

**REPORT**

Rome,  
Italy  
11-15  
September  
2006

# **FAO Desert Locust Control Committee**

Thirty-eighth Session



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Report of the

**FAO Desert Locust Control Committee**

38<sup>th</sup> Session

Rome, 11 – 15 September 2006

Food and Agriculture Organization of the United Nations  
Rome, 2006



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## LIST OF ACRONYMS

ADB	African Development Bank
AELGA	Assistance for Emergency Locust and Grasshoppers Abatement (USA)
AELP	Africa Emergency Locust Project
AGP	Plant Production and Protection Division (FAO)
AGPP	Plant Protection Service (FAO)
AGRHYMET	Regional Training Centre for Agrometeorology and Operational Hydrology and their Applications
CERF	Central Emergency Revolving Fund (UN)
CIRAD	<i>Centre de coopération internationale en recherche agronomique pour le développement</i> (Montpellier, France)
CILSS	<i>Comité Permanent Inter-Etats de Lutte Contre la Sécheresse dans le Sahel</i>
CLAA	<i>Centre de lutte anti-acridienne</i> (Nouakchott, Mauritania)
CLCPRO	FAO Commission for Controlling the Desert Locust in the Western Region <i>Commission de Lutte Contre le Criquet Pèlerin dans la Région Occidentale</i>
CR	Central Region
CRC	FAO Commission for Controlling the Desert Locust in Central Region
DGPS	Differential Global Positioning System
DLCC	Desert Locust Control Committee
DLCO-EA	Desert Locust Control Organization for Eastern Africa
DLIS	Desert Locust Information Service (FAO)
DLCCTG	DLCC Technical Group
EC	European Commission
ECLO	Emergency Centre for Locust Operations
ELO	EMPRES Liaison Officer
eLocust	System of electronic data collection and transmission
EMPRES	Emergency Prevention System for Transboundary Animal and Plant Pests and Diseases (FAO)
EMPRES/CR	EMPRES Central Region Programme
EMPRES/WR	EMPRES Western Region Programme
ETOP	Emergency Transboundary Outbreak Pest
FAO	Food and Agriculture Organization of the United Nations
FPMIS	Field Programme Management Information System
GPS	Global Positioning System
ICIPE	International Centre for Insect Physiology and Ecology (Nairobi, Kenya)
IDA	International Development Association (WB)
IEE	Independent External Evaluation
IGR	Insect Growth Regulator
IITA	Institute for Tropical Agriculture

IPM	Integrated Pest Management
LCU	Locust Control Unit (national)
LOCUSTOX	Project on Environmental Impact of Locust Control (Dakar, Senegal)
NPO	National Professional Officer
NTE	Not-to-exceed (date)
OP	Organophosphates
PAN	Phenyl-aceto-nitrile
PPD	Plant Protection Department (National)
PRG	Pesticide Referee Group
PRIFAS	<i>Unité d'acridologie opérationnelle du programme protection des cultures, Cirad-amis</i> (Montpellier, France)
QUEST	Quality and Environmental Survey of Treatments
RAMSES	Reconnaissance and Management System of the Environment of <i>Schistocerca</i>
RP	Regular Programme (FAO)
SFERA	FAO Special Fund for Emergency and Rehabilitation Activities
SOP	Standard Operating Procedures
SWAC	FAO Commission for Controlling the Desert Locust in South-West Asia
TAC	DLCC Technical Advisory Committee
TCE	FAO Emergency Operations and Rehabilitation Division
TCP	FAO Technical Cooperation Programme
TF	Trust Fund
TG	Technical Group
ToT	Training of Trainers
ULV	Ultra Low Volume
UN	United Nations
USAID	United States Agency for International Development
WR	Western Region
WU	Wageningen University

## LIST OF RECOMMENDATIONS

1. The ToT approach should be continued and should focus on practical exercises. National Master Trainers should be staff of the Locust Control Units in the front-line countries. The national training programmes should cover the staff of all relevant agricultural and other national units that would participate in locust control. These relevant units should be identified in the context of national contingency plans.
2. All parties should only use/purchase those pesticides listed for Desert Locust control by the Pesticide Referee Group, and that meet national regulatory requirements; pesticides should be properly labelled in the language of the recipient country; locust-affected countries should promote the registration of more pesticides for Desert Locust control in order to increase the choice.
3. ULV organophosphate pesticides should be used for locust control only by properly trained staff who could follow best practices and whose health could be monitored, and should NOT be provided to farmers.
4. Plastic containers should NOT be used for locust pesticides.
5. FAO and countries should negotiate terms with pesticide companies for contracts that included the removal of empty containers.
6. Donors should continue to support the development of alternatives to conventional chemical pesticides.
7. Locust-affected countries should cooperate fully with ICIPE, IITA and FAO and other relevant institutions to test these products.
8. Locust-affected countries that already had QUEST teams should institutionalize them in order to ensure their availability when locust control occurs,
9. FAO should investigate the feasibility of extending the QUEST approach to other regions.
10. All aircraft used for locust spraying should be equipped with GPS Track Guidance systems for precision spraying.
11. FAO, in close consultation with countries, World Bank and the EC, should explore the possibilities for contractual arrangements with pesticide companies that would ensure that locust pesticides were available in an emergency situation, at short notice, in the required quantity, and could be delivered to the required location.
12. A Working Group should be established to review the recommendations of the multilateral Independent Evaluation Mission that were in the second and third categories, including recommendations 7, 23a), and 26a) and b), and that it should have the same composition as the one that had worked during the Session. All the participants agreed to be part of the Group
13. The Evaluation Mission Steering Committee should be requested to monitor the progress of the implementation of the recommendations. The Working Group would report to it, as would other parties involved in implementing recommendations. The Committee should meet regularly in order to fulfil its role.
14. A task force should be established to design a Desert Locust Emergency Fund. The task force will consist of about six people representing locust-affected countries (which would eventually benefit from the Fund), the donors and FAO.
15. The task force will: i) draw up terms of reference for a study that will identify viable options, including those available in the UN system, Regional Institutions, or the Banks, for design and governance of a Desert Locust Emergency Fund; ii) identify resources to undertake the study; and iii) present findings of the study to the next DLCC meeting.



16. The process of preparing the study will include consultation with representatives of stakeholders relevant to the Desert Locust Emergency Fund (benefiting countries, donor agencies, FAO).
17. The Task Force will consist of:
  - A representative of the EC
  - A representative of the WB
  - Mr Garba of Niger
  - Mr Ould Babah of Mauritania
  - Mr Khalil of Sudan
  - A representative of FAO
18. The DLCC TG should be replaced by consultation with technical experts using Internet-based tools (emails, fora, networks, etc.) and, where appropriate, face-to-face expert consultation. The consultation process would be organized by the Secretariat. It was requested to ensure maximum transparency of the selection of the experts, with special attention to the affected countries.
19. The Director-General of FAO should:
  - officially contact the countries concerned and should appeal to them to settle their annual contributions to the DLCC Trust Fund for 2006, and should invite them to propose a schedule for settling the total amount that they may have in arrears;
  - officially contact the Government of Nigeria and should request it to settle the arrears that existed at the time of its withdrawal from the DLCC.

## INTRODUCTION

1. At its thirty-seventh Session, held in Rome from 22 to 26 September 2003, the FAO Desert Locust Control Committee (DLCC) agreed that the thirty-eighth Session should be held in Rome on a date to be determined by the Director-General of the Food and Agriculture Organization of the United Nations (FAO). The dates chosen were 11 to 15 September 2006 and the Director-General accordingly issued invitations to all member countries and relevant organizations likely to be interested in locust management.
2. The List of Participants is given in Annex 1.
3. The 38th Session was opened by the Assistant Director-General of the Department of Agriculture, Biosecurity, Nutrition and Consumer Protection, Mr A. Müller. He welcomed all participants to FAO and to Rome. He underlined the importance that FAO attaches to international cooperation on Desert Locust management, as shown by its support for the DLCC and the three Regional Locust Commissions, and through the Director-General's Special Programme EMPRES (Emergency Prevention System for Transboundary Animal and Plant Pests – Desert Locust component).
4. The Assistant Director-General recalled that the DLCC was established in 1955 and it had become the practice to meet every two years, or more often during an emergency. The last meeting, an Extraordinary Session, was held at the height of the recent Desert Locust emergency in November 2004. Fortunately the locust situation was calm again, as a result of both the very extensive control operations in which 13 million hectares of infestations were sprayed and unfavourable weather conditions in the winter/spring 2004-2005. Mr Müller felt that improved techniques during the campaign achieved better early warning and spray applications compared with the previous campaign in the 1980s. Increased attention to human health and environmental issues had also brought benefits both during and after the control operations, with clean-up operations such as recovery and disposal of empty pesticide containers, and training programmes.
5. The Assistant Director-General said that despite efforts made to coordinate pesticide deliveries, lack of information, insecurity and lack of understanding had led to an excess stock of six million litres of pesticides in the Western Region. Some donors had agreed that unspent funds could be used to ensure that these pesticides were stored under optimal conditions. FAO and the World Bank had also sponsored a workshop on how best to tackle this problem.
6. It was noted that some routine issues were on the Agenda of the 38th Session, but a major focus was to review the recent locust upsurge, including the results of the Multilateral Independent Evaluation Mission. FAO had already taken note of the recommendations directed at the Organization and taken action on many of them. It was also establishing a Crisis Management Unit that would cover food safety and animal and plant health, and would ensure clear lines of responsibility and command. He also informed the meeting that FAO was addressing emergency preparedness by developing better contingency planning mechanisms.
7. The Assistant Director-General said that the Evaluation Mission could not cover all the technical aspects of the campaign, and that a study of the key events that led to the upsurge was being made. He strongly recommended that the DLCC consider making arrangements for an in-depth independent technical review of the forthcoming study and of the Desert Locust management strategy in general. The challenge remained as to how to improve the response to Desert Locust emergencies in the future. The meeting should carefully consider whether the present system of locust organizations, commissions and the DLCC provided sufficient elements for future cooperation and mutual assistance or if change was needed.
8. The Assistant Director-General concluded by wishing participants a successful meeting and looked forward to the recommendations to be produced.

9. Mr Müller presented a medal to Mr A. Hafraoui in recognition of his important contribution to Desert Locust management as Senior Officer of the Locust and Other Migratory Pest Group from 1992 to 2004, especially in respect of the foundation of the Commission for Controlling the Desert Locust in the Western Region (CLCPRO).

#### **OFFICERS OF THE SESSION**

10. The following officers were elected:

Chairman:	Mr Allah Rakha Asi (Pakistan)
Vice-Chairmen:	Mr Said Ghaout (Morocco)
	Mr Yene Belayneh (USA)
Drafting Committee:	Mr Mohamed A. Ould Babah (Mauritania)
	Mr Rabie Khalil (Sudan)
	Mr Yene Belayneh (USA)

#### **AGENDA**

11. The Agenda, as adopted, is given as Annex II.

#### **PRESENTATIONS, DISCUSSIONS AND RECOMMENDATIONS**

##### The Desert Locust Situation (December 2004 to August 2006) and Forecast to Winter 2006

12. The FAO Locust Information Officer, Mr K. Cressman, gave a comprehensive presentation on the Desert Locust situation from December 2004 to August 2006 and provided a forecast of the potential developments during winter 2006.

13. He said that the Desert Locust upsurge in the Western Region began to decline in late 2004 due to intensive control operations and the unfavourable weather and ecological conditions in Northwest Africa. Consequently, swarms did not form during the spring of 2005 in Morocco or Algeria nor did they invade the Sahel in the summer. Several Southern Circuit swarms that over-wintered in the Guinea highlands moved east across the southern Sahel in the spring of 2005 and bred along both sides of the Chad-Sudan border during the summer. In the Central Region, control operations were carried out against swarms that invaded northwest Egypt and reached the Red Sea coastal plains in late 2004 and early 2005. Operations were also carried out against Southern Circuit swarms and their progeny in eastern Chad, western Sudan and Ethiopia during the summer of 2005. By autumn, the upsurge had ended in both regions. More than one million ha were treated in December 2004 and, thereafter, less than 800,000 were treated in 2005 compared to more than 11 million ha between October 2003 and November 2004. In South-West Asia, a small outbreak developed during the summer of 2005 along the Indo-Pakistan border. About 18,000 ha were treated by ground teams in India and Pakistan and the situation returned to normal by the end of the year. During the first half of 2006, the situation remained calm in all regions, and only limited control operations were carried out in Algeria and Libya. So far this summer, low numbers of locusts were present in Mauritania and Niger as well as along the Indo-Pakistan border.

14. Concerning the forecast for the next six months, the Locust Information Officer pointed out that much depends on the timing and scale of rainfall in the summer and winter breeding areas. Good rains have fallen in many summer breeding areas while heavier, more unusual downpours occurred recently in northwest Mauritania, northern Niger, eastern Ethiopia, on the Red Sea coast in Saudi Arabia and along the Indo-Pakistan border. Consequently, conditions are expected to remain favourable for breeding longer than in most years in these areas and there is a risk that a few localized outbreaks could develop later this year. (See Annex III for more details.)

### **Comments and additions from the locust affected countries**

15. The participants thanked the Locust Information Officer for his informative presentation and raised several questions regarding recently observed exceptional climatic events such as those in India, Libya and Niger. The question of the effect that global climate change was having on the dynamics of the Desert Locust was raised. The Locust Information Officer replied that climatic change certainly affects the behaviour of the Desert Locust. It is difficult to foresee how this may evolve and the topic would require specific research. He recommended that the locust situation in the areas where unusual rainfall occurred needed to be closely observed and reported by the affected countries. The national Locust Control Units (LCUs) must remain sufficiently flexible to avoid surprises.

16. Other questions from the participants were related to the information system, whether the information received from countries is sufficient to prepare realistic forecasts, and which aspects were the major constraints. The Locust Information Officer referred in his reply to new technologies which have been introduced through the EMPRES programmes into national programmes, such as the Reconnaissance and Management System of the Environment of *Schistocerca* (RAMSES), real-time transfer of field data, remote sensing, etc. These had contributed to steadily improving the quality and quantity of reports received, but further efforts were needed to keep pace in improving national locust information systems. He referred to political and structural constraints that affect survey operations in some countries, and pointed out that it is important to provide the national Locust Control Units with sufficient autonomy, particularly concerning their own financing to assure regular surveys.

17. The delegate from Mauritania confirmed that forecasts provided by FAO were reliable and in most cases provided a reasonable picture of the anticipated situation. Other delegates from the affected countries endorsed new technologies because they significantly helped management to be better informed of the actual situation in the field and to make better decisions on the required actions.

18. The Chief AGPP, Mr N. Van der Graaff, emphasized the importance of the meeting for the future of Desert Locust management. He pointed out that important decisions needed to be made by the meeting, which should include all aspects of locust control including structural issues, and that the strategies practised needed in order to be carefully analyzed and reviewed by the participants to come up with feasible recommendations on how to improve the Desert Locust management system.

### Desert Locust emergency 2003-2005

#### **Review of the control operations undertaken**

19. The FAO Locust Information Officer, Mr K. Cressman, provided a review of the control operations conducted during the emergency 2003-2005. During the upsurge, 23 countries treated some 13.2 million ha of Desert Locust infestations of which more than half were carried by air. Nearly all of the operations were conducted in the Western Region, specifically in Northwest Africa. Morocco and Algeria each conducted sizeable campaigns in the winter/spring of 2003/04 and autumn/winter of 2004/05. Smaller campaigns were carried out during the summer in ten Sahelian countries. Most of the operations were initially ground-based but, as locust infestations increased in size and number, an increasing number of aircraft was used and accounted for between 15% and 88% of the total area sprayed by national teams. These operations, combined with unfavourable weather conditions, brought the upsurge to an end. Numerous difficulties were encountered during the control campaigns: ability to survey and treat all areas, collection and transmission of control results, available resources and qualified staff, and logistical support to aerial operations.

20. In the discussions that followed, several delegates raised the question of the environmental impact of aerial spraying. It was pointed out that environmental issues were the subject of agenda item 6(d).

21. The delegate of India said that aerial spraying in his country was now rarely practised because of pressures to follow the Integrated Pest Management (IPM) approach. India would need help, in an emergency, to identify external sources for aerial spraying.

22. The Australian delegate said that substantial aerial locust control operations were undertaken in Australia despite the strict regulatory environment. Detailed maps of the areas sprayed and the amount of pesticides used were mandatory, as well as being essential for monitoring requirements. He underlined the importance of using aircraft early in an upsurge to confirm the extent of an infestation, especially when exceptional rains occurred which might incapacitate ground teams. Australia had standing arrangements for aircraft contracts that allowed them to be accessed at short notice when needed. He added that in his experience, barrier treatments applied aurally were an important weapon in dealing with the early stages of an upsurge and should be brought again into use for the Desert Locust.

23. The delegate of Senegal said that his country had acquired two advanced spray aircraft for locust control during the emergency but was learning that keeping the aircraft operational involved complex logistical problems. Possibly, in the future, use could be made of aircraft in the region.

24. The delegate of Morocco said that the EMPRES Programme seemed to be the best means by which the quality of data collection and transmission could be improved, and the training programmes EMPRES had organized had already had an impact. He mentioned that Morocco had its own Air Unit of nine aircraft and could also access helicopters from the Army. These aircraft had been critical in protecting the Souss Valley, which accounts for around 70% of Morocco's horticultural exports. When there were no locusts, the aircraft were used for other purposes such as fire fighting and coast guard tasks. In an emergency, Morocco hired extra aircraft from as far away as South Africa.

25. The delegate of Niger said that 55% of control in his country had been aerial, which had been effective especially against swarms. However, there had been many instances where locusts had laid eggs in crops close to villages and these could only be tackled using hand-held sprayers, with farmers to do the work.

26. The delegate of France suggested that there should be more synergy with other information bodies such as the Permanent Interstate Committee on Drought Control in the Sahel (CILSS) and the Regional Training Centre for Agrometeorology and Operational Hydrology and their Applications (AGRHYMET) in order to improve locust information and environmental actions during control operations.

27. The delegate of the United States asked if there was a cost/benefit analysis of helicopter versus fixed wing aircraft during the 2003-2005 campaign. In his reply the presenter referred to the FAO DL Guidelines. The US delegate also asked the presenter if the 21 and 22 aircraft deployed by Mauritania and Senegal, respectively, during the 2003-2005 campaign also included the six aircraft that the United States Agency for International Development (USAID) deployed in 2004 to support control operations in the two countries. The response to the first question was that FAO has produced guidelines on the use of various types of aircraft, and it was confirmed that the total deployed included the USAID aircraft.

28. Several participants commented on the feasibility of using aircraft for air-to-air spraying. This had been tried in Sudan in the 1980s with some success, but tests in Morocco had suggested it was risky, and difficult to evaluate because of the mobility of the target. It was also noted that successful aerial spraying required a great deal of logistic support, suggesting that countries should not accept offers of spray aircraft if they did not have the means to support them. EMPRES should organize training of aircraft support teams so that they would be prepared when the time came.

29. The delegate from Norway said that since aerial spraying was so expensive, it should only be used if and when needed. He mentioned the case of Afghanistan where all the

spraying was done by local communities with successful results. This point was confirmed by the delegate from Afghanistan. The Secretariat pointed out that the locust species in Afghanistan was the Moroccan Locust and its ecology was quite different from that of the Desert Locust, allowing hand spraying to be effective. FAO had delivered only pyrethroids and Insect Growth Regulators (IGRs) for the operations.

30. It was concluded that a number of the issues raised were too complex to be resolved by the DLCC and should be discussed by suitable technical committees, including the DLCC Technical Group, the Pesticide Referee Group or by expert consultations. Topics included: avoidance of using farmers in locust control operations or use only in certain specific circumstances; air-to-air spraying.

**Review of the assistance provided to affected countries multilaterally and bilaterally, and made available from national sources**

31. The Locust-related Emergencies Coordinator, Emergency Operations Service (TCEO), Ms H. Niggemann, gave a presentation on the assistance provided by the donor community, accounting for 27 donors, who contributed US\$ 80 million to FAO, of which 50% represented substantial contributions of more than US\$ 1 million, including FAO's own funding through the Technical Cooperation Programme (TCP) of up to US\$ 6.2 million. Funds were mainly used for procurement of pesticides, vehicles, sprayers, communication equipment, and flying hours, but also for technical expertise, environmental activities such as collection and disposal of empty pesticides containers, and the operation of the Quality and Environmental Survey of Treatments (QUEST) teams.

32. The expenditure as of August 2006 amounted to US\$ 60 million of the total 80 million donor budget. Therefore, a balance of US\$ 20 million remained, while the balance in cash was US\$ 14 million. This amount included unspent funds from various donors, of which the EC represented the largest. She informed the Meeting that reallocation of unspent donor funds was subject to agreement from the donors. It was noted that the EC could not reallocate funds due to its internal regulations. FAO funded US\$ 6.2 million through TCP, of which US\$ 0.5 million remained unspent and were returned to TCP. Provided donors' agreement, it was estimated that as of August 2006 some US\$ 2.1 million remained available for further use. USAID and Italy agreed to use US\$ 0.5 million for the coordination unit in Dakar. Italy also agreed to use funds, initially allocated for locust control, for agricultural rehabilitation activities in Senegal, Mauritania and Mali.

33. She added that this multi-donor assistance had to be viewed within the overall support provided to the Desert Locust campaign of estimated US\$ 280 million as of September 2006<sup>1</sup>. The entire support comprised multilateral assistance of US\$ 80.5 million channelled through FAO, US\$ 149 million of national resources and US\$ 50.5 million provided through bilateral assistance.

34. Despite of difficulties faced in managing the funds, she advocated that FAO was capable of appropriately administering them. The presentation highlighted that FAO was administering the funds according to its rules implying that budgets agreed with donors had to be respected, even though budget revisions were occasionally required. Within this context she mentioned that some donors did not allow enough flexibility to respond rapidly to the actual needs of the countries in a rapidly evolving situation. In order to be in better position to do so, the possibility of a "pool" or "programme" approach should be taken into consideration for future events. She pointed out that, only a few donors such as USAID allowed FAO's suggested reallocation of funds for agricultural relief and rehabilitation activities to countries affected by locusts during the 2003-2005 campaign.

35. In discussions that followed, the representatives from the donor community welcomed the detailed report, but queried why financial details had not been provided earlier. The delegate from the World Bank noted that the report only covered contributions provided

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<sup>1</sup> according to the findings of Evaluation Mission of the Desert Locust Campaign 2003-2005

through FAO, but did not include the support from bilateral donors. The observation was supported by other participants saying that the efforts by the countries themselves should have been included.

36. It was noted that it was not easy for FAO to obtain all the requested details, but that the campaign evaluation mission had attempted to estimate the overall cost and investments by the different parties. The meeting was also informed that details on the expenditures under the various FAO projects were available on the FAO Field Programme Management Information System (FPMIS) website of FAO.

37. The delegate from Norway particularly appreciated the substantial investment in environmental activities. He pointed out that this component was increasingly important for all development projects and that extension of Norway's project could be provided upon request. The Locust-related Emergencies Coordinator welcomed a more flexible approach with regard to the not-to-exceed (NTE) dates, which would allow sensible disbursement of the remaining funds of US\$ 6.5 million for environmental activities.

### **Review of the training provided to affected countries**

38. The Locust Officer, Ms A. Monard, gave an overview of the training approach adopted by the Western Region. Early in the emergency it had become apparent that there was a need to improve the technical knowledge and skills of staff involved in Desert Locust operations. In order to strengthen national training capacities in the Western Region, it was decided to introduce the training-of-trainers (ToT) concept so that better and more frequent training opportunities could be provided to local staff involved in the locust operations. A first regional Master Trainers training course was conducted in Niamey in spring 2005 for 21 trainees from 10 Sahelian countries (three from each of the front-line countries and one from each of the Southern Circuit). During the session the modules on Desert Locust bioecology, survey and data management, control, protection of the human health and environment, and campaign management were standardized. Upon return to their countries, each Master Trainer organized national training courses for up to 30 plant protection staff. The impact of the courses had been assessed separately at a later stage.

39. Ms Monard indicated that the trainees recognized the need for practical training and the usefulness of the approach. However, she also highlighted the difficulty in maintaining trained staff in their positions, and suggested creating a pool of trained staff not belonging to the Desert Locust Units, who could be recruited to join the DL teams in emergency operations and should receive regular refresher training.

40. The Secretary of the Commission for Controlling the Desert Locust in the Western Region (CLCPRO), Mr T. Benhalima, stressed the importance of continuous training also during recession periods in order to enable the national survey and control teams to react with utmost efficiency once an outbreak or upsurge occurred.

41. The difficulty of keeping trained personnel long enough in service was raised by the delegate from Morocco.

42. The delegate from Mali underlined the need for professional personnel during the operations in order to conduct campaigns more efficiently and informed the meeting that during the emergency people with no locust background had been recruited on an ad hoc basis to join the operations. For that reason he strongly recommended pursuing the training approach and it should be ensured that the Master Trainers were part of the national Locust Units.

43. The delegate from the Netherlands added that the training programme and schedules should be considered in the context of the national contingency plans.

44. With regard to the adoption of the training concept by the Central and Eastern Regions, the training approach had already been followed with good results in both Regions since the 1990s. The delegate from Sudan mentioned that training had been handled entirely

by national Master Trainers for many years, with good results, and requested additional Master Trainer Training kits for their intensive national training programme.

45. The DLCC recommended that the ToT approach should be continued and should focus on practical exercises. National Master Trainers should be staff of the Locust Control Units in the front-line countries. The national training programmes should cover the staff of all relevant agricultural and other national units that would participate in locust control. These relevant units should be identified in the context of national contingency plans.

### **Review of human health and environmental issues**

46. Environmental concerns related to Desert Locust control were addressed in the presentation by the Environment Officer, Mr J. Everts. Concerns were derived from large-scale pesticide applications and their impact on the ecosystem diversity. Furthermore the majority of pesticides used had low selectivity, with inevitable side-effects on non-target organisms.

47. Insufficient consultation between donors and FAO contributed to an oversupply of pesticides in some cases.

48. In order to better coordinate actions and to develop a common strategy, a workshop on pesticide management was held in Bamako, Mali in May 2006. The workshop participants had made various important recommendations with regard to the use and safe handling of pesticides. FAO, in collaboration with country-led World Bank projects, initiated a programme to improve pesticide storage facilities of front-line countries.

49. The Environment Officer referred to the common practice of local people of using empty pesticide containers to store food and water with negative consequences for their health. To reduce the risk of misuse, FAO, in close collaboration with the local authorities of eight countries, had made great efforts to collect and destroy empty containers in drum rinser/crushers. He further noted that no appropriate solutions had yet been found for the disposal of plastic containers.

50. The presenter pointed out that the use of alternative pesticides could significantly reduce the unwanted side-effects of locust control. The entomopathogen *Metarhizium anisopliae* var. *acridum* (Green Muscle®) and the Desert Locust pheromone phenyl-acetonitrile (PAN) offered promising opportunities. However, he noted that the low use of these alternatives was partially attributed to lack of efficacy data under various conditions, limited availability, and the high price of some products. FAO, in collaboration with the World Bank, was planning to conduct an international workshop on these issues in Dakar, Senegal in February 2007, with the aim of overcoming the practical obstacles and of creating awareness. It was anticipated to conduct field trials with these products in collaboration with international research institutes such as ICIPE and IITA and the national Locust Control Centre of Mauritania.

51. He further explained the role of the specialized QUEST teams in monitoring the impact of control operations during the campaign. The staff of the QUEST teams had been recruited from the Ministries of Agriculture, Health and Environment. The QUEST teams did not observe any incident of fatal poisoning due to chemical pesticide during the campaign, but it was noted that a few staff regularly involved in handling pesticides had to be taken off the work in order to recover from mild intoxication. In addition, numerous non-target terrestrial invertebrate casualties were observed during the campaign. New biomarkers are being developed to allow the measurement of the toxic effects of a wider range of pesticides including pyrethroids.

52. The use of differential GPS track guidance systems in spray aircraft had the potential to reduce the amount of pesticides used and assure more precise application. The system was being adapted for use by ground teams.

53. The DLCC recommended: all parties should only use/purchase those pesticides listed for Desert Locust control by the Pesticide Referee Group that meet national regulatory



requirements; pesticides should be properly labelled in the language of the recipient country; locust-affected countries should promote the registration of more pesticides for Desert Locust control, in order to increase the choice.

54. The delegate from Mauritania considered that farmers should not use Ultra Low Volume (ULV) pesticides under any conditions. The delegate from Afghanistan asked what were the alternatives if farmers could not use ULV pesticides, but it was clarified that in Afghanistan teams of sprayers were formed from the local community, received training and were supervised by a professional plant protection officer. Furthermore the pesticides used were relatively safe pyrethroids and IGRs. The delegate from India said that it was ill-advised for farmers to use ULV pesticides since it was impossible to test the health of a large number of farmers. The EC delegate said that he did not feel that farmers were the best people to handle pesticides, but the matter should be addressed on a case-by-case basis. It was also noted that the main concern was organophosphates.

55. The DLCC recommended that ULV organophosphate pesticides should be used for locust control only by properly trained staff who could follow best practices and whose health could be monitored, and should NOT be provided to farmers.

56. Concerning storage and stocks, the DLCC endorsed the conclusions of the workshop on pesticides held in Bamako, Mali, in May 2006.

57. Several comments were made on the disposal of empty pesticide containers. The delegate of Mauritania said that, prior to the delivery by FAO of the combined rinser/crusher, many pesticide drums had been simply crushed and remained a disposal problem because they were contaminated. It was noted that such drums had to be treated in a similar way to obsolete pesticides. The rinser/crusher could be used for any size of metal drum. The delegate of Niger suggested that pesticide companies should be asked not only to remove empty drums but also excess pesticides that were no longer needed. The delegate of Libya said that FAO should be requested to negotiate with industry on the removal of empty drums. On the other hand, rinser/crusher machines for metal drums, followed by recycling, solved the problem.

58. In conclusion, the Secretariat noted that good progress had been made in installing rinser/crusher equipment in the Sahel and this would be extended further in the region.

59. The DLCC recommended that:

- plastic containers should NOT be used for locust pesticides, and
- FAO and countries should negotiate terms with pesticide companies for contracts that included the removal of empty containers.

60. On the development of alternatives, the delegate of Australia asked for clarification on the trials carried out in Algeria and Niger. It was explained that the Algerian report was available on request, and described a trial on hopper bands that was 100% successful. The report on the Niger trial was nearly completed and reported a 90-95% kill, combining the effect of the Green Muscle® pathogen and predation by birds.

61. The delegate of Norway said that his country had been supporting trials on alternatives for years and was willing to fund more, provided that the objectives were practical and realistic. The delegate from the Islamic Development Bank said that the Bank was willing to support a regional initiative on producing the *Metarhizium* pathogen if a suitable producer could be identified. The intention was to create a supply of *Metarhizium* that could benefit all countries in the region.

62. The delegate of Morocco said that the experience in his country was that IGRs presented the best option for an alternative to conventional pesticides, including the possibility of their being used in barrier treatments. Green Muscle® still had slow action and problems with shelf-life/stability. The Secretariat noted that there was good reason to be positive about Green Muscle®, phenyl-aceto-nitrile (PAN) and IGRs.

63. Accordingly, the DLCC recommended that:
- donors should continue to support the development of alternatives to conventional chemical pesticides, and
  - locust-affected countries cooperate fully with ICIPE, IITA and FAO and other relevant institutions to test these products.

The DLCC requested FAO to provide a full report on trials with alternatives at the next Session.

64. Concerning good practices in the application of pesticides, the DLCC called on all parties to implement “good practices” as described in the Desert Locust Guidelines. Furthermore the DLCC recommended that FAO should continue its efforts, with donor assistance, to create biomarkers for locust pesticides other than organophosphates and carbamates.

65. Regarding the monitoring of control operations, it was agreed that the primary responsibility for institutionalizing and maintaining QUEST teams lay with the locust-affected countries. FAO should draw the attention of the concerned countries to the importance of QUEST teams. The Secretariat explained that the institutionalization process varied from country to country. During recessions, the team members returned to their hospitals, laboratories or other institutions, but it was important to arrange refresher training periodically and for them to be released for QUEST duties at that time. It was also felt that there should be a link between locust teams and QUEST teams, to ensure sustainability of the later.

66. The DLCC recommended that:
- locust-affected countries that already had QUEST teams should institutionalize them in order to ensure their availability when locust control occurs, and
  - FAO should investigate the feasibility of extending the QUEST approach to other regions.

67. The DLCC further recommended that:
- all aircrafts used for locust spraying should be equipped with GPS Track Guidance systems for precision spraying.

68. Concerning the development of a pesticide bank, several delegates requested clarification of what this meant in practice. The Secretariat explained that it was proposed to have a “virtual bank” in which contractual arrangements were made with pesticide companies through which pesticides could be delivered with a week or two. It was not intended that a stock of pesticide be held in on location, with all the attendant problems of obsolescence. The EC delegate said that contractual arrangements could lead to legal problems and that pesticide companies would probably not even agree to a virtual bank without some attendant costs.

69. The DLCC recommended that:
- FAO, in close consultation with countries, World Bank and the EC, should explore the possibilities for contractual arrangements with pesticide companies, which would ensure that locust pesticides were available in an emergency situation, at short notice, in the required quantity, and could be delivered to the required location.

### **Report of the multilateral Independent Evaluation Mission**

70. The Chairman of the Steering Committee, the Ambassador of the Netherlands, Mr E. Wermuth, briefed the meeting on the background and the objectives of the Evaluation Mission of the 2003-2005 campaign, which had been carried out between November 2005 and March 2006 by a team of seven experts. The Mission had been financed by a wide range of partners (Australia, Canada, the EC, FAO, Finland, the Netherlands, UK, USAID and World Bank) and overseen by a Steering Committee composed of various stakeholders. The

objective of the mission had been to review the operations conducted during the emergency, to identify shortcomings at various levels and to produce solid recommendations, to be presented to the 38<sup>th</sup> Session of DLCC. He referred to difficulties regarding the translation that delayed the preparation of the final mission report in Arabic, English and French. He closed by pointing out that the results of the mission were expected to stimulate necessary improvements in Desert Locust management to reduce the effects of the Desert Locust on vulnerable rural people with an already fragile economy and environment.

71. The Team Leader of the Mission, Mr L. Brader, summarized the various comments and observations received from the stakeholders as a result of completed questionnaires and the draft report. He informed the meeting that remarks, which were felt appropriate, had been incorporated into the final report.

72. With regard to the economic assessment of the campaign *versus* climate factors, he stressed the difficulties the Mission faced in obtaining the necessary data. Despite the uncertain data basis, he believed that the Desert Locust had had significant impact on the livelihood of around eight million people in the Sahelian countries, and added that the control operations had certainly contributed to a decline in the upsurge. He accepted the observation that the findings might in part not always have been as clear and focused as possibly wished. If more time had been available, the report could have been improved.

73. He added that the role of FAO and the donors in responding to the emergency had been addressed in the assessment and that, from the donors' point of view, their reaction to the alerts issued by FAO was considered as adequate given the uncertainty of the possible extent of the threat to people's livelihoods. He concluded that the cost of the campaign, as well as its impact on the environment, would have been far less if the operations could have started earlier.

74. The Mission did not feel it was in a position to prioritize the recommendations, and suggested that they should be handled by the concerned parties.

75. Some comments had been made that three members of the evaluation team, who had been actively involved in the campaign, could not give an unbiased assessment of the events. The Team Leader said that the matter had been discussed at the Steering Committee and it had been agreed that these members should not take part in the evaluation of the operations carried out in their own countries nor be involved in drafting the report.

76. As far as the rapid reaction capacities of the individual countries were concerned Mr Brader noted that the Maghreb countries - Algeria, Libya and Morocco - were comparatively well prepared with consequent better cost efficiency. He added that the whole aspect of cost/benefit assessment remained problematic as it did not seem to be a priority issue for the countries. The total cost of the campaign and rehabilitation was estimated in September 2006 at around US\$280 million plus US\$120 million for food aid, including multilateral, bilateral and national contributions. He further noted that the assistance provided by countries in the affected regions to their neighbours was remarkable and should be institutionalized in order to be even more efficient in the future.

77. The many separate projects, all with their individual objectives and focus, made administration of the funds difficult for both FAO and the beneficiaries and contributed to some misunderstanding (i.e. lack of transparency and visibility) among the stakeholders. From the mission's view, the approach should be modified in favour of a multi-donor programme approach that should also reflect the humanitarian dimension of the Desert Locust problem such as funds for food aid and rehabilitation.

78. The Team Leader noted with satisfaction that the contingency planning aspect and environmental concerns had been picked up actively by FAO, but recommended that certain services operated by FAO could be outsourced in order to render assistance to countries and provide feedback to donors more rapidly.

79. From the mission's point of view, the Secretariat of CLCPRO could have been more involved in the operations if it had been adequately staffed, and recommended that it should be strengthened.

80. The Team Leader pointed out that the Desert Locust represented a constant threat to food security of the affected countries and that multilateral agreements were needed to ensure that this threat could be managed more efficiently. He concluded by saying that despite the many difficulties faced during the emergency, this campaign was shorter than those in the past, which could be attributed to better control operations.

81. Several delegates stated that the Evaluation Mission's Report focused on the Western Region and paid scant attention to the Central Region. Little acknowledgement was given to regional solidarity in the region, particularly the assistance of Saudi Arabia to countries in both the Central and Western Regions. The Team Leader said that the Mission had visited four countries in the Central Region, but since 96% of the control operations were carried out in the Western Region during the 2003-05 campaign, it was inevitable that it received greater attention.

82. The delegate of the EC welcomed the report but regretted that its comments had not been incorporated. In particular, the EC was dissatisfied with the visibility that had been given to its contribution through FAO. The EC also questioned the operational role of FAO in implementing projects. The Mission had presented two options, one to strengthen FAO operationally, the other to outsource project implementation. It was felt that these two options needed serious investigation. The EC had found the Mission's report very useful in identifying weaknesses, and was using it to try to streamline its own procedures. The EC was very interested in establishing a multi-donor Trust Fund for locust management.

83. The delegate of the World Bank complimented the Mission on its work and its report. The report included many recommendations that the Bank felt should be prioritized so that they could be implemented systematically. A concerted follow-up on the report was essential. The Bank also felt that the institutional analysis undertaken by the Mission should be deepened, so that individual responsibilities were clear when the next locust emergency occurs, including the role of FAO, its Commissions, the donors and the affected countries. The Bank considered that the social impact should be borne in mind and prepared for as well as the control operations in future campaigns, so that assistance was brought quickly to farmers who risked losing their livelihood. Finally the delegate said that the affected countries should play a strong role in resolving the issues raised by the Mission.

84. The delegate of Japan said that his country's view was that there should have been better coordination between bilateral and multilateral contributors to avoid duplication and the inefficient allocation of funds that led, as one example, to excess pesticides. He agreed that an institutional analysis was needed, especially in relation to whether FAO should implement projects. Japan felt that the campaign had focused on killing locusts to the detriment of social aspects and the environment, at least initially.

85. The delegate of Norway said that FAO should have explained more clearly at the beginning that fighting locusts was fighting poverty. In respect of research, it was considered that the gap between innovation and the practical requirements of control needed to be narrowed. In this context, Norway was willing to look into further funding. Norway was sceptical of the idea of outsourcing and felt that it would be better to strengthen FAO so that it could fulfil its mandate. Outsourcing would only undermine FAO's capacity.

86. The delegate of France expressed concern at the fate of the report, trusting it would not end up being filed/left to gather dust. The failure to provide the French (and Arabic) versions until the last minute had affected the ability to comment. The delegate considered that the report should lead to two major results: 1) that all partners would be ready and prepared to face the next locust crisis; 2) that it was essential to pursue all efforts to create sustainable preventive control.

87. FAO had prepared a Management Response to the Mission report and copies had been circulated to DLCC participants. In general, FAO welcomed the report especially in respect of the several innovative elements it contained. Some of the data presented were probably statistically doubtful and required further analysis. Although inevitably the report had concentrated on the elements that had gone less well and could be improved, FAO

commended the country teams, who had worked so hard, and noted that the Commission and ECLO staff had worked intensively and far beyond the call of duty. The combined control efforts together with unfavourable weather conditions had led to the collapse of the upsurge.

88. The DLCC should consider what was the role of FAO, the affected countries and the Commissions. FAO was in the process of introducing improvements, one of which was the new Crisis Management Unit. FAO felt that if countries wanted to strengthen the CLCPRO and make it more operational, the members had to agree on this themselves and also decide how to handle the increased funding requirement. The FAO Programme Committee would review the report in two weeks' time.

89. The Team Leader replied that, while the Mission was convinced that FAO was the right body to coordinate locust management, its operational role in project management was questionable. The option that project implementation could be handled by NGOs should be examined. FAO should strengthen its capacity, but if this was not possible, outsourcing should be considered.

90. The Mission had considered the problem of the visibility of donor contributions and had recognized this as an important issue.

91. The socio-economic studies carried out, in which the views of affected farmers had been sought, appeared to be the first time such data had been collected for the Desert Locust. The conclusion that eight million people had suffered and many of them had lost their entire crop was an important finding, and justified the efforts made to contain the problem.

92. The Team Leader agreed that the question of the fate of the report and its follow-up was important. The strengthening of preventive control was clearly the key and the investment in EMPRES seemed fully justified.

93. The possibility of strengthening FAO's capacity was an internal organizational matter, but it was obvious to the Mission that current staffing was inadequate to fulfil its mandate as global locust coordinator and information source.

94. The Mission supported the upgrading of the status of the DLCC itself, such that participants would include higher-level decision-makers as well as those with technical knowledge.

95. The delegate of Australia noted that two previous evaluations of locust campaigns had produced reports, which contained many recommendations that were now being repeated. This suggested that FAO and other partners had not learnt from previous lessons. It was important that this time a proper and systematic follow-up of the recommendations should occur.

96. The delegate of Finland requested that the locust evaluation be used as a case study for the Independent External Evaluation of FAO.

97. The delegate of the Netherlands said that he had found that some of the report's recommendations were good, but was critical of others. However, he felt that it was very important to know what the affected countries felt about the report, as ultimately they were responsible for locust control.

98. The Director AGP considered that the mission report was an opportunity, not to criticize the shortcomings of the various partners, but to build something better for the future. It was noted that the Desert Locust campaign of 2003-2005 was probably the shortest of this scale for many years and this was a major achievement for the affected countries, the donors and for FAO. In respect of the report, FAO had already taken on board many of the recommendations, and the Programme Committee would discuss what further follow-up action was necessary.

99. The delegates of Chad, Mali and Niger said that the implementation of the recommendations was a priority. They mentioned that during the campaign, countries had found the availability of funds not to be sufficiently transparent, and that there was a lack of local staff at the FAO Representations. They felt that reinforcement of local, CLCPRO and

HQ staff was essential at an early stage in an emergency in order to speed up the action. On some occasions, bilateral assistance had been quicker than assistance through FAO.

100. The delegate of Mauritania expressed his thanks to all the partners that had made a large effort to help his country: donors, neighbouring countries, the Commission and FAO. It was noted that the initial response to appeals for help was slow, and in-country plans were not ready to deal with such a large-scale invasion. The mission report should be taken seriously and great attention given to the recommendations. The delegate would share the report with politicians and look to making future improvements.

101. The delegate of the Gambia said that the report required further detailed study before reacting, but that his country could not have handled the locust invasion without FAO's help and the World Bank's assistance.

102. A Working Group examined the 31 recommendations and categorized them according to which entity they were directed and classified them according to:

- Recommendations that are fairly straight-forward and less complicated, target specific entities and may not imply substantial external resources. [category A]
- Recommendations that are fairly straight-forward and less complicated, target specific entities and may not include substantial external resources but needing further scrutiny. [category A+]
- Recommendations that need further clarification/studies, involve legal policy and substantial resource mobilisation. [category B]

103. From comments from the floor, it was noted that although the *Bs* were more complicated, they were also important for the future. Recommendations 26 a) and b) were also seen as key elements of the whole evaluation. The delegate of France suggested that the existing Working Group should work on all the category *B* recommendations, plus the category *A* 7, 23a), and 26a) and b), and that another Group be established to carry out an overall monitoring of the implementation of all the recommendations.

104. The delegate of the Netherlands suggested that the monitoring should be given to the existing Rome-based Steering Committee that had overseen the evaluation. Participants agreed with this suggestion, adding that the Monitoring/Steering Committee should meet regularly in order to fulfil its role.

105. In conclusion, the DLCC recommended that:

- A Working Group should be established to review the recommendations in the second and third categories, including recommendations 7, 23a), and 26a) and b), and that it should have the same composition as the one that had worked during the Session (see Annex IV). All the participants agreed to be part of the Group.
- The Evaluation Mission Steering Committee should be requested to monitor the progress of the implementation of the recommendations. The Working Group would report to it, as would other parties involved in implementing recommendations. The Monitoring/Steering Committee should meet regularly in order to fulfil its role.

### **Proposal for establishment of an Emergency Fund for Desert Locust management**

106. The FAO Consultant/recently-retired Senior Officer of the Locust Group, Mr Elliott, presented the proposal. It had been prepared in response to the recommendation made at the Extraordinary Session of the DLCC in December 2004. The DLCC had recognized that the late arrival of donor funding had been a major constraint in the execution of the 2003-2005 Desert Locust control campaign.

107. The need for an international emergency locust fund had been widely supported by the locust-affected countries since the emergency began, and had been endorsed at various formal meetings in the Western and Central Regions and backed by the findings of the

Independent Multilateral Evaluation Mission of the 2003-2005 campaign. The need for the fund was also strongly supported by FAO in an After Action Review.

108. It was suggested that the main purpose of an international emergency fund was to provide support to resource-poor locust affected countries when an important upsurge in locust populations began. It would provide funds for locust control and to a certain degree, relief to affected people. It could be expected that national locust control units with their capacity increased under the EMPRES Programme and with country and donor support, would be able to handle small outbreaks satisfactorily.

109. The presenter mentioned that there were other initiatives addressing emergency funds at the national and at regional levels. Some countries already had national funds and others were attempting to establish them. Regional solidarity between well-resourced and resource-poor countries was a conspicuous feature of the 2003-2005 campaign both in the Western and the Central Regions. It was intended to establish protocols to make this solidarity function even better. The Commission for Controlling the Desert Locust in the Central Region (CRC), at its most recent Session, took a decision to establish a regional emergency fund using unspent balances in its trust fund.

110. The size of the international fund (about US\$ 30 million), the administration and governance (possibly a Committee to oversee its implementation involving affected countries, donors, independent locust experts and FAO), and its replenishment were mentioned. Existing international funds include FAO's Special Fund for Emergency and Rehabilitation Activities (SFERA) and the UN's Central Emergency Response Fund (CERF), but it was not obvious that either could be successfully applied to a locust emergency. However, SFERA might be a suitable site at which a locust fund could be held as a separate entity. An alternative to establishing a fund would be to negotiate advance agreements with traditional donor supporters of locust emergencies, so that funds could be released in a matter of days if an emergency was declared. Advance agreements could operate in parallel with a fund for those donors that preferred such an approach.

111. In the discussions that followed, the Director of the Emergency Operations and Rehabilitation Division (TCE), Ms A. Bauer, said that SFERA had increased its capacity to US\$12 million, but its use still depended on confirmed commitments from donors and on whether the funds had already been allocated to other emergencies. She said that SFERA was ready to host a separate account for the locust emergency fund if this was decided as the best arrangement.

112. The delegate from Eritrea said that use of emergency funds needed improvement and that the funds should be invested when not being drawn on. He felt that it was not necessary to have a Committee overseeing the fund, as this would slow down its implementation, but that the authority should be given to the Director to make the necessary decisions. The presenter said that all funds held by FAO were automatically invested and earned interest.

113. The delegate of the Gambia asked whether the international emergency fund, if it were established, could be used for other purposes, but it was explained that the intention was that it would be exclusively for Desert Locust.

114. The delegate of the Norway said that, although FAO was often accused of being slow and no doubt could improve its rate of implementation, there was also delay on the donors' side. It was clear that for effective locust control, time was the crucial factor. While Norway would certainly give the fund its full consideration once it was established, it has the possibility to release funds quickly, and suggested that other donors examine their modalities for quick release of funds.

115. The Director TCE clarified that late in the campaign, US\$8 million had been borrowed from CERF against donor commitments. The main question for CERF was whether the new grant element would apply to locusts, as it was designed mainly for situations in which people's lives are at risk.

116. The delegate of the Netherlands said that an emergency fund could be very helpful. If it provided resources quickly to affected countries, the net effect could be a substantial saving in donor contributions, but donors may not be willing to contribute if they know that the funds could remain unused for several years. The fund would be of more interest to the Netherlands if there were a clear link to contingency planning. While crop protection must be the responsibility of the affected countries, donors could support an emergency fund as part of contingency planning.

117. The delegate of the World Bank said that his organization supported the idea of the fund, as the problem of slow provision of assistance was well documented. Nevertheless he felt that all options on the modalities, including governance and hosting of such a fund, should be investigated before a final decision was made. The Bank was willing to look into placing any unspent funds from the Africa Emergency Locust Project into such a fund, provided that the countries concerned made such a request. He suggested that a Working Group backed up by consultancies should examine the question and report back to the next DLCC.

118. Several affected countries supported the establishment of an international fund, including the Gambia, Iraq, Mauritania and Sudan. Mauritania added that if contingency plans were not backed up by such a fund, they were unlikely not work.

119. The delegate of the United States said that the idea of the fund was amenable and he was willing to take it to Washington.

120. The delegate of the EC said that his organization was very interested in such funds and had had positive experience with them. To have one dedicated to Desert Locust would require careful examination. The level of detail provided on the proposed fund so far was insufficient to respond. The delegate supported the creation of a Working Group to study the subject.

121. The presenter noted that the Evaluation Mission had collected data demonstrating that a major locust upsurge caused a humanitarian catastrophe, with an estimated eight million people affected by the events of 2003-2005. In future, appeals to donors could remind them of this, and allow them to access funds from humanitarian assistance budget lines.

122. In response to a question from the delegate of Australia about the availability of relatively small amount of funds to clarify the locust situation, i.e., using helicopters, the presenter said that existing arrangements under EMPRES support, should allow early warning activities to be covered by the countries themselves. There was a danger that if the emergency fund was used for many small events, nothing would be left when a major upsurge occurred.

123. The DLCC established a Working Group on the international emergency Desert Locust fund, consisting of Mr Elliott (FAO), Mr Fossati (EC), Mr Garba (Niger), Mr Kristensen (WB), Mr Ould Babah (Mauritania), Ms. Niggemann (FAO), Mr Pantenius (FAO).

124. Based on the recommendations of the Working Group, the DLCC agreed that it was imperative to establish a Desert Locust Emergency Fund aimed at providing quick financing for urgent needs in the event of a new Desert Locust emergency.

125. The DLCC recommended that:

- A task force should be established to design a Desert Locust Emergency Fund. The task force will consist of about six people representing locust-affected countries (which would eventually benefit from the Fund), the donors and FAO.
- The task force will: i) articulate terms of reference for a study that will identify viable options, including those available in the UN system, Regional Institutions or the Banks, for design and governance of a Desert Locust Emergency Fund; ii) identify resources to undertake the study; and iii) present findings of the study to the next DLCC session.



- The process of preparing the study will include consultation with representatives of stakeholders relevant to the Desert Locust Emergency Fund (beneficiary countries, donor agencies, FAO).
126. The DLCC recommended that the Task Force consist of:
- A representative of the EC
  - A representative of the WB
  - Mr Garba of Niger
  - Mr Ould Babah of Mauritania
  - Mr Khalil of Sudan
  - A representative of FAO.

#### EMPRES Progress and Direction and the Locust Commissions:

##### **EMPRES/WR and Western Region Commission**

127. The Secretary of CLCPRO, Mr T. Benhalima, informed the Meeting of the progress of the EMPRES Western Region Programme and the activities carried out by CLCPRO. He referred to the emergency and the joint efforts by the CLCPRO Secretariat, the EMPRES Liaison Officers and FAO to manage the crisis and to strengthen the preventive control capacity of the national LCUs. Thanks to the efforts of the national LCUs and unfavourable weather conditions in early 2005, the upsurge declined in the following months.

128. To keep important equipment provided under the various projects for future locust operations, a mission visited the four frontline countries - Chad, Mali, Mauritania and Niger - and Senegal between December 2005 and January 2006 to make an inventory of all equipment remaining from the emergency and to come to a written agreement with the responsible authorities that this material should be used only for locust operations.

129. The main activities conducted in 2005 and 2006 by the Commission and EMPRES/WR were related to organizing various meetings such as the Third and Fourth EMPRES/WR Liaison Officers meeting, the First EMPRES/WR Steering Committee meeting in Algiers, March 2006, and the Third session of CLCPRO in June 2005, in which the member countries unanimously accepted the membership of Burkina Faso as the tenth member state of the Commission. The Secretary of the Commission participated in many others events in the Region and at FAO HQ and supported the Multilateral Independent Evaluation Mission of the Desert Locust campaign.

130. He informed the meeting that a workplan for 2006 had been prepared in the fourth ELO Meeting, and was in the process of being implemented. Accordingly, a mission was conducted in April/May 2006 to Niger, Mauritania and Mali to raise the awareness of national counterparts and relevant development partners of the need to establish the structures for better preventive control of the Desert Locust. A major aspect was the creation of autonomous national LCUs in each of the front-line countries.

##### **EMPRES Central Region**

131. The former Coordinator of the EMPRES/CR Programme, Mr C. Pantenius, gave a summary of the progress made in the Central Region in implementing preventive Desert Locust management strategies since the Programme began in 1997 and its involvement in the recent emergency. He informed the Meeting that EMPRES/CR achieved the objectives of Phase III by transferring the responsibility for the coordination of the Programme to CRC by December 2005. He further highlighted the findings of the Phase III evaluation, carried out in September 2005, and mentioned that the Mission observed a generally positive trend in

Desert Locust prevention in the Central Region. Early warning and early reaction capacities had improved significantly in most EMPRES/CR countries.

132. As a result of the early detection and early reaction capacities being effectively in place in almost all member countries, the Desert Locust upsurge was brought under control by mid-2004 and further outbreaks were prevented.

133. Despite the promising results, it was considered necessary to give permanent attention to the EMPRES Programme in order to assist the member countries to cope with new technological developments and the introduction of new concepts for improved Desert Locust management. In addition, it was recommended that CRC should be supported with at least one technical assistant to provide the necessary technical backstopping to the countries.

### **Central Region Commission**

134. The Secretary of the CRC, Mr M. Butrous, presented a report on the activities carried out by the Commission in the period 2004-2006. He focused on the training and research programmes supported by the Commission and on joint surveys carried out during the period, as well as on publications.

135. He informed the Meeting that after the adherence of Djibouti, Ethiopia and Eritrea, all EMPRES/CR member countries, apart from Somalia, had become members of the Commission, increasing the total to 16 states. Regarding the training programme, he said that one MSc fellow at the University of Khartoum had obtained his degree.

136. The Secretary provided detailed information on the publications produced and translated into Arabic by the Commission and referred to the CRC-EMPRES website, which was accessible to all interested parties.

### **South-West Asia Commission**

137. The acting Secretary of the Southwest Asia Commission (SWAC), Mr K. Cressman, presented a report on the Commission activities. The major event of the FAO Commission for Controlling the Desert Locust in South-West Asia (SWAC) had been the holding of the Twenty-fourth Session in New Delhi, India in January 2005. Two major Commission activities had taken place in the Region during the past two years: the annual joint border survey between I.R. Iran and Pakistan in April of 2005 and 2006, and a regional workshop on the use of RAMSES, eLocust2 and remote sensing imagery held in Jodhpur, India in June 2006. The Member Countries were interested in making improvements to early warning and the annual Iran/Pakistan joint survey, re-establishing the Secretariat Post in the Region and extending the EMPRES programme to Southwest Asia.

### Bilateral Assistance Programmes to Desert Locust management

#### **The World Bank's Africa Emergency Locust Project**

138. The World Bank Team Leader, Mr P. Kristensen, gave a presentation on the World Bank and Locust Control. He reviewed the support provided to the 2003-2005 campaign, including the US\$ 60 million Africa Emergency Locust Project (AELP).

139. AELP involved a US\$60 million IDA-Credits-funded project for Chad (US\$9 million), Burkina Faso (US\$8 million), the Gambia (US\$2 million), Mali (US\$10 million), Mauritania (US\$10 million), Niger (US\$10 million), and Senegal (US\$10 million). The objective of the project was defined as "To reduce the vulnerability of the concerned countries to present and future infestations by supporting improved strategies for prevention, early warning, reaction and mitigation, both at the national level and at the regional level". The four components of the project were: i) Emergency locust control (US\$20 million), ii) Emergency agriculture investment (US\$16 million), iii) Early warning and response (US\$7 million), iv)

Project management (US\$5 million). As part of this funding, project credit advances had been bank-signed on 22 September 2004 (US\$12 million). The Bank stressed that the projects were country-led and should not be referred to as country projects financed by the Bank.

140. The Bank explained that it was interested in close donor coordination, and expected that countries, donors and technical agencies should take the recommendations emerging from Evaluation Mission carefully into consideration and support their implementation.

141. From the Bank's point of view, countries and donors were both responsible for ensuring that build-up of obsolete pesticide stocks was prevented. Along with many partners, the Bank is engaged in the Africa Stockpiles Program, which was providing grant financing to prevent and eliminate obsolete stocks of pesticides.

142. It was explained that the immediate priorities of the Bank were to prevent future invasions of locust. Human capacity was largely in place in the affected countries and could be sustained with the assistance of EMPRES and the commitment of governments.

143. There still remained work to be done in three areas: a) to establish institutional role responsibilities between countries, CLCPRO, FAO, DLCC and donors, b) establishment of a Desert Locust Emergency Fund, and c) a methodology for a humanitarian response mechanism<sup>2</sup>.

#### **USAID's Emergency Transboundary Outbreak Pest Programme**

144. The delegate of USAID, Mr Y. Belayneh, explained to the Meeting that the Agency's interest in supporting Emergency Transboundary Outbreak Pest (ETOP) operations was driven by its commitment to improving food security and the livelihood of affected communities and ensuring the safety of vulnerable populations, and would protect the environment and natural resources of host-countries for sustainable development. The Agency created a long-term programme entitled Assistance for Emergency Locust and Grasshopper Abatement (AELGA). To date, USAID was the only donor that has a fully operational long-term programme dedicated to ETOPs and related issues. This programme had been the sole Agency mechanism through which USAID had been supporting, and continued to support, capacity development, mitigation efforts, environmental awareness, policy dialogue and pesticide disposal operations. USAID was also involved in direct control operations whenever it identified a need, e.g. the locust campaigns of 1986-1989 and 2003-2005 (including the DART-JOC operations launched along the Senegal River Basin in Senegal and Mauritania). USAID, through AELGA, promoted, encouraged and facilitated close collaboration with partners including host-countries, FAO, regional entities/commissions, locust control organizations, research centres and other partners, and engaged in operational activities.

145. He also provided an overview of the activities the Agency had been (and still was) involved in including research in developing safer alternative control measures. USAID is supporting a five-year US\$3 million cooperative agreement with FAO on capacity development, EMPRES and disposal operations.

146. The delegation from Senegal expressed his appreciation to USAID for its assistance in capacity strengthening, trainer training course which he himself had benefited from as well as the cross-border DL control operations that it launched along the Senegal River basin during the 2004-05 campaign together with the Senegalese and Mauritanian partner. The delegate thought that the operations were very clean and neither empty containers nor other wastes were left behind.

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<sup>2</sup> More details on these and other recommendations were provided in a paper by the Bank which is included as supporting documentation to this 38th DLCC.

Recommendations of the 37th DLCC Session and the Extraordinary Session (2004)

147. Most of the 13 recommendations which derived from the 37th Session of the DLCC, held in September 2003, and the 25 recommendations made during the Extraordinary Session, in November 2004, had been implemented. The implementation of some of the recommendations had been delayed because of the 2003-2005 Desert Locust emergency.

148. The delegate from India requested that the recommendation to extend EMPRES to the Eastern Region should be maintained. It was noted that a merger of the Central and Eastern Commissions was not appropriate because of the large number of member countries (20), which would be difficult to manage.

149. No long-term research studies had been conducted, but the opportunity of the upsurge was taken to carry out field trials with alternative pesticides. In the 2003-2005 emergency, FAO had significantly improved timely updating of records regarding the various projects, locust developments, control operations, public relations, etc.

150. The two recommendations concerning the recruitment of staff to support the Desert Locust Information Service of FAO (DLIS) and the Western Region Commission were in the process of being implemented.

New technologies and publications

151. Mr K. Cressman gave a presentation on new technologies and publications and reported that in the past two years several new technologies to improve early warning had been introduced and adopted in locust-affected countries. Progress had been made in using remote sensing-based technologies. Higher resolution MODIS imagery had replaced lower resolution SPOT imagery to help identify green vegetation and guide survey teams. Rainfall estimates were available on a daily basis to help identify where rain had fallen in breeding areas. Seasonal forecasts of rainfall and temperature conditions up to six months in advance were being used by DLIS in forecasting on an experimental basis. Google Earth could be used to explore the relationship of the location of locust infestations to topography. There had been improvements in information: eLocust2 (for field officers to record and transmit data in real time), RAMSES (a geographic information system for national locust information officers to manage and analyze field data) and the LocustWatch web site had been updated, and a colour-coded threat level had been introduced to the web site and the bulletins. These technologies were dynamic and would be updated based on user needs and requests.

152. Several new publications and other informative material had been produced: three brochures (Desert Locust, environmental issues and EMPRES) in English, French and Arabic; all of the locust reports and relevant correspondences received by FAO from affected countries since the 1950s were archived onto CD and DVD; standard operating procedures and locust/grasshopper identification cards for field officers had been prepared by EMPRES/CR; and campaign information displayed during the 2003-05 upsurge in the atrium at FAO Headquarters. This exhibit had recently been replaced to show post-emergency activities that focus on the environment.

153. Questions that arose concerned issues such as access/updates of relevant information and remote sensing data on the FAO Locust Watch website, the cost involved for field data transfer via satellite and the availability of publications in local languages. It was further noted that eLocust2 did not accommodate all survey data as preferred by some of the Western Region (WR) countries.

154. The suggestion to inform the users of changes on the Locust Watch website would be taken into consideration. Regarding the subscription fees of € 30 per month for field data transfer via satellite, it was said that these fees were justifiable and would not pose a problem during emergencies. The alternative free-of-charge data transmission by HF radio

modems (eLocust) had proven not to be reliable and insufficiently user-friendly. Concerning the detailed survey form being used by some LCUs in the WR, it was explained that the current data input format, based on the standard FAO locust survey form, provided the basis for information management and forecasting in all countries. All additional field information was welcome but, if standardized, would make the information system more costly. Any supplementary data could still be collected during recession periods and entered into the RAMSES data base for further studies at a later stage. The time it took to fill the more complex survey form could become critical during an upsurge. However, it was agreed that an expanded data input format could be taken into consideration in the development of a next version of eLocust.

#### Report of the Technical Group Workshop on Contingency Planning, May 2004

155. Mr L. McCulloch, member of the DLCC Technical Group and participant in the Workshop on Contingency Planning for Locust Management, described the background to the workshop, its aims and the details of the activities undertaken. In addition to considering contingency planning in terms of resources required, evaluating different control tactics and institutional strengthening to ensure that additional resources could be used effectively, the workshop had also discussed some of the real resource mobilization issues applying at the time.

156. It was noted that a number of the workshop recommendations in respect of resource mobilization, contingency planning and, to some degree, research had been addressed by the report of the Multilateral Evaluation mission. However, it was believed that several specific research recommendations of the workshop related to the collection of field data on hopper band distribution should be accorded a high priority in the future to improve understanding of the efficacy of different control tactics.

157. The DLCC noted the report.

#### Technical Group composition and future activities

158. The Locust Information Officer, Mr K. Cressman, gave a brief history of the DLCC Technical Group (TG). After 23 years of dormancy, a Technical Advisory Committee (TAC) was revived by the DLCC in 1989, was transformed into the DLCC TG in 1990 and met for the first time in 1992. Its mandate was modified in 1992, 1995 and 1999. The last full meeting of the TG was in 2000, and the 2004 Workshop on Contingency Planning was held under the aegis of the TG.

159. It was noted that the DLCC Sessions in 2001, 2003 and 2004 had referred only three issues to the TG: updating the Spray Monitoring Form; contingency planning; possible links between climate change and Desert Locust population dynamics and distribution. The TG was not consulted during the 2003-2005 emergency.

160. The meeting discussed the usefulness of the TG. Two members of the Group who were present said that the fact that issues had not been referred to it by the DLCC suggested that it was better abolished. The third member present said she felt she had contributed more by being asked to prepare detailed analyses of past campaigns than by participating in the TG. Other participants considered that if a particular issue needed technical investigation or review, it would be better to assemble a group of experts in the particular speciality rather than the TG, which might contain only some members with knowledge of the subject.

161. The DLCC recommended that the DLCC TG be replaced by consultation with technical experts using Internet-based tools (emails, fora, networks, etc.) and, where appropriate, face-to-face expert consultation. The consultation process would be organized by the Secretariat. It was requested to ensure maximum transparency of the selection of the experts and with special attention to the affected countries.

#### International Trust Fund 9161: Contributions/Expenditure Workplan 2003-2007

162. The FAO Locust Information Officer, Mr K. Cressman, gave an overview of the financial situation of the DLCC Trust Fund and mentioned that the fund continued to support a number of activities that were of crucial importance to improved Desert Locust management, thereby bringing benefit to locust-affected countries. Major activities funded include training at the post-graduate degree level, at the diploma level and of Locust Information Officers. The production of the Desert Locust Guidelines in Arabic and French had been an important expense in 2004. The DLCC had also made a significant contribution to bringing remote-sensing images and new technologies into use as operational tools, to developing the RAMSES database, and to creating databases for archived locust reports and for locust pesticide trials. It organized the DLCC TG in Mauritania in May 2004. The DLCC had supported EMPRES, with one DLIS General Service staff to provide documentary information to the countries when required. Compared to previous years, expenditure declined slightly in 2003-05 as a consequence of the Desert Locust upsurge and related emergency funding which covered many activities usually funded by the Trust Fund.

163. Major efforts were needed to encourage the timely payments by members of their annual contributions and to clear US\$1.6 million of arrears. Only five countries paid regularly to the Trust Fund. Payments received so far in 2006 were substantially less than in previous years. More than half of the members owed at least nine years of contributions. Iran and Iraq accounted for nearly a third of the outstanding contributions. As a consequence, the current level of activities supported by the Trust Fund could not be maintained. The present cash balance of the fund would cover the costs of the 38th session but not the activities beyond the end of 2006.

164. In the discussions that followed, the delegate from Iraq requested the DLCC to cancel 50% of its arrears, provided annual payments are made regularly from now on. The delegate from Mauritania supported Iraq's request and indicated that his country would appreciate a similar concession. The delegate said that as Mauritania had to contribute to both the CLCPRO Trust Fund and the DLCC, this position was difficult for the authorities in his country to understand. The delegate from Morocco felt that countries that had difficulties with their DLCC arrears should be offered similar treatment to what was agreed for Iran at the 37th Session, namely to pay off 75% of its arrears and then have the remaining 25% cancelled.

165. Several other delegates commented on the problem, adding that if the DLCC had a technical or organizational value, there was bound to be a cost, which countries should accept to pay. If countries did not feel that they obtained good value for their money, they should request improvements in the quality of the service. Most participants agreed that any system for reduced payments of arrears should apply to all countries. The delegate of Pakistan said that waiving 50% of arrears would encourage countries to default, and discourage the six that pay regularly. The delegate from Morocco said that a letter should be sent to members calling for payments and informing them that, if payments were not received, certain DLCC activities would have to be discontinued.

166. In conclusion of the discussions on the Financial Contributions to the DLCC TF, the DLCC expressed its warm appreciation to the few countries that had regularly paid their contributions to the DLCC Trust Fund. At the same time, it indicated its great concern that it might not be possible to carry out the activities planned for 2006-2007 due to the critical state

of the Trust Fund caused by the non-payment of annual contributions by many countries over a period of years.

167. Accordingly, the DLCC recommended that the Director-General of FAO should:
- officially contact the countries concerned and appeal to them to settle their annual contribution to the DLCC Trust Fund for 2006, and should invite them to propose a schedule for settling the total amount they may have in arrears; and
  - officially contact the Government of Nigeria and request it to settle the arrears that existed when it withdrew from the DLCC.

#### Pesticide Referee Group

168. The Chairman of the PRG, Prof G. Matthews, said that the PRG's meeting in October 2004 was the first time it had met during a Desert Locust emergency. Several questions arose from the current control operations. In particular, organophosphate (OP) insecticides were being used instead of pyrethroids, due to the alleged recovery of locusts after knockdown. The PRG decided to keep the lower 12.5 g.ai/ha dosage on the list and to add a higher one (17.5 g.ai/ha) for use against fully grown hoppers and for applications at higher temperatures. In addition, pyrethroids should be preferred when crops have to be protected.

169. Concerning Fipronil, it was agreed that its future use should be recommended for hopper control using barrier treatments only. The PRG further recommended that data concerning Insect Growth Regulators (IGRs) be re-analyzed, conditions for barrier treatments be clearly defined and respected in operational control, and the barrier technique not be confused with irregular blanket treatments.

170. Despite some constraints when producing and using *Metarhizium*, in view of its importance in ecologically sensitive areas, the PRG considered that FAO should attempt to facilitate the wider availability and use of this mycopesticide. In addition, serious consideration should be given to its use in preventive control as it would not have adverse environmental effects and might help stop a locust population from increasing early in its development.

171. Prof. Matthews said that, unfortunately, detailed data were not provided to the PRG regarding the new products, imidacloprid or spinosad, nor for PAN. The PRG had expressed concern about PAN's mammalian toxicity.

172. The PRG had also considered environmental aspects and field operations. The tables indicating the risk of adverse effects on non-target organisms had been updated, based on recent field data, and new experience and the risk assessments had been brought in line with international criteria. Health monitoring had been discussed at length and practical advice had been given concerning the training of operators and the use of protective clothing, the monitoring of their acetyl-cholinesterase level and the equipment used during chemical transfer.

173. The PRG had highlighted again the insufficient feed-back concerning the efficacy of recommended insecticides under operational conditions. It had expressed concern that the Desert Locust control campaign had relied nearly exclusively on organophosphate (OP) insecticides, considered among the more dangerous products. Consequently, it had recommended the inclusion of a wider range of insecticides in the Desert Locust campaign with emphasis on less hazardous products and a more rapid deployment during the early stages of an upsurge.

174. Prof Matthews said that a database containing data summaries and all original trial reports had been created. The PRG members have full access, and external parties a

limited one (data summaries and published reports) as some documents submitted were confidential.

175. During the discussions, the representative from Australia provided information on the respective costs of pesticides in his country, Fipronil being the cheapest, Fenitrothion 3-5 times more expensive and *Metarhizium* 8-9 times. He indicated that the dose of Fipronil in barrier spraying had been reduced to 0.1- 0.5 g.ai/ha and that environmental research had provisionally demonstrated this kind of use to be less ecologically risky than using Fenitrothion as blanket spraying. The environmental work was on-going. He also noted that FAO planned to carry out some research on PAN, but cautioned that if results were favourable, PAN itself and mixed with other products would need to be registered.

176. Mr Elliott noted that, according to the PRG, pyrethroids are an environmentally more friendly product compared to OPs, yet, during the last campaign OPs had been used almost exclusively. This could be explained by two constraints: no pyrethroids were registered in CILSS countries or the Western Region and pyrethroids were more costly than OPs. FAO could be asked to encourage producers of pyrethroids (with dosage suitable for DL) to submit dossiers to CILSS (the same applied in the Central Region) and to attempt to negotiate a price for pyrethroids that would be competitive with OPs.

177. The delegate from the World Bank welcomed the overview on the pesticides currently available. He asked for clarification on the appropriateness of investing in infrastructure in the countries for a wider use of biopesticides, in particular Green Muscle®. It was noted that the matter would be discussed at the forthcoming conference on alternatives to chemical control to be held in Dakar, Senegal, in February 2007.

178. The DLCC adopted the PRG report.

## ANY OTHER BUSINESS

179. The delegate of Mauritania said that in the documentation, it was mentioned that the CLCPRO would arrange a timely collaboration mechanism or protocol for intra-regional assistance. The DLCC endorsed this proposal on the understanding that the Commissions would be responsible for implementation.

180. The delegate of Mauritania also mentioned that the DLCC had scarcely discussed future research on the Desert Locust. The Secretariat noted that the Evaluation Mission had made several recommendations on research, which would need to be implemented. It was agreed that the item would be placed on the agenda of the next DLCC Session, so that progress in this field could be assessed.

181. Several delegates drew attention to the need for more training through the provision of Fellowships by the DLCC. These various observations were noted, but it was remarked that countries would have to pay their contributions and arrears if resources were to be sufficient to increase the number of fellowships awarded.

182. The delegate of the United States requested a moment of silence in remembrance of several colleagues who worked on locust-related activities and had passed away prematurely in the last years. The Chairman called for a minute's silence in memory of:

Abdoulaye Niassy (DPV, Senegal)

Chris Lomer (IITA/CABI)

Constantin Basarake (PPD, Uganda)

Aynekulu Abebe (DLCO-EA)

Mohammed Abbas Abou Hassab (PPD, Sudan)

Moussa Sissoko (DPV, Mali)



183. On being informed that Mr Niek Van der Graaff was soon to retire, the DLCC expressed its great appreciation of the contribution that he had made over the many years that he had been Chief of the Plant Protection Service at FAO, during which time two major Desert Locust emergencies had occurred.

#### **ADOPTION OF THE REPORT**

184. This report with agreed amendments was adopted unanimously.

#### **DATE OF THE NEXT DLCC SESSION**

185. The Committee agreed to hold the next Session to the DLCC in June 2008, unless a new emergency arose, which would necessitate an Extraordinary Session.

#### **CLOSURE OF THE SESSION**

186. The Chief AGPP, Mr Niek Van der Graaff, reminded the Committee of its long past and its important role in coming up with valid conclusions and recommendations in technical and political issues to manage the crises due to the Desert Locust. He pointed out that all recommendations would be kept in the spotlight for close follow-up. He stressed the increasing importance of environmental and livelihood issues, which should be at the heart of any improved Desert Locust management. He thanked the Chairman and the Vice Chairs of the working groups for the good results achieved. He also thanked the interpreters, messengers, secretaries and other support staff for their invaluable assistance during the meeting.

187. The Chairman of the 38th Session of the DLCC wished the participants a safe journey home and declared the meeting closed.

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**Annex II: Approved Agenda**

1. Opening of the Session
2. Election of Chairman, Vice-Chairman and Drafting Committee
3. Adoption of the Agenda
4. The Desert Locust Situation (December 2004 to August 2006) and Forecast to Winter 2006
5. Comments and additions from locust-affected countries
6. The Desert Locust emergency 2003-2005:
  - (a) Review of the survey and control operations undertaken
  - (b) Review of the assistance provided to affected countries multilaterally and bilaterally, and made available from national resources
  - (c) Review of the training provided to affected countries
  - (d) Review of human health and environmental issues
  - (e) Report of the Multilateral Independent Evaluation Mission
  - (f) Proposal for the establishment of an Emergency Fund for Desert Locust management
7. EMPRES Progress and Directions and the Locust Commissions:
  - (a) EMPRES/WR and the Western Region Commission
  - (b) EMPRES Central Region
  - (c) Central Region Commission
  - (d) South-West Asia Commission
8. Bilateral Assistance Programmes to Desert Locust management:
  - (a) The World Bank's African Emergency Locust Project
  - (b) USAID's Emergency Transboundary Outbreak Pest Programme
9. Recommendations of the 37th DLCC Session (2003) and the Extraordinary Session (2004)
10. New technologies and publications
11. Report on the Technical Group Workshop, May 2004
12. Technical Group composition and future activities
13. International Trust Fund 9161: Contributions/Expenditure Workplan 2003-2007
14. Pesticide Referee Group
15. Any Other Business
16. Date of the next Session
17. Adoption of Report
18. Closure of the Session

### **Annex III: The Desert Locust Situation (December 2004 to August 2006) and Forecast to December 2006**

*NB. This paper contains information reported to FAO DLIS up to 30 June 2006. The situation and forecast will be updated during the DLCC.*

#### **1. OVERVIEW**

The Desert Locust upsurge in the Western Region began to decline in late 2004 due to intensive control operations and unfavourable weather and ecological conditions in Northwest Africa. Consequently, swarms did not form during the spring of 2005 in Morocco or Algeria nor did they invade the Sahel in the summer. Several Southern Circuit swarms moved east across the southern Sahel in the spring of 2005 and bred along both sides of the Chad-Sudan border during the summer. In the Central Region, control operations were carried out against swarms that invaded northwest Egypt and reached the Red Sea coastal plains in late 2004 and early 2005. Operations were also carried out against Southern Circuit swarms and their progeny in western Sudan and Ethiopia during the summer of 2005. By autumn, the upsurge had ended in both regions. More than one million ha were treated in December 2004 and, thereafter, less than 800,000 were treated in 2005 compared to more than 11 million ha from October 2003 to November 2004. In South-West Asia, a small outbreak developed during the summer of 2005 along the Indo-Pakistan border. About 18,000 ha were treated by ground teams in India and Pakistan and the situation returned to normal by the end of the year. So far in 2006, the situation has remained calm in all regions, and only limited control operations have been carried out in Algeria.

#### **2. WESTERN REGION**

##### **2.1. Northwest Africa spring breeding**

Unusually cold temperatures during the winter of 2004/05 in the Maghreb did not allow the immature swarms that arrived from the Sahel during the autumn to mature nor to migrate to other areas. This gave control teams in Morocco and Algeria nearly six months to carry out spray operations before the temperatures began to warm up in March. From December 2004 to March 2005, Morocco treated 459,888 ha and Algeria treated 1,013,153 ha. Operations were also conducted in Mauritania (59,987 ha), Libya (5,560 ha), Niger (2,535 ha), Tunisia (990 ha) and Cape Verde (530 ha) mainly against residual populations. Consequently, very few infestations remained at the beginning of spring 2005 and subsequent breeding in Morocco and Algeria was extremely limited due to poor rainfall along the southern side of the Atlas Mountains. As a result, locust numbers did not increase significantly during the spring and the Sahel was not invaded in the summer of 2005. By now it was clear that the upsurge had collapsed.

##### **2.2. Southern Circuit migration**

Late-forming first generation swarms mixed with a smaller second generation of swarms moved west in the Sahel during December 2004. These swarms subsequently reinvaded northern Senegal and moved south through Gambia to Guinea Bissau and Guinea by January 2005. The immature swarms over-wintered in the central highlands of Guinea. Control operations were carried out against swarms in Senegal (62,815 ha), Gambia (14,422 ha), Guinea Bissau (7,368 ha) and Guinea (24,350 ha) from December 2004 to March 2005. During April and May 2005, the remaining immature swarms moved east in the southern Sahel from southern Mali to Burkina Faso to southern Niger, northern Nigeria, northern Cameroon, central Chad and eventually reached eastern Chad and western Sudan where they matured and laid eggs in late May and early June. As the swarms were moving quickly through these areas, it was not possible to conduct control operations against them.

### **2.3. Summer 2005 breeding in the Sahel**

As a result of early rainfall, solitary and *transiens* adults bred on a small-scale in the Tanout region in central Niger and 1,471 ha were treated in May and June. Southern Circuit swarms laid eggs in Chad, giving rise to a limited number of small hopper bands in June and July, mainly in the centre and east of the country where 5,592 ha were treated. Despite unusually good rains during the summer in the Sahel, solitary locust numbers remained low and only increased slightly as a result of limited breeding in west and northwest Mauritania, northern Niger and in the Algeria Sahara from September to November. Control operations were only required in Algeria where 8,510 ha were treated from June to November.

### **2.4. Autumn – winter 2005 breeding**

Small-scale breeding continued in western Mauritania and southern Algeria as ecological conditions remained favourable longer than in most years. Ground control operations were conducted in both countries (1,001 ha in Mauritania and 425 ha in Algeria) against solitary and a few *transiens* hoppers and adults in December.

### **2.5. Situation in 2006**

Locust numbers have remained low and insignificant in the region during 2006 with small infestations of solitary adults in the north of Mauritania, Mali and Niger as well as in the Algerian Sahara. Although limited breeding occurred in some of these areas, locust numbers did not increase significantly.

## **3. CENTRAL REGION**

### **3.1. Winter 2004/05 breeding**

The immature swarms that invaded Egypt and were not controlled in November eventually reached the Egyptian/Sudanese border near the Red Sea coast where they concentrated, matured and laid eggs in December. Ground teams treated small hopper bands and swarms that formed in February and March 2005 in Sudan (7,461 ha) and Egypt (1,795 ha). A few swarms crossed the Red Sea in April to the central coastal plains of Saudi Arabia where they laid eggs. The small hopper bands that developed were controlled in May and June 2005 (5,755 ha).

### **3.2. Invasion from West Africa**

Several immature swarms associated with the Southern Circuit migration arrived in the Darfur province of western Sudan from eastern Chad in late May and early June 2005. These swarms had formed the previous autumn in the western Sahel and over-wintered in the Guinea highlands. Most of the swarms remained in Darfur where they quickly matured and laid eggs, but a few swarms continued east across central Sudan and reached the Ethiopian highlands in Tigray and Amhara provinces in mid June. Hoppers bands started to form at the end of June in Darfur where survey and control operations could only be undertaken in the relatively secure Government-controlled zones during the summer. Sudan was able to treat 14,174 ha from July to September, and Ethiopia treated 264 ha from June to August. Despite the limited areas that were accessible to survey and control teams in western Sudan, there was only one report in November of a swarm forming in Darfur. This suggests that the invasion of the Southern Circuit swarms and the subsequent breeding was relatively small and confined to a limited area. Very little breeding occurred elsewhere in the summer breeding areas in Sudan in 2005. In Eritrea, ground control operations treated 20,135 ha of hopper groups and bands on the northern Red Sea coast resulting from local breeding from July to September that was probably not related to the upsurge.

### **3.3. Winter 2005 / spring 2006 breeding**

Only small-scale and very limited breeding occurred during this past winter on the Red Sea coast in Sudan, mainly in the Tokar Delta, and on the northern Red Sea coast in Yemen.

Consequently, locust numbers did not increase significantly during the winter or in the spring of 2006. By April, locust numbers declined on the Sudanese coast. Since then, there have been no reports of locusts in the region.

#### **4. EASTERN REGION**

South-West Asia was not affected by the 2003-05 upsurge and the situation remained calm until the summer of 2005 when good monsoon rains fell along the Indo-Pakistan border. Laying occurred in July, hatching and gregarization took place in August and swarms started to form in September. A second generation of breeding took place with hatching and band formation in October and new swarms forming in mid-November. By then ecological conditions had dried out and the few adults and swarms that were not controlled moved east towards New Delhi while others moved west towards the Indus Valley in Pakistan. Some adults reached the spring breeding areas in Baluchistan, western Pakistan in mid-December. By the end of the year, the situation was once again calm along the Indo-Pakistan border. During the campaign, India treated 13,922 ha and Pakistan treated 4,847 ha from September to December. During the spring of 2006, no significant developments occurred in western Pakistan or in eastern Iran, the traditional spring breeding areas, due to poor rainfall. This was confirmation that the control operations along the Indo-Pakistan border in late 2005 were successful.

#### **5. Forecast to December 2006**

The forecast is based on initial levels of Desert Locust populations in the summer breeding areas in the Sahel in West Africa and Sudan, in the interior of Yemen and along the Indo-Pakistan border and the expected distribution and timing of rainfall in these areas. Experimental seasonal forecasts of rainfall probabilities and anomalies are used to help predict rainfall in the next six months.

##### **5.1. Summer breeding**

Several scenarios are possible: (a) rainfall is patchy and ends in September or October, allowing only one generation of breeding and locust numbers do not increase significantly, (b) good rains fall over a widespread area, lasting until October or November that allows two generations of locust breeding so that there is a significant increase in locust numbers, or (c) unusually heavy rainfall occurs in one or more limited areas, causing conditions to remain favourable for several months to allow at least two generations of intensive breeding, causing an outbreak to develop in the autumn. Seasonal forecasts indicate that summer rains should be normal in most areas except during October in the central northern Sahel near the Mali – Niger – Algeria border and in western Mauritania where there is a chance of slightly higher than normal rainfall. Below normal rainfall associated with this year's monsoon is consistently predicted along the Indo-Pakistan border during the summer. As of late June, only low numbers of locusts have been reported in parts of Niger and central Algeria. Consequently, only small-scale breeding is expected to occur during the summer and the likelihood of significant infestations developing in any region is assessed to be low.

##### **5.2. Autumn – winter breeding**

The forecast for breeding during the autumn and winter depends on the situation in the summer breeding areas. If two generations of breeding occur and locust numbers increase significantly, then more locusts would be available to take advantage of any rains that fall in the traditional winter breeding areas, that is, northwest and northern Mauritania, and the coastal plains along both sides of the Red Sea. So far it is too early to indicate with any precision the scale and timing of breeding during the last three months of 2006.

**Annex IV: Results from the Working Group Meeting on recommendations suggested by the Multilateral Evaluation Mission Team of the 2003-05 Desert Locust Campaign (13 September 2006, 5.30-09.00 pm)**

Participants: Mr Ram Asre (India), Mr Yene Belayneh (USAID), Mr Munir Butrous (CRC), Mr Thami Ben Halima (CLCPRO), Mr Fakaba Diakit  (Mali), Mr Said Ghaout (Morocco), Mr Felix Hoogveld (the Netherlands), Mr Rabie Khalil (Sudan) and Mr Niek Van der Graaff (AGPP). Minutes- Ms. Helena Eriksson (AGPP)

The Working Group discussed the recommendations outlined in the report *Towards a More Effective Response to Desert Locust and their Impacts on Food Security, Livelihoods and Poverty, Multilateral Evaluation of the 2003-05 Desert Locust Campaign*. The recommendations were divided into categories:

- A – Recommendations which are fairly straight-forward and less complicated, target specific entities and do not include substantial external resources.  
(A recommendations with comments (designated as A+) need further scrutiny).
- B – Recommendations which need further clarification/studies, involve legal policy and substantial resource mobilisation.

No.	A	B	Remarks/ Follow-up
<b>(2) Planning and implementation of the 2003-2005 Desert Locust control campaign</b>			
1	A		FAO
2	A		FAO
3	A		FAO
4		B – Contingency planning is needed first.	FAO
5		B – Streamlining of procurement requirements is needed, but changing system is not possible.	FAO
6	A		FAO
7		B	FAO
8	A – The last part on accounting code is unclear.		FAO
9		B – See 24c.	
<b>(3) Analysis of the control campaign</b>			
<b>Impact on the food security situation and livelihoods of affected communities</b>			
10	A – Note was taken of donor countries of other opinions.		Host countries
<b>Economic benefits and costs</b>			
11		B – To estimate saved crops is difficult; methodology is missing. The affected countries are encouraged to elaborate on it and approach CILSS.	DLCC
12	A – 1 <sup>st</sup> part relatively easy, 2 <sup>nd</sup> part on benefit estimates is difficult and need elaboration – baseline data needed.		Host countries/ Commissions

No.	A	B	Remarks/ Follow-up
<b>Impact on human and animal health and the environment</b>			
13	A – Sustainability questioned.		Host countries/Commissions
14	A		Host countries
15	A		Host countries
16	A – Referring to ULV spraying of highly toxic compounds (WHO classes 1a, 1b, 2).		Host countries
17		B – CLCPRO and CRC Secretaries expressed different opinions.	Commissions/ Host countries
18	A		FAO and Host countries
19		B – Industrial consultation is essential. (Applies to all three regions).	FAO
<b>Technical quality and adequacy</b>			
20	A		FAO
<i>(4) Sustainable Desert Locust control</i>			
<b>Preventive control strategy at country level</b>			
21 a-f	A – Up to the member countries to decide. Sustainability has to be assured - financial means are required. Establishment of independent National Locust Unites with own budgets for locust management is essential for all countries (independent on region).		Host countries/ Commissions
<b>Strengthening of CLCPRO</b>			
22 a-c		B – To be discussed among the CLCPRO member countries. Actually re-establishing CLCPRO which involves legal (incl. amendments) and financial issues. Outcomes to be presented at the CLCPRO 4 <sup>th</sup> Session Meeting, June -07.	CLCPRO/FAO
<b>FAO responsibilities</b>			
23a	A – FAO to look into.		FAO
23b	A – DLCC Meeting results need to be recognized (the countries are primary following the regional recommendations).		FAO
23c		B	FAO

No.	A	B	Remarks/ Follow-up
<b>Donor support for Desert Locust control</b>			
24 a-c		B – Roles are unclear, overlapping mandates, legal difficulties and duplication with other instruments.	FAO and Donors
<b>Implementation of Desert Locust emergency campaigns</b>			
25 a-b		Unclear	DLCC
25c	Duplication of rec. no. 10.		
26a	Duplication of rec. no. 1-9.	B	FAO
26b	Duplication of rec. no. 1-9.	B	FAO
<b>Institutional arrangements</b>			
27a		B – Further discussions/studies are needed. More visibility to DLCC needed.	DLCC and FAO
27b			Commissions and FAO
27c		B – Not possible as it is formulated (too many stakeholders), but an agreement between the affected countries is feasible. Further studies are needed.	Crosscutting
<b>Assistance provided by Maghreb countries</b>			
28a		B – CLCPRO to discuss.	CLCPRO
28b		B – Commissions to discuss	Commissions
28c		B – Clarification is needed.	CLCPRO
<b>Socio-economic impact</b>			
29 a-c		B	Crosscutting
<b>Human and environmental health</b>			
30 a-e	A - Already approved (during presentation by Mr James Everts).		FAO and Host countries
<b>Research</b>			
31 a-e	A		Crosscutting

It is understood that recommendations designated as A+ and B require further studies before they are fully endorsed. It is also understood that these recommendations are important and core to the issues in the evaluation report. Therefore the Working Group recommends that DLCC develop a mechanism for these recommendations to be scrutinized and the results reported to the Committee through the Secretariat (FAO) for endorsement and implementation. It is also recommended that the entity to be created by the Committee works in close collaboration with those implicated in each recommendation.

**Notes:**

1. Issues that were anticipated to be fully addressed but were not fully captured: the need for environmental assessments as conditions for assistance, other relevant issues.
2. The duplicated recommendations were rejected (9, 25c, 26a and 26b).
3. Recommendations implicating CLCPRO are for the most part applicable to the other Commissions.
4. French and Arabic versions need to be revised.