



Rome,
Italy,
21-24 March
1995

Desert Locust Technical Group

Fourth session

REPORT



Food
and
Agriculture
Organization
of
the
United
Nations

**REPORT OF THE FOURTH SESSION OF
THE DESERT LOCUST TECHNICAL GROUP**

**Rome, Italy
21-24 March 1995**

**Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
Rome 1995**

Introduction

1. At its 33rd session, the FAO Desert Locust Control Committee (DLCC) revised the mandate and composition of the Desert Locust Technical Group and proposed that the next session of the Technical Group should "meet in March to further discuss the implementation of EMPRES and its extension to other regions outside of the Central Region. For this occasion the Technical Group would invite additional donor representatives to participate in its deliberations to ensure wide support for future action."
2. The session was opened by Mohamed S. Zehni, Director of AGP, who welcomed the participants and outlined the purpose of the meeting.
3. The following agenda was adopted:
 1. Opening
 2. Adoption of the Agenda
 3. Election of Chairman
 4. Summary of current locust situation
 5. Economic aspects of Desert Locust control
 6. Desert Locust control strategies
 7. EMPRES Programme implementation
 8. Extension of EMPRES programme to the Western and Eastern Regions
 9. Other matters
 10. Adoption of report
4. Mr. M. Shafi was elected as Chairman of the session. The following persons participated:

Members:

L. Bonneau
B. Chara
A.A.M. El-Gammal
C.C. Gueye
A.H. Karrar
J. Rosenberg
M. Shafi
A.T. Showler

Observers: D. Link (Germany)
B. Johannessen (Norway)
K. Kawakami (Japan)
S. Krall (Germany)
A. N'Diaye (OCLALAV)
C. van Vugt (Netherlands)
S. Wiktélius (Sweden)

FAO staff: M.S. Zehni
N.A. van der Graaff
A. Hafraoui
A. Condos
K. Cressmann
M. de Montaigne
N. Mahjoub
A. Monard
H. Niggemann
M. Taher
B. Zelazny

Resource persons: P. Gruys
J. Roffey

5. The meeting expressed condolence to the family and friends of Prof. F.A. Schulz who died unexpectedly in Germany on 11 March 1995. Prof. Schulz had served since 1990 as Chairman of the UNDP/FAO Scientific Advisory Committee.

Current locust situation

6. The Secretariat summarized recent developments in the current Desert Locust situation in North-West Africa and the Central Region which were giving cause for concern. This related in particular to the extent of the present infestations and the good rains that recently fell over the southern Arabian Peninsula and in the spring breeding areas of North-West Africa.
7. Breeding was in progress in Mauritania, Morocco, Algeria, Egypt and Saudi Arabia. There had been new reports of dense groups of adults in western and eastern Algeria as well as of adults being present in southern Tunisia. Additional adults and perhaps some small swarms were also likely to be present in western Libya. Unusual breeding was reported during February in northern Niger. In Egypt swarms were mainly reported from the oases of the Western desert along the Sudanese border extending from Libya to the Nile. Other swarms were found in the East between the Nile and the Red Sea. Aerial and ground control continued in Mauritania

and Saudi Arabia, and ground control operations were in progress in Egypt, Algeria and Morocco.

8. Depending on the efficacy of control operations and the success of spring breeding, there was a possibility of a large build-up of locusts that could threaten the Sahel and South-West Asia by early summer 1995.
9. The meeting acknowledged the seriousness of the current Desert Locust situation and the fact that the situation could become more critical in the coming months. The session expressed the hope that affected countries and donors would make every effort to bring the situation under control.

Economic aspects of Desert Locust control

10. The results of the ad-hoc Working Group on the Economics of Desert Locust Control, held at FAO Headquarters from 15 to 17 March 1995, as well as previous work on this subject was summarized by the Secretariat. Although some information exists on the economic impact of locust infestations and on the costs of control measures, the Working Group concluded that it is not possible at present to be confident that the amount of resources devoted to Desert Locust control are consistent with the benefits, in terms of losses averted.
11. The Working Group emphasized the need to collect more reliable information on the subject for policy purposes. Among others, it recommended a pilot study with existing data on the relationship between population dynamics and potential impacts. This would include a simple economic model describing swarm size, migration and feeding behaviour. The model could be used to describe the situation under which economic benefits are maximized for all locust-affected countries. It might then be possible to use such information as a basis for an international agreement on collaborative Desert Locust management.
12. Several participants drew attention to the serious threat Desert Locusts pose to affected countries, to the importance of agriculture in these countries as well as to the humanitarian aspects which are connected with the locust problem. The difficulties involved in obtaining reliable data on actual and potential crop losses were noted. Estimates on potential damage will always be associated with considerable uncertainties because the population dynamics of the pest are highly variable as are the environmental conditions which influence these dynamics.
13. It was noted that information on potential crop losses should be collected in a way which would allow to compare the economic significance of the Desert Locust with that of other crop pests in the affected countries.

14. Options for further actions were discussed in relation to the recommendations of the ad-hoc Working Group. It was felt that a collaborative effort would be needed to advance the knowledge on the economics of Desert Locust control which would combine experience and expertise from different affected and donor countries. Preliminary, brief outlines for the above components were prepared and considered by the Technical Group.
15. **The meeting agreed on the following:**
- FAO would prepare outlines/proposals of the different components of the collaborative project and would liaise with donors and affected countries regarding participation and funding.
 - While various groups would support individual parts of the project, FAO would ensure overall implementation and coordination. Close interaction between the different groups and activities would be promoted.
 - FAO would ensure that the results are made available to affected countries and the international community.
 - A collaborative project on Desert Locust economics and control strategies would consist of:

General analysis

This would be a fast and approximate analysis of overall costs and benefits of Desert Locust control, based on existing information and previous studies. The analysis could be done by a team of experts (e.g. economists and locust control specialists) within a period of several months. The results could give initial justification for a longer-term project on Desert Locust management (EMPRES) but would also provide essential information to the other components of the project.

Case studies

Recent campaigns would be analyzed for which the most detailed information on locust records, environmental conditions, control operations and crop losses are available. It might be advantageous to confine some cases to one country and/or to brief periods of time. Case studies would include, among others, updating of the crop vulnerability indices introduced by Bullen in the 1960s, and using the approach introduced by Herok and Krall in 1995. Case studies would further be combined with analyses of control strategies (see below).

Economic model

This would involve constructing a model aimed at identifying maximum net benefits for all affected countries and calibrating it to actual data.

It was noted that modelling is a technical demanding enterprise requiring appropriate experts who can relate it to the actual field situations experienced in the past.

Field studies/application

This would include activities like:

- the development of simple and standard crop loss assessment methods,
- a risk management study in locust-affected countries,
- development of control criteria based on results from the case studies and the economic model,
- and additional field studies on important knowledge gaps relevant to economic parameters (e.g. analysis of current control decisions, impact of control operations or research on feeding behaviour).

Desert Locust control strategies

16. A summary of previous considerations and discussions on Desert Locust control strategies was presented by the FAO Secretariat. Historically, strategies in affected countries have shifted from a defensive or crop protection approach to an offensive approach which is now aimed at plague and upsurge prevention.
17. There was a general agreement on the importance of reliable information on rainfall and vegetation as a basis for decision making on monitoring and early control operations. This applies in particular to gregarisation areas and to other critical locust breeding areas which are of seasonal importance. The need to provide national and regional plant protection services with higher quality information of this kind was stressed. Different options for obtaining rainfall and vegetation data were discussed and the technical limitations and difficulties in this field were noted.
18. Participants in the meeting expressed doubts as to the usefulness of criteria for the selection of worth-while control targets as proposed in 1985 by an expert panel. To be more useful, the criteria should be much more detailed through further studies and research.
19. The issue of restricting control operations to strategic areas in the vicinity of high value crops once a full scale plague has developed was discussed. Several participants again stressed the need for preventive control to avert major plagues.
20. In discussing the proposal of an analysis of the 1992-94 upsurge aimed at assessing the impact of different control options, attention was drawn to the uniqueness of Desert Locust upsurges and hence the need for analyses of several upsurges. The relationship of these studies and those on the economic impact of the Desert Locust, in efforts to develop improved control strategies, was clarified. Prudence was called for lest theoretical approaches drifted too far away from reality and produce misleading

results. The need to use data from Plant Protection Services in affected countries was stressed.

21. **The meeting agreed that**

- rainfall monitoring needs to receive higher priority;
- detailed decision criteria need to be developed;
- previously established criteria need to be revised;
- case studies on previous upsurges and plagues should be initiated which are aimed at evaluating the efficacy of campaigns and the possible impact of different control strategies.

EMPRES programme implementation

22. The FAO Secretariat introduced the topic and referred to the origin of the programme, the results of previous meetings and discussions on EMPRES, and to the work of the EMPRES formulation mission. The outstanding issues related to the implementation of the EMPRES programme in the Central Region were summarized and a draft programme implementation document prepared by a consultant was made available to the Group as a basis for discussions. Three pilot projects, funded from the FAO Regular Programme, were described which would initiate important core activities of the EMPRES programme.
23. The meeting expressed strong support for the general concept and directions of the EMPRES programme and urged its early start.
24. The meeting made the following specific comments on the proposed EMPRES programme implementation document:
- The learning process emphasized in the EMPRES formulation mission report needs to be maintained and more developed in the implementation document.
 - Training and research were stressed as important components and ongoing and planned bilateral efforts in these areas can be integrated to support the EMPRES activities.
 - It was suggested to delineate development and operational activities, so as to allow for a degree of flexibility for donor support.
 - There was a general support for a contingency fund but mechanisms and modalities need to be further considered by FAO in consultation with other concerned parties. It was also noted that such a fund should cover all regions.

- Active participation from locust-affected countries was considered essential for the successful implementation of the programme.
- For the sake of cost effectiveness and efficiency it is necessary to consider carefully the use of aircraft, particularly the use of helicopters, for survey and control operations.

25. **The meeting agreed that:**

- The **early warning** and **information exchange** components of EMPRES should receive high priority.
- EMPRES should pay particular attention to introducing innovative methods and systems aimed at improving the quality of survey and control operations. Emphasis should be placed on sustainable development activities.
- EMPRES should not attempt to create structures which might compete with the activities of existing regional organizations. Locally available resources should be used as much as possible.
- EMPRES should make arrangements which would allow experts from other regions to participate in the programme activities in the Central Region.
- Attempts need to be made to establish links to other ongoing and planned bilateral activities which contribute to the EMPRES objectives. This would be particularly applicable to training and research activities.

26. **The meeting agreed on the following overall outline for EMPRES:**

- The programme should contain an introductory statement reflecting the global importance of preventive control; in this respect the meeting recalled the EMPRES formulation mission report which stated that "Given the importance of the Central Region as a source of many outbreaks and upsurges it was proposed that the program would begin in this region, focusing on countries on either side of the Red Sea, and expand later into other regions."
- The primary goal of the EMPRES programme will be to:

To prevent Desert Locust plagues emanating from the Central Region of the Desert Locust distribution area through well-directed surveys and timely, environmentally sound interventions in order to minimize or mitigate food security concerns in the Central Region and beyond.

- The objective of the programme will be to:

To promote and catalyze the realization of regional self sufficiency for averting locust plagues through strengthening existing national, regional, and international components of Desert Locust management systems.

- The activities of the programme will include the following components:

Establish a regional unit for coordinating and organizing EMPRES activities

Establish an improved early warning system for the Central Region which will identify and monitor actual and potential outbreak areas

Establish an efficient information exchange system aimed at improving decision making and at rapid mobilization of control operations

Strengthen the monitoring and early control capacity in the Central Region through various development activities

Review and analyze the efficacy of different control strategies including those based on alternative (non synthetic chemical) methods

Assist in the establishment of rapid deployment plans and contingency arrangements

- These activities will involve tools like training and research

27. The meeting agreed:

that the above outline would be further developed by the FAO secretariat in collaboration, by correspondence, with the members of the Technical Group.

Extension of EMPRES programme to other regions

- 28.** The meeting acknowledged the importance of the Western and Eastern Regions in attempts to prevent upsurges and plagues. The history of the Preventive Control project for West and North-West Africa was summarized by the Secretariat. It was noted to that a donor has expressed interest in the proposal but has recommended clarifications and modifications as well as a link of this project to the EMPRES programme.

29. **The meeting agreed that:**

- a preventive control programme for West- and North-West Africa will continue to be developed and will be linked to the EMPRES programme in the Central Region.