 km<sup>2</sup> and is thus relatively small compared to other countries in the Desert Locust distribution area. Nevertheless, the country is endowed with a great variety of ecosystems containing a large number of animal and plant species. Control of locusts is not easy as there are many ecologically sensitive areas, such as mangrove swamps and sites protected by law, consequently special caution has to be taken to such regions. When Gambia was infested by Desert Locusts during the period November 2004 to February 2005, nearly 14 800 hectares (about 1.4 percent of the total land area) were treated. The zones mostly affected were wetlands, pastures, field crops and village horticultural land.

QUEST training sessions for the "Southern Circuit" were initiated in the Gambia in late February 2006 and conducted at the Agricultural Extension Farmer Rural Centre in Jenoi. The 22 participants represented the Department of Agricultural Services, the National Environment Agency, the Department of Health Services and the National Army. At the initiative of the National Coordinator of the Africa Emergency Locust Project (AELP) observers were invited from the National Assembly and the media, these also sensitised farmers and rural populations on risks associated with the use of pesticides. The course started with an introduction to the bio-ecology of Desert Locust, followed by two half-days of field exercises. Trainees carried out a simulated control operation, at the same time as they practised methods for monitoring potential pesticide impact on non-target fauna, especially arthropods (insects and spiders). The participants wore the obligatory protection gear. To get used to the routine, the participants informed the nearest villages of the intended treatment. Weather data were recorded all through the training sessions and all trainees were instructed in the use of Global Positioning Systems (GPS). Furthermore, a visit was paid to a nearby pesticide store. After the field practice, a CERES-Locustox consultant demonstrated the methodology of cholinesterase testing and the participants were given an opportunity to practice. The last two training days were dedicated to topics like sensitive non-target fauna, toxicity, and pesticide management. An outcome from the group discussions on sensitive environments was the intention to elaborate maps delimiting areas of ecological and economic importance, indicating buffer zones that would constitute a safety measure if locusts would threaten the sensitive areas. Funding for the QUEST training in The Gambia was provided by Spain.



Photo: FAO/Helena Eriksson

Wetlands in the Gambia.



Photo: FAO/G. van de Klashorst.

Sorting the catch from pitfall traps, which were placed in treated and untreated areas for comparison of arthropod presence.



Soil samples are being collected in Mauritania. The dark spots on the earth are leaks from damaged drums.

Photo: G. van de Klashorst

### Preparation of Summer Survey Operations in Front Line Countries

In compliance with a 2006 action plan, revised and approved during the EMPRES liaison officers meeting in Algiers, February 2006, Chad, Mali, Mauritania and Niger have for three months prepared survey operations that were planned to start in July. Training/refreshment courses, including field practices, have strengthened national capacities in Desert Locust bio-ecology, survey and control techniques. Rehabilitation of key infrastructures (national locust centres, field bases and pesticides storage facilities) has been initiated and material resources have been reinforced with national focal points. The World Bank has enabled an improvement of the coordination and a rationalization of the use of available fund for the post-emergency period aimed at supporting the establishment of the special EMPRES programme, a preventive approach focused on early warning a rapid response.

Field operations are expected to last at least three to four months depending on weather conditions. Furthermore, Desert Locust data collection and transfer will be improved thanks to a regional workshop on new information technology (Ramsesv3, eLocust and satellite images) that was organised in Agadir, Morocco from 3 to 7 July and by the delivery of the related equipment to the target countries.

## Software for Management of Cholinesterase Data Made Available

The Sub-regional Desert Locust Office in Dakar, Senegal, has developed a software called SYGAC (*Système de Gestion des Analyses Cholinestérasiques*) to assist QUEST teams to manage cholinesterase data and interpreting data in a uniform way. The development was made possible through funds provided by the European Community. Standard output formats are available to produce reports, graphs and tables. Comparisons between countries and/or regions will equally be facilitated. A Beta-version of the programme has been circulated among QUEST national consultants and the final product was made available in July.

Among the features are warning messages if certain data exceed normal values and real-time processing of the data during input presents advise whether a tested person needs a medical control or has to be removed from exposure. An interesting feature is the possibility to analyze data by team, function or period, presenting output in four logical colours, such as green if no action is necessary and red if immediate medical action is required. It is expected that with SYGAC the interpretation of cholinesterase data will be easy and errors will be prevented



Photo: FAO/Wim Mullié

Cholinesterase analysis being carried out in Kindia, Guinea.

## Environmental Cartography of Senegal

Austrian funding has supported the *Centre de Suivi Ecologique* (CSE) in Dakar in the preparation of a Geographical Information System (GIS) of ecologically sensitive areas in Senegal on a scale of 1:100 000. The Centre, guided by the Sub-regional Desert Locust Office and the Plant Protection Department of Senegal, has developed the outline for this pilot study which will be executed from October 2006 up to January 2007. An important feature is that cartographic overlays will be compatible with the RAMSES database, which is currently used by the Plant Protection Department to store all relevant information on survey and locust control operations. A retrospective analysis of potential environmental impact of locust control is feasible, but the new contribution will in particular be instrumental in the development of strategies to prevent negative impacts in the future. The idea is that Plant Protection Departments, Desert Locust Centres and QUEST teams in the Sub-region will have access to both RAMSES and this newly developed instrument.

The World Bank has shown interest in further developing the results of this pilot project in the framework of Africa Emergency Locust Project (AELP). As a first step, the ECLC coordinator at the Sub-regional Desert Locust Office in Dakar had a meeting with the AELP coordinator at the Plant Protection Department of Niger in Niamey, where the next developments are likely to take place.



Photo: FAO/Wim Mullié

Child with empty pesticide container, Niger.

## Regional Training for Polluted Sites Inventory and Clean-up

In May, two participants per country from Chad, Mali, Mauritania, Niger, and Senegal were trained in the techniques of inventory, soil sampling and risk assessment of sites that had been used during the Desert Locust campaign. Forms developed for the Africa Stockpiles Programme (ASP) were adapted for the inventory of polluted sites where only residues were present. The sites to be surveyed were located where planes or vehicles had been loaded or where large stocks of pesticides and empty containers were stored.

Since the programme had to be completed before the rainy season, teams assisted by the FAO Headquarters and Sub-regional Desert Locust Office went out into the field immediately after the training. Mauritania was already ahead and its inventory has now been completed. At the most polluted sites soil samples were taken for analysis and remedial measures were initiated, such as a clean-up of the agricultural compound in Kiffa. Meanwhile Niger and Senegal have finished their inventories. A few Senegalese sites, such as the airport of Podor, where 2, 500 litres of insecticide drained into the soil, were heavily contaminated and will need comprehensive follow-up. In Niger four sites were situated close to schools and particular attention was paid to sample the areas where pesticides might have leaked, in order to proceed with decontamination. Children were seen filling empty pesticide containers with drinking water. The national crop protection service was alerted and the need for renewed efforts to collect empty containers and an extensive sensitizing campaign were discussed. Such an awareness raising programme will be founded under the umbrella of the World Bank's Africa Emergency Locust Project and be executed during the upcoming months. Chad and Mali are currently working on their inventories and results are expected shortly.

Around the same time as QUEST trainings were carried out in The Gambia, exercises covering the same topics were organised in Guinea, Guinea-Bissau and Cape Verde. In these countries the general outline of the training programme was similar to that of the Gambia, but special focus was given to particularities with reference to their ecology. Guinea and Guinea-Bissau have a rich coastal biodiversity and further inland there are hilly and mountainous areas. The Cape Verde is an archipelago with a particular avifauna with several endemic species. Due to these characteristics, Desert Locust control in these countries may have to be conducted in a different manner than is usual in the Sahel.

The training courses in Guinea-Bissau and Cape Verde had to be conducted in Portuguese and Creole, which necessitated translation of the training materials and sometimes simultaneous translation. Participation of female technical staff was higher here than in previously covered countries.

These National QUEST trainings were funded by multilateral project funded by Spain.

QUEST training - sorting of insects, Guinea.



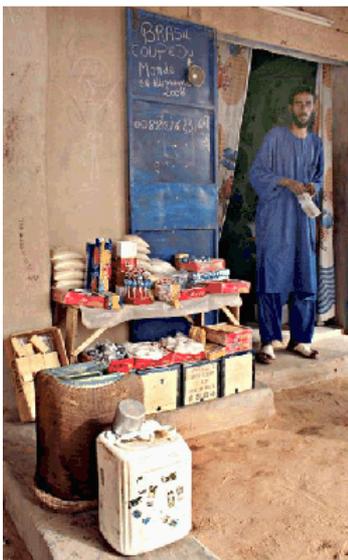
QUEST training - spraying a field, Guinea Bissau.

QUEST training - experimental treatment, Guinea.



QUEST Training in the use of a GPS. Guinea-Bissau.

Ignorance of the dangers connected with untreated polluted sites and the use of empty pesticide containers is evident all over the region that was covered by the 2004-2005 Desert Locust campaign. The following photographs indicate the gravity of the problem.



Empty pesticide container serving as public drinking reservoir at a store in Tillia, Niger.



Empty 200 litres pesticide container used for drinking water in Tassara, Niger.



Child using empty pesticide containers to fetch water at the school in Tillia, Niger.



Soil sampling at Tahoua airport, Niger. The site was in use as a public thoroughfare.

All photos on this page: FAO/Wim Mullié.

### Clive Elliott has retired

In June, Dr. Clive C.H. Elliott retired as Senior Officer for FAO's Locusts and Other Migratory Pests Group, Plant Production and Protection Division (AGPP).

Officer-in-Charge for the Locust Group at AGPP is Niek van der Graaff, Chief of FAO's Plant Protection Service.

### Funding Update

- The total budget approved for locust control operations is US\$80.5 million.
- To date, funds received amount to US\$75.1 million, of which US\$68.9 million came from donors and US\$6.2 million from FAO.
- US\$60.4 million (80 percent of funds received) has been spent for locust control operations.
- Out of the balance up to US \$ 6.4 million will be used for continuation of locust related activities during 2006/2007.

### Overall Funding (US\$) of FAO Locust Programme as of 08.09.2006

European Commission	30 311 520
FAO	6 197 391
France	5 847 809
Netherlands	5 612 050
Canada	4 920 572
Italy	4 053 539
United States of America	3 349 041
Saudi Arabia, Kingdom of	3 000 000
Japan	2 978 339
United Kingdom	2 568 250
African Development Bank	2 000 000
IFAD	1 471 000
Germany	1 214 067
Islamic Development Bank	1 000 000
Sweden	930 944
Spain, Kingdom of	907 410
Belgium	653 099
Norway	642 389
Finland	640 900
Austria	533 200
Multilateral	346 999
Portugal	331 900
Agence Intergouvernementale de la Francophonie	265 182
Luxembourg	255 400
Australia	178 537
Ireland	122 910
Greece	65 359
UNDP	52 800
Czech Republic	40 004
Grand Total	80 490 611

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

### Country briefs on the locust situation and emergency assistance provided through FAO

Briefs of locust-affected countries have been updated and are available at:

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

FAO's brochure "**Fighting the locusts ..... safely - Pesticides in Desert Locust control: balancing risks against benefits**" may now be viewed in Arabic, English and French versions at:

[http://www.fao.org/ag/locusts/common/ecg/812\\_en\\_FightingDLsafelyE.pdf](http://www.fao.org/ag/locusts/common/ecg/812_en_FightingDLsafelyE.pdf)

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