REPORT OF THE

TWENTY-SIXTH SESSION OF THE FAO DESERT LOCUST CONTROL COMMITTEE

Rome
4-8 October 1982

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Meeting Report No.
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THE TWENTY-SIXTH SESSION OF THE FAO DESERT LOCUST CONTROL COMMITTEE

held in
Rome, Italy
4 - 8 October 1982

Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
Rome, 1982

C O N T E N T S

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INTRODUCTION

The Twenty-Fifth Session of the FAO Desert Locust Control Committee, which was held in Rome on 5-9 October 1981, recommended that the next session of the Committee should be convened in Rome in October 1982. The Director-General invited the following governments to be represented at the Twenty-Sixth Sesson:

Afghanistan
Algeria
Bahrain
Benin
Cameroon
Central African Republic
Chad
Djibouti
Egypt
Ethiopia
France
Gambia
Ghana
Guinea
India
Iran
Iraq
Israel
Ivory Coast
Jordan
Kenya
Kuwait
Lebanon
Libya
Mali
Mauritania
Morocco
Niger
Nigeria
Oman
Pakistan
Portugal
Qatar
Saudi Arabia
Senegal
Sierra Leone
Somalia
Spain
Sudan
Syria
Tanzania
Togo
Tunisia
Uganda
United Arab Emirates
United Kingdom
United States of America
Upper Volta
Yemen Arab Republic
Yemen, People's Democratic Republic of

Turkey, having notified FAO that it wished to withdraw from the DLCC, has therefore not been invited.

He also invited the representatives of the Desert Locust Control Organization for Eastern Africa (DLCO-EA), l'"Organisation commune de lutte antiacridienne et de lutte antiaviaire" (OCLALAV), the International African Migratory Locust Organization (OICMA) and the International Red Locust Control Organisation for Central and Southern Africa (IRLCO-CSA). In addition, he invited the representatives of the United Nations Development Programme (UNDP) and the World Meteorological Organization (WMO) because of their continued interest in the desert locust programme.

The Session was opened by Mr. R. J. Pichel, Special Assistant to the Director, Plant Production and Protection Division who, on behalf of the Director-General of FAO, welcomed the participants to the Session and briefly reviewed the more important developments in the desert locust situation since the previous session. Local upsurges occurred in October to November 1981 in western Mauritania, in May 1982 in Djibouti and the People's Democratic Republic of Yemen and in June-July in south-east Iran and western Pakistan. Swarms in Mauritania dispersed during the winter and large-scale control operations were undertaken in Iran and Pakistan and prevented the formation of any large swarms. The Desert Locust is in recession again. OCLALAV was facing a most critical financial situation which requires long-term solutions.

Mr. Pichel emphasized the need for short-term training as a major activity to be financed from the locust trust funds. He also mentioned FAO efforts in combatting migrant pests other than the Desert Locust and informed the meeting about the recent assistance provided by Belgium and promised by Japan.

Officers of the Session

Chairman : Sulayman Mboob (The Gambia)

Vice-Chairman: Aladdin D. Ali (Iraq)

Drafting Committee

The delegates of Algeria, Ethiopia, Iran, Saudi Arabia and Senegal and the FAO secretariat. Mr. R. Skaf acted as technical secretary.

Acknowledgements

The delegates expressed their appreciation and thanks to the Chairman for the way in which he conducted the deliberations of the Session and for his cooperative attitude which facilitated full and frank discussions. They also thanked the FAO secretariat for carrying out their duties efficiently.

Obituary

The delegates expressed their deep regret at the passing away in August 1982 of Dr. F. Whittemore (USA) who had attended the sessions of the DLCC for many years. Before that he was a senior staff member of the Plant Production and Protection Division in FAO and spent most of his career in medical and economic entomology.

PARTICIPANTS IN THE SESSION

The following delegations from Member Nations of the Food and Agricultural Organization of the United Nations, the United Nations and Specialized Agencies, observers and members of the FAO staff participated in the Session and contributed to the discussions summarized in this report.

Delegates from Member Nations of FAO

Afghanistan,
Latif Baluchzadah — Rome
Second Secretary, Embassy

Algeria
Saïd Zitoune — Algiers
Directeur général, Institut national de la protection des végétaux

Embarek Guendez — Algiers
Protection des végétaux, Ministère de l'agriculture et de la révolution agraire

Cameroon
Ngongi A.G.Namanga — Rome
Counselor (Agriculture) Embassy

Egypt
Samir Nessim Gerges, — Cairo
Director General, Locust Control and Agro-Aviation Dept., Min. Agriculture

Ethiopia
Hadera Gebremedhin — Addis Ababa
Head Crop Protection & Regulatory Division
Ministry of Agriculture

France
Marc Maupas-Oudinot — Paris
Administrateur civil, Service des relations internationales, Min. de l'agriculture

The Gambia
Sulayman S. Mboob — Yundum
Director Crop Protection Service
Ministry of Agriculture

Iran
A. A. Soltani — Teheran
In Charge of Locust Laboratories & Field Crop Pests Section, Plant Pests & Diseases Research Institute

Iraq
Alladdin D. Ali — Baghdad
Director-General of Plant Production Department

Jordan
S. Q. Bashmaf — Amman
Chief of Plant Protection, Min. Agriculture

Kenya
F. S. A. Adoyo (Ms) — Nairobi
Assistant Secretary, Min. Livestock Development

R. B. Ryanga — Rome
Permanent Representative of Kenya to FAO

P. M. Amukoa — Rome
Alternate Permanent Rep. of Kenya to FAO

Libya
Faraj M. Karra — Tripoli
Chief of Desert Locust Control Office
Ministry of Agriculture

Morocco
A. Hafraoui — Rabat
Chef du Service central de la protection des végétaux et de la lutte antiacridienne
Ministère de l'agriculture et de la réforme agraire

Niger
Ismaël Mouddour — Niamey
Chef du Service de la protection des végétaux

Nigeria
Olaniran A. A. Kupoluyi — Kaduna
Head, Crop Protection, Federal Department of Pest Control Services

Pakistan
Farid Uddin Ahmad — Karachi
Plant Protection Adviser/Director, Department of Plant Protection, Min. Food & Agriculture

Qatar
Al-Kawari Abdulla Mohd — Doha
Head of Plant Protection

Saudi Arabia
Salem S. Bamofleh Hadramy — Jeddah
Director General, Agricultural Research Centre

Senegal
Dacuda Diagne — Dakar
Directeur de la protection des végétaux
Ministère du développement rural

Syria
Zafer Al-Yafi — Damascus
Ministry of Agriculture & Agrarian Reform

Tanzania
Khamisi Salum — Dar-es-Salaam
Director, Extension & Technical Services
Ministry of Agriculture

Tunisia
Sadok Allaya — Tunis
Sous-Directeur de la Défense des Cultures
Direction de la production végétale
Ministère de l'Agriculture

Uganda
Mansoor Simbwa-Bunnya — Kampala
Permanent Representative (Designate to FAO)

United Arab Emirates
Essa Obaid Busamra — Dubai
Director, Plant Protection Section

United States of America — Hyattsville
Shannon Wayne Wilson
International Program Coordinator, Plant Protection & Quarantine Program
U.S. Department of Agriculture

Carrol W. Collier — Washington
Pest Management Specialist

Yemen, People's Democratic Republic
Fadhle H. Ambool — Aden
Director of Research & Extension Department
Ministry of Agriculture

OBSERVERS

Desert Locust Control Organization for Eastern Africa (DLCO-EA)
Mohamed Osman Nurein — Addis Ababa
Director, Scientific Research

International Red Locust Control Organisation for Central and Southern Africa (IRLCO-CSA)
M. E. A. Materu, Director — Mbala

Organisation commune de lutte antiacridienne et de lutte antiaviaire (OCLALAV)
D. Affoyon — Dakar
Directeur technique

Organisation internationale contre le criquet migrateur africain (OICMA)
H. S. Alomenu — Bamako
Directeur général

FAO STAFF

R. J. Pichel, Special Assistant to the Director, Plant Production & Protection Div.

-R. M. Skaf, Senior Officer,
-J. Roffey, Agricultural Officer
-J-L Van Hamme, Synoptic Meteorologist
-J. U. Hielkema, Technical Officer (Remote Sensing)
-H. Niggemann, Agricultural Officer (Operations)

Locusts, Other Migratory Pests & Emergency Operations Group, Plant Protection Service AGP

R. Traboulsi, Programme Manager, Action Programme for Improved Plant Protection
Plant Protection Service AGP

Regional Staff (FAO)

A. Khasawneh - Near East Commission, Jeddah
N. Mahjoub - North-West Africa Commission, Algiers
M. A. Farah - FAO Regional Plant Protection & Locust Officer for Eastern and Southern Africa, Nairobi

AGENDA

1. Opening of the Session (10.00 hours)
2. Election of the Chairman and Vice-Chairman
3. Adoption of the Agenda
4. Election of the Drafting Committee
5. Desert Locust situation summary and forecast up to 31 December 1982
6. Anti-locust measures undertaken by various countries and regional organizations (1982)
7. Assistance provided to countries and regional organizations during 1982 (FAO and donors)
8. Review of the existing control potential at national and regional levels
9. Reporting and forecasting
10. Review of remote sensing applications to desert locust survey and control and suggestions for further activities
11. Review of work at desert locust field research stations and suggestions for future activities
12. Coordination with UNDP/FAO Action Programme for Improved Plant Protection
13. Training
14. Trust Fund 9161 - contributions and expenditure
15. New scale of contributions
16. Status of various desert locust regional organizations/commissions:

    (a) South-West Asia Commission
    (b) Near East Commission
    (c) North-West Africa Commission
    (d) DLCO-EA
    (e) OCLALAV
    (f) OICMA
    (g) IRLCO-CSA

    and follow-up of recommendations taken at their annual meeting.
17. Mandate of the Desert Locust Control Committee (DLCC)
18. Any other business
19. Date and place of next session
20. Adoption of the Report

SUMMARY OF DISCUSSIONS

The Desert Locust situation, October 1981 - September 1982 and forecast up to 31 December 1982

1. The Committee reviewed the Desert Locust situation from October 1981 to September 1982 (Appendix I). It noted that a third generation of breeding had occurred in Mauritania in October-November 1981 which had resulted in the production of a number of small swarms. Aerial and ground control operations were mounted against 1 400 hectares of adults and 30 hectares of hopper bands in November and December. Most swarms moved north and considerable numbers of adults reached northern Western Sahara and some adults reached southern Morocco and the Canary Islands. Although favourable breeding conditions were observed during the spring of 1982 there had been no further reports of these populations or their progeny. Summer rainfall in the recession area of Mauritania, Mali and Niger in 1982 had been generally below average and only small numbers of adults had been reported in West Africa in summer 1982. There were no reports of summer breeding in southern Algeria.

2. In the Central Region adult populations built up on the Red Sea coast of Sudan and started to breed in November 1981. Control operations commenced in October and continued until March 1982. Breeding also occured along the Red Sea coast of Eritrea as dense groups of hoppers and adults crossed the border into Sudan. Rainfall was below average in the interior of Sudan in the summer of 1982 and no locusts had been reported. Only small populations were reported from the northern Somali coast in early 1982 but, following heavy and widespread rain in late March and early April, successful breeding occurred. In late May and early June control operations were undertaken in Djibouti and north-west Somalia against late instar hoppers and fledglings. Subsequently only a few adults persisted. Only small numbers of adults were reported from Saudi Arabia, Yemen AR and Yemen PDR in the winter of 1981-82. Small-scale breeding commenced in Yemen PDR in February 1982 and large scale breeding occurred between April and June following widespread heavy rain in late March-early April. A swarm, which probably originated in Djibouti/ north-west Somalia, reached Yemen PDR in early June and later scattered and laid in the interior. Patchy breeding was reported in several localities of Yemen PDR in September 1982. Further north one small swarm of mature yellow locusts appeared at Sana'a and Najran in late August.

3. In the Eastern Region there were widespread heavy winter-spring rains in southern Iran and Baluchistan of Pakistan. In Iran no locusts were reported until early June when it was found there were bands and groups of hoppers of all instars and fledglings over an area of 270 square kilometres on the coastal plains around Chahbahar and another infestation covering 20 square kilometres was later found around Iranshahr. Aerial and ground control operations were successfully carried out and 290 square kilometres were treated. In Pakistan there was late spring breeding in Kharan and Gwadar areas and 770 square kilometres were treated by ground and aerial units. In August three small swarms were controlled in the Las Bela district but not before laying occurred. Hatching commenced in late August but the hoppers were completely controlled in September. Large numbers of adults occurred at many localities in the Tharparkar, Khipro, Nara and Cholistan deserts and localised low density breeding occurred in August-September. Preventive control operations were undertaken against the denser populations. Between 19 and 24 September three immature swarms were located and aerially sprayed near Khokropar. In India, as in Pakistan, 1982 monsoon rainfall was patchy and very favourable ecological conditions were restricted to small areas along the border with Pakistan west of Barmer, where the three swarms reported in mid-September probably originated. There were also considerable numbers of low density adults and some hopper concentrations in west Rajasthan in September and small scale control operations were undertaken.

Summary of forecast up to 31 December 1982

4. There were considerable numbers of escapes including some small swarms from spring breeding in Djibouti, north-west Somalia and probably south-eastern Iran, but the number of adults reported to have reached summer breeding areas was generally low. Rainfall was generally below average in the summer breeding areas of Mauritania, Mali, Niger, Sudan, Pakistan and India. There is no quantitative information about rain in the interior of south-west Arabia. Breeding has probably occurred throughout this belt but will generally be at low density although in the interior of south-west Arabia, Las Bela and the desert areas of Pakistan and north-west India some hopper bands have been or may be produced. The monsoon retreated in early September so that, if ecological conditions remain unfavourable, breeding will be limited and will not result in the production of swarms. Adults produced by summer breeding in the Sahel are likely to move north and north-west in small numbers and reach central and western Algeria and some may reach southern Morocco and Western Sahara. Those from the interior of Sudan and south-west Arabia will converge on the Red Sea and Gulf of Aden coastal plains and start to breed. Emigrants from the Indo-Pakistan breeding areas will reach Baluchistan of Pakistan and perhaps south-eastern Iran, Oman and the United Arab Emirates.

5. The Committee considered that the overall situation presented no immediate or serious threat due to the effective control operations which had been mounted during the spring and summer in the Central and Eastern Regions. It noted, however, that the Desert Locust still constitutes a major potential threat requiring continuous vigilance and recognized that it was important to strengthen the control capabilities of individual countries and to improve cooperation between neighbouring countries.

6. The Committee again expressed its concern about the lack of surveys in the OCLALAV area since locusts produced in this area presented a major threat not only to member countries of OCLALAV but also to the countries of the North-West African region. Lack of regular and timely surveys also prevented the preparation of precise forecasts and resulted in some countries spending large amounts of money in making preparations for large campaigns which did not materialize.

Anti-locust measures undertaken by various countries and regional organizations, October 1981 - September 1982

7. The control operations undertaken against the desert locust between October 1981 and September 1982 are shown in Appendix II. They are based on information provided in the monthly locust situation summaries, supplemented by information provided by delegates and observers.

Assistance provided to countries and regional organizations during 1982 (FAO and donors)

8. The assistance provided by FAO/UNDP and various donors during 1982 is summarized below:

UNDP

- The UNDP has approved project YEM/81/009 for the Yemen Arab Republic for 1982 and 1983, amounting to U.S. $256 000.

- The UNDP has approved project PDY/81/008 for the People's Democratic Republic of Yemen for 1982 and 1983 amounting to U.S. $146 000.

- The UNDP project "Assistance to OCLALAV for Desert Locust Control" (continued in 1982 under the symbol RAF/81/020 with a budget of U.S. $197 500). The project will be extended during 1983.

- Under the project "Action Programme for Improved Plant Protection" the UNDP continued to finance the post of Regional Plant Protection and Locust Officer in Eastern and Southern Africa in 1982.

Morocco

Morocco made 20 000 litres of Dieldrin 20% at the disposal of OCLALAV at Casablanca.

France

France continued to assist OCLALAV by providing the resources of two technical advisors, two pilots and two airoraft engineers. In addition an amount of FF 150 000 was allocated for a restructuring study.

Austria

Austria offered a sum of CFAF 8 million (about U.S. $22 000) to OCLALAV for the purchase of insecticides for locust control.

Japan

Japan signed a trust fund agreement with FAO for the provision of fenitrothion to regional locust control organizations for a total amount of U.S. $600 000 over a three-year period.

FAO

- FAO assisted various countries and desert locust regional organizations using the various trust funds at its disposal.

- FAO agreed to finance its participation in the proposed restructuring (audit) study of OCLALAV to be undertaken jointly by FAO/UNDP/France and OCLALAV during 1983.

9. The Delegate of Iran informed the Committee about the urgent need to replenish their insecticide supplies for locust control. The Committee considered that insecticides available at international buffer stocks in Pakistan should be delivered to Iran as a matter of priority.

10. Assistance to OCLALAV was discussed and the Committee requested FAO to seek all possible means to provide adequate assistance to that regional organization in order to ensure that field surveys can be undertaken at appropriate times. At the same time, while recognizing that in West Africa, breeding areas occur generally in remote desertic regions, the Committee was of the strong opinion that individual member countries concerned should strengthen their national plant protection services in order to assist in desert locust survey and control operations. This should be kept in mind by the Action Programme when envisaging the strengthening of these services in OCLALAV member countries.

11. Assistance to OCLALAV was further complicated by the fact that this regional organization deals not only with locust control but also with grain-eating birds, thus making it difficult to supervise the destination of any assistance. In this context, the Committee considered the restructuring study to be undertaken in 1983 as the right approach in the search for a solution to this problem. It learnt with interest that the terms of reference of the FAO formulating team now visiting the CILSS member countries for assessing the needs of crop protection services included the problem of desert locust control.

Review of the existing control potential at national and regional levels

12. In order to assess the available means for locust control in affected or threatened areas and to evaluate future needs, FAO tries to keep an up-to-date record of control potential in various countries and organizations. Such a record is given in appendix III.

Reporting and forecasting

13. The Committee studied the working paper which had been prepared by the Secretariat on reporting and forecasting activities since the Twenty-Fifth Session of the DLCC (Appendix IV).

14. Having welcomed the progress which had been made in strengthening the facilities at Headquarters, notably the provision of a synoptic meteorologist under the Belgian Trust Fund, the use of GTS synoptic data and the availability of new remote sensing data, recognizing the need for good data flows at all levels, and the need for good reporting and forecasting services at national, regional and inter-regional levels, the Committee recommended that FAO and the concerned organizations take all steps to strengthen national and regional reporting and forecasting services in order to provide more accurate forecasts.

15. The Committee welcomed the proposal to hold a workshop in reporting and forecasting for national and regional staff in 1983 which would cover the use of locust, meteorological and remote sensing data and would provide an opportunity to utilize the wealth of information contained in the recently published Desert Locust Forecasting Manual.

Remote Sensing application development for desert locust survey and forecasting

16. The Committee reviewed the activities carried out under the project during 1982 (see Appendix V). It expressed its satisfaction regarding the current semi-operational experiment on the use of NOAA/AVHRR data for monitoring changes in vegetation conditions in the desert locust recession area, undertaken by FAO, as a follow-on to Phase I project activities, in cooperation with NOAA and NASA. It was noted that remote sensing data could be of major benefit to the reporting and forecasting services for preparing more precise forecasts both at the regional and international levels. Furthermore, the timely availability of this type of data could considerably improve the efficiency and reduce overall costs of both aerial and ground survey operations.

17. The Committee noted with great interest that an International Training Course on Remote Sensing Applications for Desert Locust Survey and Forecasting will be held in Rome in November 1982, sponsored jointly by FAO, ESA, WMO and UNDRO. Twenty-four participants from eighteen countries within the desert locust invasion area were recently selected for this course.

18. The Committee was informed by the FAO Secretariat about the present status of Phase II of the project for which funding had been requested from USAID. Due to the fact that FAO could not meet a condition of the donor on committing its resources in advance for operational continuation of the monitoring system beyond the project period, implementation of Phase II through a USAID trust fund could not be realized. The Committee was further informed that current FAO policy dictates that operational activities should be field based. To this effect, the FAO Secretariat will prepare a revised Phase II project proposal.

19. The Committee considered that parallel to the development of Phase II, adequate steps should be taken in order to secure a permanent and continuous financing of annual activities following the end of Phase II. It therefore requested the Secretariat to prepare a document containing a full report of the results achieved under this activity during the last five years and concrete proposals regarding the financing of an ultimate fully operational satellite moitoring system for the desert locust, covering the entire recession area. This document was requested to be sent to all member governments for review and action, to be discussed at the next session of the Committee.

Review of work at desert locust field research stations and suggestions for future activities

20. Egypt:

- Research is continuing at Dokki research station on alternative insecticides to replace persistent insecticides. Some 17 products are being tested and results seem seem to be promising.

- Research on juvenile hormones was also continuing.

- Ecological studies are being undertaken in oases and in areas recently developed for agriculture.

21. Saudi Arabia: Research on alternative insecticides is continuing. In 1982 this activity was handicapped by lack of sufficient number of locusts to permit reliable field trials.

22. Algeria and OCLALAV: Study of previous areas where breeding and gregarisation had occurred is underway. This has already improved the understanding of local movements and breeding patterns and made possible a better organization of field surveys.

23. The Committee reiterated the need for continuing field research along the priority areas identified by the DLCC in 1980. This will require adequate staffing, training of personnel and an increased international cooperation. Specific research, such as finding alternative insecticides to BHC and dieldrin should also involve the interest of specialized institutions in developed countries. The Committee also requested that the results of research undertaken at field research stations should be made available to all countries and regional organizations and to the DLCC.

Coordination with UNDP/FAO Action Programme for Improved Plant Protection

24. The Committee heard a statement on the background, objectives and achievements of the UNDP/FAO Action Programme for Improved Plant Protection (Appendix VI). It was emphasized that the Action Programme was a means by which developing countries and donor countries could coordinate action to strengthen national plant protection services; it was not a financing programme but it was recognized that a core fund was required to support certain activities such as training, meetings and documentation which were not covered by other programmes and projects.

25. A total of 26 Developing countries were now participating in the Programme. There were no specific crtieria to be met before a country could participate.

26. The main activities consisted of preparing profiles of plant protection activities in countries affected by the Desert Locust and in assessing their needs. Already profiles had been prepared for 11 countries, another three were in preparation and a mission was in the process of visiting Sahelian countries at the request of CILSS. In addition comprehensive directories of formal education in agriculture and short courses in plant protection were being built up. Greater emphasis was being given to training and documentation.

27. The Committee noted with approval that regional organizations were to be included in the Programme's activities.

Training

28. The Committee took note of the activities under the training programme (Appendix VII).

29. The Committee appreciated FAO efforts to provide short-term training on specific activities such as agricultural aviation, spraying technology, etc. It recalled previous committee recommendations which insisted that priority be given to short and medium-term training and fellowships and took note of the fact that similar recommendations were taken by all the FAO regional locust commissions.

30. In this respect it was considered that in exploring and arranging training facilities and programmes, special attention should be given to regional training courses involving several countries, in close collaboration with regional organizations. Special emphasis was given to training in radio use and maintenance.

Trust Fund 9161 - Contributions and expenditure

31. The Committee was presented with a statement on the budget, statement of accounts for 1981 and an estimate of expenditure for 1982 (Appendix VIII). The fund is being built up gradually but some countries continue to have arrears of payments for several successive years. The Committee urged these countries once again to pay their contributions.

32. Expenditure during 1981 and early 1982 was on a reduced scale in order to avoid creating a deficit, as had occurred in the past, and to build up funds to meet unforeseen future expenditure. Expenditure in 1981 concentrated mainly on consultancies, non-staff travel and printing expenses. Expenditure and commitments in 1982 relate mainly to consultancies, printing, special assistance to OCLALAV and to short-term training courses.

33. It was pointed out that the expense related to the ad hoc technical consultation meeting to discuss the terms of reference of the DLCC amounting to U.S. $9 000, was not charged against TF 9161 but charged to the FAO Regular Programme.

34. The Committee accepted that budget and accounts with some minor changes as presented by FAO. Concerning the 1982 budget it was pointed out that available funds from two locust emergency projects (TF 9577 and TF 9462) amounting to U.S. $60 354 were transferred to TF 9161 and are thus available for future expenses.

35. The Committee was informed that with the withdrawal of Turkey from the DLCC its contributions had ceased.

International Trust Fund 9161 - proposed new scale of contributions

36. The Committee again reviewed the proposed new scale of contributions to the International Trust Fund 9161 which had been circulated to governments and agreed to a new total annual contribution of U.S. $200 000. The Committee agreed that the new scale of contributions should be calculated on the same criteria as those used when the fund was first established in 1964, namely the frequency of Desert Locust infestations, the area of arable land and land under permanent crops vulnerable to damage and the capacity of a member government to pay subject to a maximum contribution of 10% by any one country. Appendix IX shows the new scale of contributions which has been prepared on up-dated data. The Committee requested FAO to communicate the new scale of contributions to governments.

Status of various desert locust regional organizations/commissions

37. The Committee reviewed a document prepared by the Secretariat concerning the status of various regional control organizations and desert locust commissions. The document, as amended by participants, including information received during the Session, appears in Appendix X.

38. The Committee, while appreciating the amount of information given on the activities of regional organizations/commissions, was of the opinion that the annual statement should give more details about the locust situation in each region concerned, the general situation of the regional organizations, their technical activities and ways and means of improving their ability to meet their normal obligations during recession periods and to face emergency situations if and when they occur.

39. The Committee was pleased to note that the financial situation of DLCO-EA and IRLCO-CSA had improved, thus permitting an adequate running of their activities, and that the member countries were regularly paying their contributions and all their arrears. This was most encouraging. It regretted that this was not the case for OCLALAV and OICMA which are facing very serious financial difficulties which cannot be ignored. The time had come to review urgently the status of both organizations in order to find sound and permanent solutions, it being understood that short-term solutions and assistance cannot secure the survival of these organizations, neither guarantee their efficiency and ability to confront upsurge situations. The Committee requested FAO to review the functions, structure and financing of OICMA.

Mandate of the DLCC

40. Following the recommendation of the DLCC taken at its 25th Session, Rome 5-9 October 1981, FAO convened an ad hoc working group in June 1982 to study this problem in detail and to report its conclusions to the 1982 session.

41. The Committee reviewed the report of the ad hoc working group which appears at Appendix XI and adopted its conclusions and recommendations which are summarized below:

(a) The DLCC should be primarily concerned with the desert locust and the resources of TF 9161 should strictly be used on desert locust activities.

(b) There is a need for an official international forum for the organizations concerned with control of the African Migratory Locust and the Red Locust (OICMA and IRLCO-CSA); this, however, is now possible within the existing terms of reference of the DLCC which at the moment need not be changed.

(c) Emergency situations concerning migrant pests other than the Desert Locust can be tackled by the Advisory Panel on Emergency Action. The composition of the panel should be expanded to include one additional alternate to ensure adequate representation on the panel of expertise on migratory locusts and crop pests other than the Desert Locust.

(d) FAO would continue to seek additional support for regional organizations, in particular OICMA and IRLCO-CSA.

Any other business

42. The Committee heard a statement from the U.S. delegate in which he stated that USAID was active in providing training in safe pesticide usage. A course was to be held in Mogadishu within the next six months and certain DLCO-EA personnel may participate. He also reported that USAID supports programmes for the safe, timely and proper disposal of existing pestioide stocks stored in leaking or highly corroded containers and of outdated stocks.

43. He also reported that further U.S. funding for migratory pest control programmes would only be available in disaster situations.

44. The Committee regretted that Turkey had withdrawn from the DLCC and requested FAO to approach the Turkish authorities to reconsider their decision.

Date and Place of next session

45. The Secretariat informed the Committee about the decision of the Administration not to hold a meeting in 1983 for financial reasons related to the FAO regular budget 1982-1983.

46. The Committee was of the strong opinion that the success of desert locust prevention strategy was due to the regular follow-up of various activities and to the necessary preventive and development measures carried out during recession periods. All these considerations were in favour of annual meetings as has always been the case since the establishment of the DLCC.

47. The Committee therefore recommended that the Director-General of FAO convene the next session of its DLCC in October 1983 at FAO Headquarters, Rome.

APPENDIX I

DESERT LOCUST SITUATION SUMMARY & FORECAST UP TO DECEMBER 1982

THE DESERT LOCUST SITUATION, OCTOBER 1981 - SEPTEMBER 1982

The main features

1. Following good monsoon rains in Mauritania in 1981 there were three generations of breeding, the last in October-November resulted in the production of several small swarms despite aerial and ground control operations. Most of these moved north into Western Sahara in December but only small numbers of adults have been reported subsequently in West Africa. In late October and early November considerable numbers of adults reached northern Western Sahara and some reached southern Morocco and the Canary Islands but there were no reports of spring breeding in N.W.Africa. In Sudan control operations were undertaken against groups of hoppers and adults along the Red Sea coast between October and March. There were widespread heavy rains in late March and early April over the Yemens, Djibouti, north-west Somalia and eastern Ethiopia, following which there were locally dense hopper infestations in Djibouti in May and less dense in infestations in Yemen PDR and north-west Somalia. Control operations were mounted but at least one swarm escaped and laid in the interior of Yemen PDR and possibly in the estern Rub al Khali. Mature adults in large numbers reappeared in the highlands of the Yemen Arab Republic, the Asir of Saudi Arabia in late August and in the interior of Yemen PDR in late August and September.

2. There were widespread heavy rains in south-eastern Iran between December 1981 and May 1982 and in Baluchistan of Pakistan between January-March. Breeding occurred in both areas and gave rise to groups of hoppers and fledglings in June and July. Control operations took place over 29 000 hectares in Iran and 77 200 hectares in Pakistan but at least three swarms and some groups of adults were formed. Localised heavy rain fell in the summer breeding areas of Pakistan and India in mid and late July and again in late August and produced good breeding conditions in Las Bela district and along the Indo-Pakistan border west of Barmer. Hopper bands were controlled in the former area in late August - early September. Three young swarms were produced in the latter area and were controlled in mid-September. Control operations were carried out against concentrations of hoppers and adults in several localities during September.

West Africa

3. In Mauritania there were widespread rains in May and June 1981 which resulted in two generations of breeding up to September. Further rain in August and September allowed a third generation in October and November which included the production of hopper bands and a number of mainly small swarms in November. Altogether some 50 reports of swarms were received. Aerial and ground control operations were mounted against 1 400 hectares of adults and 30 hectares of hopper bands. Most swarms moved north into Western Sahara but some moved west towards the coast and some south to the Senegal river. The last swarm was seen on 3 January. No further surveys were conducted up till August and only small numbers of adults have been reported. There were widespread good rains in the third decade of August.

4. Early monsoon rains fell in the Adrar des Iforas in Mali and Afr in Niger in June 1981 and there were further rains in July and August. Control operations were carried out in both areas between July and October 1981 following which only low density adult populations were reported in November and December. No surveys were conducted in 1982 until August. There were no reports of locusts in Mali and only small numbers in Niger. There was heavy localised rain in Tamesna, the southern Adrar des Iforas and in Niger north of 16°N.

North-West Africa

5. After the control operations against hopper bands and adults to the west and south-west of the Ahaggar in southern Algeria in September 1981 only small numbers of adults were recorded in Algeria in late 1981. There were moderate rains in January and February in northern central Algeria but only light and scattered rain in southern Algeria. Small numbers of adults continued to be found in central and western Algeria up till April 1982. Recent surveys in southern Algeria indicate that there are no areas suitable for breeding.

6. In late October and early November 1981 considerable numbers of adults reached northern Western Sahara and small numbers reached southern Morocco and the Canary Islands. On 2 November a small low density swarm was seen south-west of Aioun, in early November about 100 adults were captured on the Canary Islands (the first report from the Islands since 1964) and on 16 November day-flying adults were seen at Dakhla in Western Sahara. Southern Morocco received good rains in January and again in April and there was evidence of good rains in the Adrar Soutouf of southern Western Sahara. Small numbers of adults continued to be found in southern Morocco up till April 1982 but there were no reports of breeding.

7. In Libya aerial and ground control operations were mounted against mixed populations of the Desert Locust and the African Migratory Locust at the Sarir Agricultural Project in November 1981 and again in January and February 1982 over an area of 4 200 hectares. 6 300 litres of pesticide were used. A further 3 038 hectares were controlled by ground and aerial spraying and baiting at Kufra in April-May 1982. No locusts were reported from Tunisia.

Eastern Africa

8. In Sudan groups of mature adults locusts appeared at Khor Balatat on the southern section of the Red Sea coast near the Ethiopian border and adults at lower densities were found in the Tokar delta in October 1981, and ground control operations commenced. In mid-November further groups of adults were found at five localities on the northern section of the Red Sea coast. Hatching commenced in late November in the Tokar delta where baiting continued. There was further hatching and control during December, January and February against hoppers and adults in the Tokar delta and at Khor Balatat. There was also evidence of breeding on the northern Red Sea coast of Ethiopia as dense groups of hoppers and adults invaded Sudan from across the border. During March successful ground control continued against groups of hoppers and adults in the Tokar delta and close to the Ethiopian border and by April only scattered adults were present. Summer rains were generally below average in the interior. There were no reports of locusts from the summer breeding area in 1982.

9. In Somalia there was little rain on the north-western coastal plains during the winter and early spring, and no locusts were reported. In late March there were widespread heavy rains in this area, Djibouti and adjacent areas of eastern Ethiopia. In April solitarious adults were found at several localities between Silil and Balhar and breeding commenced for in late May dense infestations of late instar hoppers and fledglings were found south of Djibouti mixed with Locusta, Cyrtacanthacris and other grasshoppers. These were ground sprayed. In early June solitarious fledglings were found at numerous localities between Lukhaya and Silil. By late July numbers had declined and only very low density populations remained (see paragraph 12). No locusts were reported from other countries in the region.

Near East

10. In the People's Democratic Republic of Yemen there were small numbers of adults and limited breeding in the western part of the country in late 1981. In January and February 1982 there were light to moderate rains in many coastal and some interior areas and conditions become favourable for breeding. Some copulating adults were seen in cultivations east of Shuqra and in March hoppers of all instars were found in the same area. In late March there was widespread heavy rain over much of western Yemen PDR. In April adults were also found west of Aden and in May further breeding was detected east and west of Shuqra. Control operations were undertaken using 830 litres of dieldrin and 650 kg of BHC dust.

11. On 4 June 1982 a swarm measuring 10 square kilometes was seen flying over Shuqra in strong southerly winds. The swarm was followed by a ground party and was seen to split up in the Shabwa area. In mid-late August patches of hoppers of all instars and adults were found in two areas totalling 10 square kilometres in wadi Markah which were controlled using 213 litres of dieldrin and there were further good rains extending from Aden to the wadi Hadhramaut. In late August and early September further patches of mature adults were found at several localities in the interior.

12. During July and August there were a number of reports of locusts from ships in the Gulf of Aden and Arabian Sea which suggested that adults continued to emigrate from the breeding areas in Djibouti and north-west Somalia over a period of about 2½ months.

13. In the Yemen Arab Republic only small numbers of adults were seen on the Tihama in late 1981 and up till April 1982. On 21 August 1982 groups of mature adults reached Sana'a and probably other areas in the highlands from the east, possibly representing survivors of the swarm seen in Yemen PDR in June. Breeding may have occurred in the eastern lowlands contemporaneously with the breeding in wadi Markah (see paragraph 11).

14. In the Kingdom of Saudi Arabia there were widespread and heavy rains in many areas in January and February and again in April and conditions became favourable for breeding in some parts of the Tihama and in the interior. However only small numbers of adults were reported from the southern Tihama between October 1981 and May 1982. On 21 August mature adults at high densities reached Najran. Breeding may have occurred in western parts of the Rub al Khali contemporaneously with the breeding in wadi Markah (see paragraph 11).

15. In the United Arab Emirates there was widespread heavy rain in February and March 1982 throughout the country and conditions became very favourable for breeding. No locusts were reported in late 1981 and only small numbers were seen between March and July.

16. In the Sultanate of Oman there was widespread heavy rain in the north of the country in February and March 1982. During a detailed ground survey in late May and early June small numbers of hoppers and adults were seen in Ibri and Sharqiyah.

17. Small numbers of adults were seen in the south-eastern desert of Egypt between February and June 1982. No locusts were reported from other countries in the region.

South-West Asia

18. In Iran exceptionally heavy and widespread rains were reported from southern Baluchistan between December 1981 and May 1982. No locusts were reported until early June when it was found that there were bands and groups of hoppers of all instars and fledglings, 90% showing gregarious coloration, over an area of 270 square kilometres on the coastal plains around Chahbahar. Later, another infestation of hoppers and adults covering 20 square kilometres was found around Iranshahr. Aerial and ground control operations treated 315 square kilometres up to mid-July.

19. In Pakistan small numbers of adults were reported from both summer and winter breeding areas in October and November 1981. There were widespread and heavy rain in the winter-spring breeding area between January and March 1982. In late March, April and early May small numbers of adults were found in the Uthal, Khuzdar, Kharan, Panjgur, Turbar, Pasni and Nushki areas of Baluchistan. In the second half of May the maximum density of adults had risen to 4 200 per square kilometre in the Shooli area (2536N/6206E) close to the Iranian border. In early June a small group of mature adults was reported from Pasni and thin group of immature adults from Kharan. In late June and up to mid-July aerial and ground control operations were conducted against hoppers and adults over 430 square kilometres in Kharan and 342 square kilometres in Gwadar districts, using 4 200 litres of dieldrin and 1 375 kg of BHC dust.

20. In August three thin density swarms were controlled in Las Bela district but not before laying occurred. Hatching commenced in late August and 77 hopper bands were controlled by spraying and baiting. Preventive control operations were carried out in several localities of Tharparkar and Nara deserts against hoppers and adults. Between 19 and 24 September three young swarms were controlled near Khokropar.

21. In India monsoon breeding in 1981 was on a very small scale and numbers of adults declined rapidly to a maximum of 75 per square kilometre in December and 37.5 in January. Small numbers of adults were again found in April, May and June and by July the maximum density was 2 625 per square kilometre. There were moderate to good rains in Rajasthan in July and patchy heavy rains in August. Small scale breeding commenced in July. In August the maximum density of adults reported had increased to 4 725 per square kilometre. In September two swarmlets were reported in Sheo Tensil of Barmer district and small scale control operations were mounted in that area and near Kishengarh in Jaisalmer district.

22. There were no reports of locusts from Afghanistan.

FORECAST TO 31 DECEMBER 1982

23. There were considerable numbers of escapes including at least two swarms from spring breeding in Djibouti, north-west Somalia and south-eastern Iran, but the number of adults reported to have reached summer breeding areas has generally been low. Rainfall has been about average or above average in the summer breeding areas of Mali, Niger, Pakistan and India, but below average in Mauritania. There is no information about rainfall in the interior of Sudan and no quantitative information about rain in the interior of south-west Asia. Breeding will occur throughout this belt but will generally be at low density in the first generation although in the interior of south-west Arabia, Las Bela and the desert areas of Pakistan and north-west India some hopper bands have been or may be produced. The monsoon retreated in early September so that if ecological conditions remain unfavourable breeding will be limited and will not result in the production of swarms. Adults produced by breeding in the Sahel are likely to move north and north-west in small numbers in the second half of October and early November and reach central and western Algeria and some may reach southern Morocco and Western Sahara. Those from the interior of Sudan and south-west Arabia will converge on the Red Sea and Gulf of Aden coastal plains and start to breed. Emigrants from the Indo-Pakistan breeding areas will reach Baluchistan of Pakistan and perhaps south-eastern Iran, Oman and the United Arab Emirates.

24. In West Africa small scale breeding has almost certainly occurred in Mauritania, Mali and Niger. Even if there is a second generation only small numbers of adults are likely to be produced, some of which will persist during the dry season.

25. In North-West Africa small numbers of adults will reach central and western Algeria in the second half of October and early November and some may reach southern Morocco and Western Sahara.

26. In Eastern Africa adults will start to converge on the Red Sea coastal plains of Sudan and northern Ethiopia between late September and November, and will concentrate in areas such as the Tokar delta which have received floods from summer rains in the mountains, or which have received early winter rains. Breeding is likely to commence in October and may result in the formation of hopper groups and even some small bands. Some adults are likely to persist on the coastal plains of north-west Somalia and may start to breed. It is possible that adults may reach Djibouti, southern Eritrea, north-west Somalia and adjacent areas of eastern Ethiopia from Arabia during September or early October. These may start to breed on the coastal plains of north-west Somalia.

27. In the Near East escapes from summer breeding in the interior of south-west Arabia are likely to move west or south and reach the coastal and sub-coastal plains of the Yemen Arab Republic, the People's Democratic Republic of Yemen and the southern Tihama of Saudi Arabia. Breeding is likely in all these areas and may be on scale sufficient to produce hopper bands. Breeding may also continue in the interior of the two Yemens, again on a scale sufficient to produce bands. Small numbers of adults may reach the central and northern Tihamas of Saudi Arabia, the south-eastern desert of Egypt, the United Arab Emirates and Oman in late October and early November.

28. In South-West Asia there has been generally low density breeding in Rajasthan of India, and the Cholistan, Nara, Khipro and Tharparkar deserts of Pakistan. As the monsoon withdrew early further breeding will be on a small scale. There has been patchy gregarious breeding in Las Bela district and band formation is more likely. Most adults produced will move west to coastal areas of Baluchistan in late October and early November and some may reach south-eastern Iran.

APPENDIX II

ANTI-LOCUST MEASURES UNDERTAKEN BY VARIOUS COUNTRIES AND REGIONAL ORGANIZATIONS, OCTOBER 1981 - SEPTEMBER 1982

Country, Locality	Month, year	Type of infestation	Infested/ treated area (km^2)	Insecticide used	Method of application
Mauritania (by OCLALAV)					
Trarza, Tagant	Nov-Dec 1981	Swarms, hopper bands	14.3	977 l dieldrin 5%	Ground, air
Libya					
Sarir	Nov 1981-Feb 1982	Groups of hoppers & adults	42	6 300 l	air, ground
Kufra	Apr-May 1982	Groups of hoppers & adults	30.4		air, ground
Sudan					
Red Sea coast	Oct 1981-Mar 1982	Groups of hoppers & adults		158 800 kg BHC bait	ground
				4 745 kg BHC dust	ground
				204 l malathion 96%	air
				812 l fenitrothion 96%	air
Djibouti					
Atar	May 1982	Groups of hoppers & adults			
Yemen PDR					
Shuqra	May-June	Groups of hoppers & adults	14.5	750 kg BHC bait	ground
Wadi Markah	Aug-Sept	Groups of hoppers & adults	10	830 l dieldrin 20%	ground
				213 l dieldrin	
Yemen Arab Republic					
Sana'a	August	Swarm		BHC bait	ground
Iran					
Chahbahar	June-July	Hopper bands, adults groups	270		ground air
Iranshahr	June-July	Hopper bands, adult groups	20		ground air
Pakistan					
Kharan, Turbat Gwadar	June-July	Hopper bands & groups Fledglings, adult groups	772	2 827 kg BHC dust	ground
				4 658 l 10% dieldrin	air
Las Bela	Aug-Sept.	Swarms, hopper bands & groups		600 kg BHC dust	ground
				700 l 10% dieldrin	ground
Tharparkar, Nara deserts	September	Hopper. & adult groups		1 225 l 10% dieldrin	ground
				234 kg BHC dust	ground
		Swarms		3 310 l 10% dieldrin	air
				600 l fenitrothion 96%	air
India					
Barmer	September	Groups of hoppers & fledglings	0.06	100 kg BHC dust	ground

APPENDIX III

REVIEW OF EXISTING CONTROL POTENTIAL AT THE NATIONAL AND REGIONAL LEVEL

In order to assess the available means for locust control in affected or threatened areas and evaluate future needs, FAO tries to keep an up-to-date record of control potential in various countries and organizations. Such a record is given in the table on the following page.

It should be noted that the information on application equipment and vehicles in several cases relate to both locust control and general plant protection, and that some of the vehicles are quite old and will soon be out of service. It should also be kept in mind that the postion of the stocks of insecticides is changeable.

REVIEW OF THE EXISTING CONTROL POTENTIAL AT NATIONAL AND REGIONAL LEVELS

Country or Organization	Insecticides (tonnes/litres x 10^3)							Sprayers			Dusters		Vehicles			Aircraft				Staff	
	Total/billions lethal doses	Dieldrin 20% or equivalent	Fenitrothion 96% or equiv.	BHC liquid gamma 15%	BHC dust 25% or equivalent	BHC bait 0.1% gamma	Others	Exhaust nozzle	Manual	Power	Manual	Power	Light	Medium	Load carriers	Fixed wing, control	Fixed wing, transport	Helicopter	Radio	Technical	General
Cameroon	1272.5	-	28.4	-	195	-	-	-	42	-	9	-	1	5	3	-	-	-	-	15	59
Central African Republic	800	-	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	43
Gambia	Information not available																				
Ghana	-	-	-	-	-	-	100	-	280	200	-	-	-	-	-	-	-	-	-	-	20
Ivory Coast	Information not available																				
Mali	1294	0.75	21	25	420	-	-	6	-	110	40	99	6	5	6	-	-	-	-	-	-
Mauritania	678	6.6	9.9	3	150	0.8	-	3	360	10	2	20	5	2	-	-	-	-	-	-	-
Niger	3820	-	84	40	375	-	-	-	-	250	150	-	1	7	3	2	-	-	-	-	-
Senegal	1802	30	14	-	615	-	-	10	314	450	600	205	10	15	2	-	-	-	-	-	-
Upper Volta	396	-	5.9	-	200	-	-	11	-	100	-	-	2	-	-	-	-	-	-	-	-
OCLALAV	4236.5	127.7	26.1	-	-	-	-	50	-	-	-	-	30	16	9	4	1	-	44	32	150
Algeria	23148	-	600	-	6.8	7.9	800	20	-	1111	-	57	77	114	37	15*	3*	-	1	20	50
Libya	1317.9	40	34.6	30	46.4	100	63.3	4	-	24	-	16	35	15	4	*	-	-	8	-	4
Morocco	3811	-	20	-	490	400	47.6	37	-	6	12	-	21	-	9	-	-	-	-	-	-
Tunisia	1195	-	-	-	850	-	75	13	116	67	275	130	4	2	1	6	-	-	-	-	6
Djibouti	190.5	2.5	2.5	-	40	-	-	3	-	5	50	-	2	1	-	-	-	-	-	-	-
Ethiopia	1343	20.9	3.9	10.9	187	-	-	14	1108	1048	1427	-	-	-	-	-	-	-	-	-	-
Kenya	Information not available																				
Somalia	-	-	-	-	-	-	-	20	-	-	-	-	5	-	-	-	-	-	-	-	-
Sudan	9552.5	23.7	14.0	-	-	2800	-	20	1000	1000	-	40	43	-	50	3	3	1	25	15	70
Tanzania	Information not available																				
Uganda	Information not available																				
DLCOEA	6601.5	76	97.6	201.2	-	3.9	-	100	-	-	-	-	123	-	52	9	3	-	-	71	213
Bahrein	64	-	-	-	-	-	8	-	-	32	-	2	8	-	-	-	can be	-	-	-	16
Egypt	193.7	3	2	10	13	200	6	3	-	70	40	3	25	20	2	chartered			19	80	190
Iraq	98	2	-	-	-	-	6	20	1000	20	-	-	50	-	-	10	-	-	-	50	100
Israel	20	-	-	5	-	-	-	-	-	10	-	-	10	-	1	*	*	*	-	*	*
Jordan	67.2	2.5	-	1	1	1	1	2	1	50	10	2	8	2	-	-	-	-	5	15	50
Kuwait	366.3	13	-	-	59	-	-	-	-	32	15	9	3	7	-	-	-	-	-	33	120
Lebanon	88	-	-	12	-	-	5	-	14	-	-	-	5	-	-	-	-	1	-	22	20
Oman	11.4	1	-	-	2	-	4	4	-	130	-	1	6	-	-	-	-	-	-	12	160
Qatar	100	4	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2
Saudi Arabia	5407	150	22.5	-	225	-	75	80	-	80	-	142	120	-	15	can be chartered			-	10	119
Syria	452	4.2	-	9.5	400	-	7.5	13	256	-	230	204	-	-	-	8	-	-	-	-	-
United Arab Emirates	603.7	20	-	1	3	-	15	15	-	40	-	-	10	-	-	2	-	-	5	4	15
Yemen Arab Republic	1356.9	38	5	-	107	-	66	35	-	112	95	3	17	-	1	-	-	-	16	6	5
Yemen PDR	686	17	4	9	87	-	-	22	-	46	39	8	16	-	1	-	-	-	11	3	16
Afghanistan	-	-	-	-	-	-	-	10	40	10	50	1	4	2	4	-	-	-	10	64	45
India	1800	15	21.9	35	1360	-	34.7	34	-	-	11	183	97	-	7	28	-	5	58	123	130
Iran	607.1	-	-	10	8	-	-	32	1800	800	15	-	66	-	20	35	-	-	-	42	50
Pakistan	13751	150.8	240.2	60.6	182.1	108.7	-	64	-	-	146	3	95	-	16	22	-	-	-	164	330

*Available if necessary

APPENDIX IV

REPORTING AND FORECASTING

Activities since the Twenty-Fifth Session of the FAO DLCC

The Desert Locust Reporting and Forecasting Unit has continued to prepare monthly Desert Locust Situation Summaries on about the 20th of each month and to distribute it to approximately 275 addressees in English and 140 in French. The Unit has also prepared a Foodagram on about the 4th of each month which is despatched to the Locust Liaison Officers in each country, and sent by Telex to the Regional Organizations and Commissions. The Unit also prepared cabled warnings for India and Pakistan, the People's Democratic Republic of Yemen, Yemen Arab Republic, Kingdom of Saudi Arabia and DLCOEA.

Owing to delays in launching of Meteosat II and technical and procedural problems with the planned link between the European Space Agency (ESA) Meteosat receiving station at Darmstadt, West Germany, and the ESA receiving station at Frascati, Italy, the Unit has not had access to Meteosat imagery during 1982. For further activities in remote sensing please refer to Appendix V.

Two transceivers have been installed at Headquarters and satisfactory contacts have been made with the FAO North-West Africa Regional Commission in Algiers and with OCLALAV.

Visits to instal transceivers and to maintain existing equipment have been made to the following countries/commissions: Madagascar, Yemen Arab Republic (twice), People's Democratic Republic of Yemen, United Arab Emirates, Jordan and Iraq. For details of radio training courses see Appendix VII.

In January 1982 a new project "Strengthening Pest Surveillance and Forecasting with speoial reference to the Desert Locust" funded by the Belgian Government for a three-year period was approved. In July Mr. Jean-Louis Van Hamme was appointed as Synoptic Meteorologist at Headquarters and in October three Associate Experts will arrive at Headquarters to commence six months training prior to their posting to the field.

Mr. Van Hamme has already established close contacts with the Italian Meteorological Service, which is providing daily SYNOP data, facsimile maps of the main circulation features of Africa north of the Equator and Meteosat II imagery.

APPENDIX V

FAO DEVELOPMENT PROJECT ON REMOTE SENSING APPLICATIONS FOR DESERT LOCUST SURVEY AND CONTROL

1. Introduction

Phase I of the project under which remote sensing technique development and field testing, infrastructure development at regional/national levels and limited training were undertaken, was successfully concluded in December 1981 and reviewed by the 25th Session of the FAO Desert Locust Control Committee (DLCC) in October 1981. On the basis of the positive results of Phase I, a Phase II project programme having the objective of implementing a fully-operational satellite based monitoring and early warning system for the entire desert locust recession area, was prepared and submitted for funding to USAID. The FAO project proposal was strongly endorsed by the DLCC. In anticipation of the approval of funding for phase II various pre-operational preparatory activities were undertaken during 1982 which are summarised in this document.

2. Summary of late 1981/1982 project activities

(a) Remote sensing data field verification mission in West Africa

From 11 to 28 October 1981 a remote sensing data field verification mission was undertaken in the Adrar des Iforas, Mali, as part of a joint survey between OCLALAV, INPV (Algeria) and FAO. The objective of the mission was to field check processed Landsat MSS data according to the methodology developed by the project with regard to its value for mapping desert locust habitats through the spectral response of the vegetation/soils characteristics of specific habitats.

Very close agreement was found between the classes of the processed Landsat data and the different plant communities in the areas with preferred locust habitats clearly standing out in the major wadis. It was concluded that Landsat data processed in this way, combined with existing experience, could be of important value in establishing a base map showing the geographic distribution of different types of locust habitats, to serve as a base for monitoring of actual conditions in these habitats with lower resolution environmental and earth resources satellite data.

(b) Phase II project components formulation missions to the East Africa, Near East and South-West Asia Regions

From 26 January to 12 February 1982 a preparatory mission was undertaken to the East Africa and Near East Regions to formulate phase II project components for these regions in consultation with the management and technical staff from DLCO-EA in Addis Ababa/Nairobi and the Plant Protection Departments of Sudan and Saudi Arabia. From 15 April to 8 May 1982 a similar mission was made to India and Pakistan for briefings and consultations with management and technical staff of the Plant Protection Departments of both countries.

In part of both missions, a consultant from NASA/Goddard Space Flight Center (GSFC) participated in respect of ground data collection and formulation of the planned semi-operational monitoring programme for vegetation biomass change monitoring in the summer breeding areas in Africa, the Near East and South-West Asia from July - December 1982.

(c) Semi-operational experiment on vegetation biomass change monitoring in the desert locust recession area with NOAA/AVHRR data (July - December 1982)

In cooperation with NOAA/NESS and NASA/GSFC FAO is presently conducting a semi-operational experiment on the use of NOAA/AVHRR satellite data for detection and monitoring of vegetation biomass changes in the main summer breeding areas of the desert locust recession area.

In the experiment NOAA/NESS is cooperating by switching on the NOAA/AVHRR sensor every nine days over Mauritania/Western Sahara; northern Mali/Niger/southern Algeria; northern Chad/western Sudan; northern Somalia/Ethiopia; central/southern Saudi Arabia/ Yemen Arab Republic/People's Democratic Republic of Yemen; Oman; southern Iran/ Afghanistan/Pakistan and north-west India. The AVHRR data is recorded on board the satellite and transmitted to a ground receiving station when passing over the United States. The data is then processed in a georeferenced vegetation index format at the facilities of NASA/Goddard Space Flight Center, registered to a map projection and sent by pouch to FAO Headquarters where the processed data is analyzed and interpreted in combination with the current meteorological data coverage and locust information received from the countries and regions.

The first results of this experiment are very encouraging. Although the mechanism of data acquisition, data processing and data analysis/interpretation is rather elaborate due to the lack of local receiving/processing facilities, the processed data is normally available in Rome for analysis within ten days of acquisition. The data, having a 1 - 4 km spatial resolution, is processed in a georeferenced format, covering an area of 75 degree squares i.e. 750 000 km^2, simultaneously. This allows for a synoptic and yet detailed analysis of seasonal vegetation conditions in the summer breeding areas and the pinpointing of areas with a high potential for breeding. Furthermore, the multitemporal sequence of the satellite data for the same area during the season allows for the detection of those areas later in the season where populations are likely to concentrate due to deteriorating ecological conditions.

The data analyzed so far indicate that it is possible to detect even minor flushes of green vegetation as represented by the situation in the Adrar des Iforas, Mali and Aïr, Niger this year. Both vegetation flushes on the sandy plains and in the major wadis are detectable with the 1 km resolution.

The data coverage for Saudi Arabia, Yemen Arab Republic and People's Democratic Republic of Yemen showed substantial vegetation development at various locations in the interior of these countries. In India and Pakistan excellent breeding conditions were interpreted from the data for late August 1982 for the area east of Bikaner and south-west of Barmer in India and for the Las Bela region in Pakistan. From the latter two locations swarms were reported by the middle of September.

The cost of this type of ecological monitoring is extremely low. During the six-month period of the experiment, a total of over 5 000 000 km^2 will be monitored 10 times in near real-time for a total amount of ± US $25 000, ie: 0.005 US$/km^2. This amount covers the cost of data acquisition, archiving, retrieveal, processing (analyst) and dissemination.

On the basis of the first results of this experiment, it is concluded that the NOAA/AVHRR satellite data is very suitable for cost effective monitoring of seasonal vegetation biomass conditions in the desert locust recession area. Low cost operational availability, georeferenced uniform coverage over large areas, high repeat frequency and adequate information content for locust forecasting purposes are major factors in favour of the use of this satellite system for operational purposes in desert locust survey and forecasting. A complete technical report on the experiment will be prepared upon its termination in early 1983.

(d) FAO/WMO/ESA/UNDRO International Training Course on Remote Sensing Applications for Desert Locust Survey and Forecasting - Rome, 8-19 November 1982

In January 1982 it was decided between FAO, the European Space Agency (ESA), WMO and the United Nations Disaster Relief Organization (UNDRO), to make the desert locust the topic of the fifth international training course on remote sensing applications.

The programme of the training course will focus on the desert locust and its environment, the impact of meteorology on the desert locust, principles of remote sensing, the use of environmental satellite data for rainfall monitoring, the use of environmental and earth resources satellite data for vegetation biomass change monitoring, introductions to digital analysis of satellite data and the use of satellite communications systems. Lectures will be supported by practical exercises, panel discussions and some field work. A visit to the Earthnet/Telespazio Landsat satellite receiving station in Fucino is planned.

Participants for the course have been selected from Sudan (2), Tanzania, Ethiopia (3), Somalia, Saudi Arabia, Senegal, Algeria, Afghanistan, Iran (2), Iraq, Syria, Niger, Jordan, Upper Volta, Kenya (2), Pakistan, India and Egypt.

APPENDIX VI

COORDINATION WITH UNDP/FAO ACTION PROGRAMME FOR IMPROVED PLANT PROTECTION

This programme was initially funded for two years by UNDP: 1980-81. This initial phase has been extended up to the end of October 1983 with a promise of further extension to the end of 1986.

Recent activities: The following major activities relating to desert locust and other migrant pest control are highlighted:

(a) The post of regional plant protection and locust control officer, based in Nairobi, has been continued and is now budgeted for until the end of October 1983. Thereafter, the post should be extended under the same Programme up to the end of 1986.

(b) The second Session of the FAO Committee of Experts on Pest Control was held in Eschborn (Federal Germany), in October 1981 to discuss the developments of the Action Programme. DLCO-EA attended this meeting as an observer.

(c) An FAO study team undertook a comprehensive study of the needs of the International Red Locust Control Organisation for Central & Southern Africa (IRLCO-CSA) region with respect to the control of migrant pests. Findings of the study team were reviewed at a technical meeting at FAO Headquarters. They were later approved by the IRLCO-CSA Council in August 1982 and lead to the preparation of a project proposal on the control of migrant pests in southern Africa. This proposal will be discussed and finalized at a technical meeting scheduled on 25 October 1982 in Harare (Zimbabwe), for eventual submission to the meeting of the Ministers of Agriculture on 5 November 1982 with the aim of financing under a SADCC programme.

(d) Informal Discussions on International Training Activities in Plant Protection and future needs were held in Rome 16-18 June 1982. A directory of training courses in plant protection of interest to developing countries is to be prepared by FAO. This directory will serve as an information document and will also facilitate better organization and planning of future training.

(e) A training workshop on desert locust reporting and forecasting is under consideration for 1983.

APPENDIX VII

TRAINING

Training of Locust Officers has been continued at all levels under the Regional and International Desert Locust Trust Funds, TCOP and UNDP.

The tables below show FAO fellowships and training courses implemented since the Twenty-Fifth Session.

I Fellowships

Ben Halima, T.	Morocco	– University of Orsay, France	Commenced 25 November 1979 – continuing
Chinyang'anya, E.M.	Zimbabwe	– Commercial Pilots Licence and Agricultural Spraying U.S.A.	6 months from 24 April 1982

Fellowships planned

Ghafar, A.	Afghanistan	– University Studies in Teheran – Entomology	2 years to start November 1982
Ghorbandi, A. W.	Afghanistan	– University Studies in India – Entomology	2 years to start November 1982
Ahmed, A. O.	PDR Yemen	– Desert Locust Control Training	4 months in 1982
Samir El Samri	Egypt	– Training in Aerial Spraying Techniques in relation to Locust Survey & Control – DLCO-EA	3 months in 1982
Harb, M. F.	Egypt	– Plant Protection/Locust Control Toxicilogical Research Training	2 months in 1983
Reboza P. Amido	Madagascar	– Two Agricultural Pilots Training in Locust Survey & Control – DLCO-EA	1 month

II Training Courses/Seminars

		No. participants
(a) Radio Operation & Maintenance		
Karachi (Pakistan)	8 to 27 October 1981	12
Jodhpur (India)	2 to 6 November 1981	10
Khartoum (Sudan)	19 January to 10 February 1982	12
Khartoum (Sudan) (Regional Course)	2 to 23 April 1982	19
Tunis (Tunisia) (Regional Course)	22 May to 12 June 1982	11
(b) Locust Survey & Control		
Khartoum/Port Sudan (Sudan) (Regional Course – Near East)	2 to 23 April 1982, combined with radio course	19
(c) Agricultural Aviation		
CIBA GEIGY, Vouvry (Switzerland)	July 1982	El Garhy, M.S. (Egypt) Sadiq Mohammed (Pakistan) Latigo, A.A.R. (DLCO-EA)
Cranfield (U.K.)	September 1982	Gamal Zaki Tahi (Egypt) Ainan, A. E. (DLCO-EA) Hani Hamidi (Syria) Zafar Ali (Pakistan) Ackonor, J.B. (OICMA) Yavat Abdullah Sultan (Iraq)

APPENDIX VIII

INTERNATIONAL TRUST FUND 9161: CONTRIBUTIONS AND EXPENDITURE

Financial Report

1. The above Trust Fund was established by the Director-General of FAO following the recommendations of the Ninth Session of the Desert Locust Control Committee. The Director-General, as Administrator of the Trust Fund, consults with the Desert Locust Control Committee which is responsible for the general policy guidance of the Trust Fund; the Committee also reviews the annual budget and receives financial reports from FAO.

Budget, Statement of Accounts for 1981 and Estimate for 1982

2. The annual budget of the Trust Fund, approved by the Fourteenth Session of the Committee in October 1970, is shown in Appendix VIII/A, together with the accounts for 1981 and estimates for 1982, based on the present level of funds and pledges to be received.

3. A breakdown of 1981 expenditure is given in Appendix B. Expenditure in 1981 was kept low so as not to exceed the available funds. A further transfer of US $60 354 was effected in 1982 from the multi-donor Trust Funds 9577 + 9462. The heaviest expenditure was on staff and non-staff travel and on translation and printing of reports. These include the monthly Desert Locust Situation Summary and Forecast.

4. A breakdown of expenditure and commitments for 1982 as at 30 September 1982 is also given in Appendix VIII/B.

Contributions

5. The scale of government contributions to the Trust Fund is given in Appendix VIII/C. Details of outstanding contributions as at July 1982 are given in Appendix D. Arrears prior to 1981 were still outstanding from Chad, Djibouti, Iran, Kenya, Lebanon, Mauritania, Morocco, Senegal, Somalia, Sudan, Syria, Uganda and PDR Yemen, whose governments are requested to bring their contributions up to date as soon as possible. In view of steeply rising costs, it is essential that all funds pledged should be available to meet the needs of the member countries. Member countries are therefore recommended to respond to the FAO call-in letter as promptly as possible.

6. Concerning the proposed change in the scales of contributions to the International Trust Fund 9161, detailed information is provided in Appendix IX.

APPENDIX VIII/A

INTERNATIONAL DESERT LOCUST TRUST FUND 9161

BUDGET AND STATEMENT OF ACCOUNT (Expressed in US$ Equivalents)

		Approved Annual Budget	Expenditure 1981	Estimate 1982
Receipts				
	Balance brought forward	-	74 232	107 030
	Contributions from Member Governments	80 916	73 055	181 847 2/
	Transfer from TF 9577 and TF 9462	-		60 354
		80 916	147 287	349 231
Cash Expenditure				
Code				
10	Personal Services	10 000	6 558	25 000
20	Travel	15 000	6 672	15 000
30	Contractual Services	10 000	14 000	15 000
40	General Operating Expenses	-	-	1 000
50	Supplies	4 100	950	5 000
60	Equipment	25 000	5 917	54 000
80	Fellowships and Training	5 000	1 216	50 000
90	Project Service Costs (14%)	9 674	4 944	21 450
	Total expenditure	78 774	40 257	186 450 1/
	Unallocated Balance	2 142	107 030	162 781

The Director-General of FAO was empowered by the 14th Session of the DLCC, 1970, to change the allocation of sums allotted to different chapters in order to meet the changing needs of the locust situation, subject to the total annual expenditure not exceeding the total budget.

1/ corresponding to allocated budget for 1982.
2/ of which US$ 133 238 represent the outstanding contributions as at 30.9.82 covering the period 1976/77 to 1982/83 and only US$ 45 969 represent the contributions received in 1982 as at 30.9.82.

APPENDIX VIII/B

INTERNATIONAL DESERT LOCUST TRUST FUND 9161

Breakdown of 1981 Expenditure and Commitments to 30 Sept.1982

	Expenditure 1981	Commitments & Expenditure to 30 Sept. 1982
10. Personal Services		
Headquarters Staff - translators	1 980	-
Consultants (Radios/Training, Migratory Locust)	3 864	16 783
OCLALAV - Support Personnel	-	4 000
Insurance (vehicles)	714	-
	6 558	20 783
20. Travel on Official Business		
Staff Travel	822	388
Non-staff Travel	5 850	-
	6 672	388
30. Contractual Services		
Translation and Printing of Reports	14 000	14 702
	14 000	14 702
40. General Operating Expenses		
OCLALAV/Algeria Locust Survey	-	285
Assistance to OCLALAV - Operating Expenses	-	6 000
		6 285
50. Supplies		
Books and Journals	950	403
	950	403
60. Equipment		
Various	767	113
Expenses related to OCLALAV joint Desert Locust survey	5 150	2 000
	5 917	2 113
80. Fellowships		
Wambugu (DLCO-EA)	1 216	64
Latigo, Training Course in Switzerland (DLCO-EA) / Ainam, Training Course in U.K. (DLCO-EA)	-	8 439
	1 216	8 503
90. Project Servicing Costs (13%)**	4 944	4 959*
TOTAL	40 257	58 136

*Calculated on expenditure as at August 1982.

**14% for 1981, 13% for 1982

APPENDIX VIII/C

SCALE OF GOVERNMENT CONTRIBUTIONS TO THE INTERNATIONAL DESERT LOCUST TRUST FUND NO. 9161

Country	US$	
Afghanistan	1 910	
Algeria	2 580	
Bahrain	720	
Cameroon	1 440	
Chad	1 800	
Djibouti	420	
Egypt	3 920	
Ethiopia	2 180	
Ghana	1 950	
India	10 000	
Iran	3 690	
Iraq	2 480	
Jordan	1 730	
Kenya	1 800	
Kuwait	420	
Lebanon	1 350	
Libya	1 820	
Mali	1 800	
Mauritania	1 720	
Morocco	2 990	
Niger	1 800	
Nigeria	3 650	
Oman	830	
Pakistan	5 860	
Qatar	830	
Saudi Arabia	1 830	
Senegal	2 010	
Somalia	688	a/
Sudan	2 250	
Syria	2 010	
Tunisia	1 990	
Uganda	1 650	
United Arab Emirates	5 500	
Yemen Arab Republic	1 840	
Yemen, People's Democratic Republic	120	
	79 578	

a/ Expressed in US Dollars at current UN exchange rate (15.05) although the pledge is the equivalent in US$ of Somali Shillings 10 353.00 per annum.

TRUST FUND NO. 9161.00 - INTERNATIONAL - DESERT LOCUST CONTROL PROJECT

APPENDIX VIII/D

Pledge Position at 30 September 1982 (in $ US)

	Outstanding 1976-77	Outstanding 1977-78	Outstanding 1978-79	Outstanding 1979-80	Contribution due for 1980-81	Contribution due for 1981-82	Contribution due for 1982-83	Received in 1982	Outstanding as at 30 Sept. 82
Afghanistan	-	-	-	-	-	1 910.00	1 910.00	1 910.00	1 910.00
Algeria	-	-	-	-	-	2 580.00	2 580.00	6 900.00	(1 740.00)
Bahrain	-	-	-	-	-	720.00	720.00	-	1 440.00
Cameroon	-	-	-	-	(987.46)	1 440.00	1 440.00	-	1 892.54
Chad	1 800.00	1 800.00	1 800.00	1 800.00	1 800.00	1 800.00	1 800.00	-	12 600.00
Egypt	-	-	-	-	-	3 920.00	3 920.00	3 930.00	3 920.00
Ethiopia	-	-	-	-	-	2 180.00	2 180.00	-	4 360.00
Djibouti	-	-	420.00	420.00	420.00	420.00	420.00	-	2 100.00
Ghana	-	-	-	-	(2 944.06)	1 950.00	1 950.00	-	955.94
India	-	-	-	-	-	-	-	10 000.00	-
Iran	-	-	-	-	3 690.00	3 690.00	3 690.00	-	11 070.00
Iraq	-	-	-	-	-	2 480.00	2 480.00	2 480.00	2 480.00
Jordan	-	-	-	-	-	-	1 730.00	-	1 730.00
Kenya	-	-	-	-	1 800.00	1 800.00	1 800.00	1 810.00	3 590.00
Kuwait	-	-	-	-	-	420.00	420.00	-	840.00
Lebanon	-	-	-	1 350.00	1 350.00	1 350.00	1 350.00	4 050.00	1 350.00
Libya	-	-	-	-	-	1 820.00	1 820.00	-	3 640.00
Mali	-	-	-	-	-	-	1 800.00	4 062.84	1 800.00
Mauritania	1 305.09	1 720.00	1 720.00	1 720.00	1 720.00	1 720.00	1 720.00	-	11 625.09
Morocco	-	-	-	-	2 990.00	2 990.00	2 990.00	-	8 970.00
Niger	-	-	-	-	-	-	1 800.00	-	1 800.00
Nigeria	-	-	-	-	-	-	3 650.00	-	3 650.00
Oman	-	-	-	-	-	830.00	830.00	-	1 660.00
Pakistan	-	-	-	-	-	-	5 860.00	-	5 860.00
Qatar	-	-	-	-	-	830.00	830.00	830.00	830.00
Saudi Arabia	-	-	-	-	-	1 830.00	1 830.00	1 830.00	1 830.00
Senegal	-	-	293.92	2 010.00	2 010.00	2 010.00	2 010.00	1 628.25	6 705.67
Somalia	-	688.00*	688.00*	688.00*	688.00*	688.00*	688.00*	-	4 128.00
Sudan	-	2 250.00	2 250.00	2 240.00	2 250.00	2 250.00	2 250.00	-	13 500.00
Syria	-	-	-	-	2 010.000	2 010.00	2 010.00	-	6 030.00
Tunisia	-	-	-	-	-	1 990.00	1 990.00	2 625.00	1 355.00
Turkey**	-	-	-	-	-	-	-	283.38	-
Uganda	-	-	-	1 650.00	1 650.00	1 650.00	1 650.00	-	6 600.00
United Arab Emirates	-	-	-	-	-	5 500.00	5 500.00	-	11 000.00
Yemen Arab Republic	-	-	-	-	-	(5 524.00)	1 840.00	3 160.00	(6 844.00)
Yemen PDR	-	-	120.00	120.00	120.00	120.00	120.00	480.00	600.00
TOTAL:	3 105.09	6 458.00	7 291.92	12 008.00	18 849.86	47 374.00	69 578.00	45 969.47	133 238.24

*Expressed in US $ at current (15.05) UN rate although legal contribution is assessed in Somali Shillings at SS 10 353.00 per year totalling SS 62 118.00 from 1977-83.

**Turkey has advised the Organization of its withdrawal from the Committee.

APPENDIX IX

INTERNATIONAL TRUST FUND T.F. 9161 - PROPOSED NEW SCALE OF CONTRIBUTIONS

Background

The Trust Fund was established in 1964 to supplement and coordinate national and regional programmes in Desert Locust control and research and to continue certain activities initiated under the United Nations Special Fund Desert Locust Project. The activities included support for the Desert Locust Information Service, research projects of international significance, the collection, exchange and dissemination of technical material, reports and publications, training courses, fellowships and scholarships, panels of experts, advisory visits and to provide a reserve fund to assist member governments and/or regional organizations for control measures. The proposed annual budget was US$100 000. This was approved but the total currently pledged has decreased to US$79 578, not all of which is received regularly.

As the Trust Fund has not been able to meet all its current objectives due to increased costs, the Twenty-Sixth Session of the FAO Desert Locust Control Committee held in Rome 4-8 October 1982 approved a doubling of the annual total contributions to US$200 000. The Committee further agreed that the new scale of contributions should be calculated on the same criteria as those used when the Fund was first established in 1964, subject to a maximum contribution of 10% by any one country. This paper describes the principles used in calculating the new scale of contributions, as requested by the Twenty-Sixth Session of the FAO Desert Locust Control Committee.

General principles for calculating new scales of contributions

The scale of contributions to the Trust Fund to be paid by the member governments is based on the same principles as those adopted when the Trust Fund was established in 1964, namely:

- the frequency of Desert Locust infestations,
- the area of arable land and land under permanent crops vulnerable to damage,
- the capacity of a member government to pay.

As an indicator of the first, the average frequency of occurrence of swarms and hopper bands, extended to the 40-year period from 1939-1978 inclusive, has been used. For the second, the area of arable land and land under permanent cultivation has been taken from the 1979 FAO Production Yearbook. For the third, the quota of each member government's contribution to FAO for 1982-3 has been used. The scale thus worked out was finally adjusted to a maximum contribution of 10% from any one country.

The proposed annual budget was doubled, from US$100 000 to US$200 000.

Index of potential damage by the Desert Locust (Appendix IX/A)

Column A Number of years with swarms, 1939–1978
Column B Number of years with hopper bands, 1939–1978
Column C Mean number of years with swarms and hopper bands $\frac{A + B}{2}$

Column D Total area of arable land and land under permanent cultivation
Column E Percentage of arable land and land under permanent cultivation subject to potentially serious locust damage.

These data are based on records of infestations.

Calculation of index of potential damage by the Desert Locust

Column F Column C x Column D x Column E provides an index of the potential damage by the Desert Locust for each country for the period 1939–1978.

Column G The logarithm of the figure in Column F was taken as the actual index of exposure to damage. This totalled 145.53291 for all countries. This was then converted proportionately to a percentage, which is the Relative Log Exposure to Damage.

Capacity to Pay

Column H The capacity of a member country to pay to the Trust Fund is taken to be proportional to its contribution to FAO. The total contributions of DLCC member governments to FAO amount to 4.01 of the total of all countries to FAO. The figure in Column H represents the relative contribution to FAO of each contributor to the Trust Fund (FAO contribution x 24.937655).

Scale of contribution

Having determined the Index of Potential Damage by the Desrt Locust (Column G) and the Capacity to Pay (Column H), the scale of contribution was determined by giving equal weight to the two factors, so that Column I is obtained by taking the mean of Columns G and H. The scale thus caloulated was finally adjusted to a maximum contribution of 10% for any one country, Columns J and K (as agreed in 1964).

APPENDIX IX/A

BASIC DATA FOR CALCULATING SCALE OF GOVERNMENTAL CONTRIBUTION TO THE INTERNATIONAL TRUST FUND, TF 9161

Country	Locust Frequency 40 Years 1939–1978			Arable Land and Land under Permanent Crops		Exposure to Damage CxDxE	Relative Log Exposure	Relative Quota for Contrib. to FAO 1982–1983	Scale of Contributions to the International Trust Fund TF 9161		
	Swarms	Hopper Bands	Mean	Total Area '000 ha.	% Subject to serious damage				½(G+H)	I adjusted to a maximum 10% for any one country	
										%	$US
	A	B	C	D	E	F	G	H	I	J	K
Afghanistan	13	11	12.0	8 050	30	28 980	3.07	0.25	1.66	1.74	3 480
Algeria	23	19	21.0	7 845	100	164 745	3.59	3.74	3.66	3.85	7 700
Bahrain	7	3	5.0	2	100	8	0.62	0.25	0.44	0.46	920
Cameroon	4	0	2.0	7 390	20	2 956	2.39	0.25	1.32	1.39	2 780
Chad	21	12	16.5	1 950	100	32 175	3.10	0.25	1.67	1.76	3 520
Djibouti	20	10	15.0	1	100	15	0.81	0.25	0.53	0.56	1 120
Egypt	21	12	16.5	2 838	100	46 827	3.21	2.24	2.73	2.87	5 740
Ethiopia	32	34	33.0	13 730	90	407 781	3.86	0.25	2.05	2.16	4 320
Gambia	7	0	3.5	265	100	927	2.04	0.25	1.15	1.21	2 420
Ghana	3	0	1.5	2 720	30	1 224	2.13	1.00	1.56	1.64	3 280
India	29	27	28.0	168 500	20	943 600	4.11	18.20	11.16	10.00	20 000
Iran	28	20	24.0	15 950	80	306 240	3.77	19.95	11.86	10.00	20 000
Iraq	16	15	15.5	5 395	90	75 260	3.35	3.74	3.54	3.72	7 440
Jordan	18	15	16.5	1 370	100	22 605	3.00	0.25	1.63	1.71	3 420
Kenya	19	16	17.5	2 270	100	39 725	3.16	0.25	1.70	1.79	3 580
Kuwait	17	16	16.5	1	100	16	0.83	5.98	3.41	3.59	7 180
Lebanon	4	1	2.5	348	70	609	1.92	1.00	1.46	1.53	3 060
Libya	18	12	15.0	2 564	100	38 460	3.15	6.98	5.06	5.32	10 640
Mali	21	18	19.5	2 050	100	39 975	3.17	0.25	1.71	1.80	3 600
Mauritania	25	20	22.5	195	100	4 387	2.51	0.25	1.38	1.45	2 900
Morocco	26	18	22.0	7 868	100	173 096	3.60	1.50	2.55	2.68	5 360
Niger	24	20	22.0	3 112	100	68 464	3.33	0.25	1.79	1.88	3 760
Nigeria	14	3	8.5	23 990	60	122 349	3.50	4.99	4.25	4.47	8 940
Oman	24	15	19.5	36	50	351	1.75	0.25	1.00	1.05	2 100
Pakistan	33	31	32.0	19 990	90	575 712	3.96	2.24	3.10	3.26	6 520
Qatar	7	3	5.0	2	100	10	0.69	1.00	0.84	0.88	1 760

Country	A	B	C	D	E	F	G	H	I	J	K
Saudi Arabia	31	30	30.5	1 105	100	33 702	3.12	17.70	10.41	10.00	20 000
Senegal	16	9	12.5	2 404	100	30 050	3.08	0.25	1.67	1.76	3 520
Somalia	27	26	26.5	1 066	100	28 249	3.07	0.25	1.66	1.75	3 500
Sudan	31	32	31.5	7 515	60	142 033	3.54	0.25	1.89	1.99	3.980
Syria	12	10	11.0	5 588	100	61 468	3.29	1.00	2.15	2.26	4 520
Tunisia	13	11	12.0	4 415	100	52 980	3.25	1.00	2.12	2.23	4 460
Uganda	11	4	7.5	5 610	50	21 037	2.97	0.25	1.61	1.69	3 380
United Arab Emirates	22	13	17.5	12	50	105	1.39	2.99	2.19	2.30	4 600
Yemen Arab Republic	26	20	23.0	1 570	100	36 110	3.14	0.25	1.70	1.79	3 580
Yemen PDR	29	26	27.5	265	100	7 287	2.53	0.25	1.39	1.46	2 920
TOTALS							100.00	100.00	100.00	100.00	200 000

APPENDIX X

STATUS OF VARIOUS REGIONAL LOCUST ORGANIZATIONS AND COMMISSIONS

Commission for Controlling the Desert Locust in the Eastern Region of its Distribution Area in South-West Asia

1. No annual sessions could be held in 1981 and 1982. It is intended to hold the fifteenth session in India or Pakistan in early 1983.

2. The FAO Secretary of the Commission retired on 31 December 1981. A new Secretary, Mr. G. Popov of U.K. has been appointed by FAO and will assume his duties soon, with Rome as temporary duty station. It is planned to transfer the post again to a station in the Region. This matter will be discussed at the next meeting of the Commission.

3. Activities of the Commission continued satisfactorily. Joint surveys along the border, financed by the regional Trust Fund, were organized in 1981 and 1982. Short-term fellowships and local training courses were organized.

Commission for Controlling the Desert Locust in the Near East

4. The thirteenth session could not be held in 1982 as was recommended at the twelfth session.

5. The Commission financed the post of Locust Officer in the United Arab Emirates for one year. FAO appointed for this purpose Dr. Hani Haddadin who joined his duty station, Dubai, on 26 September 1981. His services were extended until the end of 1982 in order to assist the Government of United Arab Emirates in preparing a special budget for the extension of the post starting in 1983.

6. The Commission, using TF 9409, provided assistance to the People's Democratic Republic of Yemen to the value of US$ 20 000 in 1982.

7. Based on a previous decision of the Commission, FAO further assisted the research facilities at Dokki Research Station, Egypt, by providing equipment from the regional Trust Fund to the value of US$ 5 000.

Commission for Controlling the Desert Locust in North-West Africa

8. The eleventh session of the Commission was held in Rome, Italy from 13-16 April 1982.

The Commission:

(a) reviewed the Desert Locust situation and noted with concern the critical situation of OCLALAV which does not allow the routine survey operations, especially in Mauritania where dozens of swarms were observed in December 1982. It requested member countries to consider urgently an assistance to OCLALAV in order to secure regular coverage of important breeding zones;

(b) followed the progress of Mr. T. Ben Halima's studies both in the field and at the University of Orsay, Paris. He is supposed to submit his Ph.D thesis in February/March 1983;

(c) a training course for 18 survey officers was organized in Algiers from 8-16 November 1981. A regional radio training course was also held in Tunis from 23 May to 11 June 1982 and was attended by 11 technicians. It was recommended to formulate a well-balanced training programme covering all locust needs in the region, higher priority being given to medium-level staff, and the use of national institutions for training, when possible;

(d) requested the Secretariat of the Commission to prepare the vegetation handbook using the means at his disposal with the participation of local specialists;

(e) reiterated the necessity of establishing a station at Algiers for the reception of meteorological satellite images and requested FAO to explore means of financing. It also recommended the strengthening of the meteorological network in all countries concerned;

(f) reviewed the interesting results of the joint Algeria/OCLALAV/FAO survey which was organised from 13 to 29 October 1981 and recommended to undertake this activity on an annual basis;

(g) approved the 1981 budget, the programme of work and budget for 1982 and the proposed annual budget for the 5-year period 1983-87. It also approved an increase in annual contributions from the present total of $ 80 000 to $ 133 000 per year.

The next session of the Commission will be held in Tunis in May/June 1983.

Organisation commune de lutte antiacridienne et de lutte antiaviaire (OCLCLAV)

9. The Administrative Council of OCLALAV took place in Ouagadougou (Upper Volta) on 24-26 June 1982.

The Council:

(a) reviewed the activities during 1981 and 1982 and admitted that due to lack of means and funds the organisation was unable to control the situation in Mauritania in late 1981 and in 1982 no survey operations had been undertaken up to June;

(b) took note of the joint OCLALAV/donors meetings held in early 1982 in order to seek assistance;

(c) realised that no progress was seen concerning the merger with OICMA and requested the Chairman again to meet his colleague the Chairman of OICMA in order to explore a solution to the difficulties encountered;

(d) studied with concern the financial situation of the organisation. The search for permanent solutions was considered necessary. It therefore requested a study of restructuration to be undertaken by FAO, France and UNDP in collaboration with OCLALAV;

(e) adopted the 1983/84 budget of 500 million CFA F of which 180 million to come from arrear contributions;

(f) renewed the appointment of Dr. Abdallahi Ould Soueid Ahmed as Director-General for the four-year period 1982-86.

The Committee was also informed that surveys in Mauritania, Mali and Niger commenced in August 1982, thus at a meeting in Dakar on 21-22 September between representatives from OCLALAV, France, UNDP and FAO a programme to study the restructuring of OCLALAV was drawn. Further working sessions would be held in January-February and a report would be presented to the next OCLALAV Council Meeting in July 1983. France had already made a contribution of 7.500.000 CFA F towards the costs of the meeting.

Desert Locust Control Organization for Eastern Africa (DLCO-EA)

10. The 27th regular session of the DLCOEA Council of Ministers took place in Djibouti on 19-20 April 1982.

The Council:

(a) reviewed the development of EEC/DLCOEA project (US$ 3 million) to start in 1982;

(b) agreed to retain the Operations Department at Headquarters;

(c) reduced Djibouti's rate of contributions from 4.35 to 2%;

(d) accepted the three-year DLCOEA/GTZ cooperation project in the field of environmental pollution;

(e) reviewed the locust situation in the region (now calm) and approved the programme of work and budget 1982/83 (US$ 4 191 187);

(f) thanked Uganda, Somalia, Tanzania and Ethiopia for having paid back contributions totalling $2.5 million in early 1982.

The next meeting of the Council will be held around mid-May 1983 in Mogadishu, Somalia.

International Red Locust Control Organisation for Central and Southern Africa (IRLCO-CSA)

11. The 13th annual Governing Council was held in Gaborone (Botswana) from 11-13 August 1982.

- The Council accepted the report of the FAO study team on the proposed expanded programme to cover activities on migrant pests; requested FAO to prepare draft proposals for a project document arising from the study team and to explore the possibility of finding a suitable donor for assistance; and to look for further assistance to strengthen the Organisation.

- Although the financial situation of IRLCO-CSA had been poor in early 1982, recent payment of back contributions had led to a great improvement.

- The Council agreed to a 22% increase in the 1983 budget.

(a) The Committee was also informed that large numbers of locusts had been found in the Nambere outbreak area in February 1982 but no control operations had been undertaken. Further surveys in late September 1982 revealed that there were still many adults but that these had not formed swarms as grass burning had not yet started. In August an infestation was found in sugar cane in north Swaziland. 80 hectares were aerially sprayed on 21 August.

The next session of the Governing Council would be held in Uganda in August 1983.

Organisation internationale contre le criquet migrateur africain (OICMA)

12. The date and place of the annual meeting of the Administrative Council are not yet determined.

The Committee was informed that the financial situation remains very precarious as only 30-35% of the approved annual budget is received. In early 1982 the locust situation had been reported as calm but recently incipient gregarious breeding had been seen in the southern section of the Mali outbreak area where control operations had commenced in September. There had been recent reports of infestations in Chad but they remained unconfirmed because of difficulties in communication between the Garoua base and Chad. An upsurge had occurred in Angola where hopper bands and swarms over an area of 60 000 hectares had been controlled between June and September.

APPENDIX XI

REPORT OF THE FAO AD HOC WORKING GROUP OF EXPERTS TO DISCUSS THE TERMS OF REFERENCE OF THE FAO DESERT LOCUST CONTROL COMMITTEE

INTRODUCTION

Origin of the ad hoc Working Group

At the 24th Session of the DLCC, Rome, 3-7 November 1980, in the course of discussions under the Action Programme for Improved Plant Protection, a number of countries requested that the mandate of the DLCC should be expanded to include other migratory pests, and at least other migratory locusts and "it was agreed that FAO would prepare a working paper for discussion at the next session of the DLCC." The FAO secretariat was requested "to study as a matter of urgency the possible extesnion of the mandate of the DLCC to other migratory pests and submit appropriate suggestions/proposals to the next session." (para 53 of 1980 DLCC report).

At its 25th Session, Rome 5-9 October 1981, the Committee reviewed the document prepared by the Secretariat according to the recommendation of its 1980 session.

"The importance of migratory pests other than the Desert Locust was fully recognized. Due consideration will have to be sought to solve problems caused by these pests. The problem resides in determining how this goal could be best achieved and the rôle that the DLCC can or should efficiently play in this respect, taking into consideration the technical, legal, logistical, organizational, financial and administrative factors involved. A lengthy discussion showd the magnitude and complexity of this problem. While recognizing that FAO was already tackling other migrant pest problems and that the DLCC had restricted its activities to the Desert Locust, views diverged about the official rôle of the DLCC and the official extension of its terms of reference."

FAO convened the present ad hoc Working Group as a consequence of views expressed at the 25th Session, the recommendation of which states:

> "The Committee therefore recommended that an ad hoc working group of experts be formed by FAO as soon as possible in order to study this problem in detail and to report its conclusions to the next session."

Establishment of the ad hoc Working Group

To meet the request of the Committee, FAO invited seven recognized experts on Desert Locust and other migratory pest control, representing a wide range of the affected geographical regions, to serve in their personal capacity on the ad hoc Working Group, which was convened in Rome. The Working Group invited Mr. Jean Roy to serve as Chairman.

The Working Group was opened by Dr. Lukas Brader, Chief, Plant Protection Service, who introduced the problem and regretted that Dr. A. Hafraoui (Morocco) and Dr. K. Paharia (India), members of the Working Group, were not able to participate.

Terms of Reference

FAO suggested the following terms of reference, as recommended by the 25th Session of the DLCC, though it recognized that the Working Group should have complete freedom of discussion within the framework of the general objective set out by the Committee:

- to define the migratory pest species involved, their distribution area and the countries concerned, compared with the area of the Desert Locust covered by the DLCC;
- to review the control tactics, strategy, logistics and organizations concerned with the migratory pest species both at national level and that of organizations dealing with their control;
- to assess the activities of the DLCC since it was established in 1955 and to identify the main constraints whioh prevent it fulfilling the activities assigned to it and expanding those activities;
- to study the future rôle which could be played by the DLCC in tackling the problems of migratory pests other than the Desert Locust without duplicating other activities already being undertaken by FAO;
- to study the feasibility of extending the terms of reference of the DLCC, the real advantages and disadvantages of such a change to the countries and organizations concerned;
- to determine the various legal, organizational, technical, administrative and financial implications of extending the terms of reference of the DLCC and to show how the problems could be overcome.

Future action

The Working Group's report will be submitted to the 26th Session of the FAO DLCC planned for October 1982 for consideration of the policy and organizational implications and the eventual adoption of the recommendations.

PARTICIPATION IN THE MEETING

The following experts and FAO staff participated at the Working Group's discussions which are summarized in its report:

Experts

Mr. H. S. Alomenu Director-General, OICMA	Bamako	Mr. C. Ashall COPR	London
Mr. Salem Hadramy Director-General Agricultural Research Centre	Jeddah	Mr. M. E. A. Materu Director, IRLCO-CAS	Mbala
		Mr. J. Roy France	

FAO Staff

Mr. L. Brader
Chief, Plant Protection Servie
Plant Production and Protection Division

-Mr. R. Skaf, Senior Officer
-Mr. J. Roffey, Agricultural Officer (Reporting & Forecasting)
-Ms. H. Niggeman, Agricultural Officer (Operations)

Locusts, Other Migratory Pests & Emergency Operations Group, Plant Protection Service

SUMMARY OF MAJOR RECOMMENDATIONS

The Working Group recommended:

(a) that Sessions of the Desert Locust Control Committee should be used as the international forum at which matters relating to the African Migratory Locust and Red Locust should be discussed, as already possible under section (iii) of the terms of reference of the DLCC;

(b) that the composition of the Advisory Panel on emergency action be expanded to include one additional member and one additional alternate to ensure adequate representation on the Panel of expertise on migratory locusts and crop pests other than the Desert Locust;

(c) that the proposed increase in the budget of International Trust Fund 9161 to expand activities against the Desert Locust be implemented;

(d) that the possibility of creating new Trust Funds for African Migratory Locust and Red Locust activities be explored;

(e) that other sources of multilateral and bilateral funding be approached in view of the continuing threat posed by the three main African locust species.

SUMMARY OF DISCUSSIONS

The problem

1. In recent years there has been an increasing awareness of plant protection problems in developing countries. In addition to the long established locusts, other major problems are: grasshoppers, armyworms and birds as well as disease vectors such as tsetse flies and black flies. The importance of these pests is already recognized by several regional locust organizations, which are expanding their terms of reference to include research and control of species other than migratory locusts. Most of the regional locust organizations and their member governments are experiencing considerable financial difficulties.

2. The Working Group emphasized the impact and the overall success of the DLCC in collaboration with the national and regional organizations in keeping the Desert Locust under control, and recognized that what was now being sought by member governments and regional organizations was similar support for their work on other pests through expansion of the terms of reference of the DLCC.

3. There were a number of alternative suggestions concerning extension of the terms of reference of the DLCC; these included coverage of:

- all locust species
- all migratory pests
- all plant protection problems

Current position

4. The Working Paper prepared by the Secretariat at the 25th Session of the DLCC gave the original terms of reference of the Committee and the amendments approved by the 51st Session of the FAO Council in 1968. It also listed the membership of the DLCC (currently 50 members), the member governments belonging to the various regional locust organizations and other background information.

Activities of the DLCC and identification of constraints

5. Discussions of the DLCC have covered a wide range of subjects but particular attention has been given to organizational rather than technical matters. Findings and recommendations are presented in the annual session reports, supported with detailed working papers. Some of the major subjects which have been discussed are:

- Desert Locust situation and forecast
- Desert Locust Information Service
- national and international anti-locust campaigns and forces
- joint and special surveys
- control techniques and research
- crop damage
- application of remote sensing for improving Desert Locust survey and control
- training
- national and regional anti-locust organizations
- establishment of sub-committees and regional commissions for controlling the Desert Locust
- long-term policy of Desert Locust control
- status of the FAO DLCC
- establishment of FAO International Trust Fund for Desert Locust
- Panel of Experts
- international financial resources
- the United Nations Special Fund Desert Locust project
- UNDP/FAO inter-regional project on training
- FAO/DANIDA project
- FAO/SIDA project
- FAO emergency fund (Working Capital Fund) & Advisory Panel of Experts for emergencies
- UNDP/FAO Action Programme for Improved Plant Protection

6. The DLCC was able to carry on certain continuing aspects of the 1960-70 UNDP (SF) Desert Locust project after its conclusion due to the establishment at the 9th Session of the DLCC of an International Desert Locust Trust Fund as from 1 July 1966. The same session defined the criteria and guiding principles of the Fund. The proposed annual budget was US$85 000 of which about only US$70 000 are actually received irregularly.

7. Activities financed by the International Trust Fund from 1967-81 are reported yearly to the DLCC session meetings and are summarized below:

- provision of counterpart contributions in cash necessary to permit the extension of the UNDP (SF) Desert Locust project for the period May 1968 to December 1970.
- contributions to the cost of the Desert Locust Information Service
- advisory visits and Panel of Experts
- meetings/publications
- provision of equipment and supplies
- assistance in emergency operations
- training courses, fellowships and scholarships
- research projects of international significance

8. At present, due to increased costs and the large array of activities to be covered, the Trust Fund cannot meet all its current obligations concerning the Desert Locust. The DLCC at its 1980 and 1981 sessions discussed the possibility of increasing the total budget to US$ 200,000 but most of the governments have not yet expressed their final decision. In summary, the major constraint faced by the DLCC is the lack of finance and this needs urgent attention.

9. The Working Group was therefore of the opinion that unless additional resources were explored to cover activities related to other migratory locusts, the resources of TF 9161 should strictly be used on Desert Locust activities.

Basic considerations

10. Not all pest species have the same requirements; there are differences in their behaviour, they have different areas of distribution and often require different methods of control. It would be impossible and unrealistic for a single committee to deal with all pests. Moreover there were already several FAO plant protection committees which dealt with some of the other pest problems.

11. Most of the major migratory pests even in Africa and South-West Asia are sub-regional and each only affects a relatively few countries within the Desert Locust invasion area. There are about 15 species of swarming locusts, about a half of which do not overlap with the Desert Locust.

12. There are only two species of migratory locust, the African Migratory Locust and the Red Locust, which may cause damage on a scale comparable with the Desert Locust and which affect a significant number of countries which are also affected by the Desert Locust.

13. Expansion of the DLCC to cover the African Migratory Locust and the Red Locust would involve at least 12 additional countries (Angola, Congo, Zaire for the African Migratory Locust and Botswana, Burundi, Lesotho, Malawi, Mozambique, Rwanda, Swaziland, Zambia and Zimbabwe for the Red Locust). Full and formal expansion of the DLCC mandate to include these countries would involve at least:

- important financial problems, increasing existing International Trust Fund 9161 or creating new Trust Funds;
- changing arrangements for release of funds from the Working Capital Fund during emergencies;
- assessing needs for continuing aspects of DLCC activities for the African Migratory Locust and the Red Locust;
- changing the name of the DLCC;
- problems of producing more documents.

14. The Working Group insisted that the DLCC should be primarily concerned with the Desert Locust because of its truly inter-regional nature. Development of the approaches to the problems of other pests could usefully follow the lines adopted by the DLCC, and the Working Group recognized that expansion of the terms of reference to include the African Migratory Locust and the Red Locust could be justified on those grounds.

Proposals to assist the control of the African Migratory Locust and the Red Locust

(a) General considerations

15. The African Migratory Locust and the Red Locust affect significant numbers of countries which are already members of the DLCC.

The African Migratory Locust and the Red Locust have in the past caused severe crop damage and may do so again.

Upsurges of the African Migratory Locust often occur in the same areas and at the same time as Desert Locust upsurges in the Central Region. Upsurges of the African Migratory Locust and the Red Locust may also occur in the same area and simultaneously e.g. the Lake Chad basin and in the Middle Niger outbreak area in Mali.

16. The Working Group recognized the need for an official international forum for the organizations concerned with control of the African Migratory Locust and the Red Locust (OICMA and IRLCO-CSA) to draw attention of the international community to their problems and needs.

It was noted, however, that FAO regulations do not allow regional organizations to become members of the DLCC and they are therefore invited to attend as observers.

17. The Working Group noted that section (iii) of the existing terms of reference of the DLCC reads:

> "promoting the overall coordination of the work of various national and regional anti-locust organizations and commissions"

which, if the DLCC agreed, would allow discussion of matters affecting the African Migratory Locust and the Red Locust and recommended that the organizations concerned should make good use of that opportunity. The Working Group suggested that there could be a specific item on the DLCC agenda to promote discussion of their activities. For example, OICMA and IRLCO-CSA should be requested to prepare a working paper summarising the African Migratory Locust and Red Locust situation each year for this purpose.

(b) Emergency situations

18. In accordance with Resolution 17/69, adopted by the 11th Session of the FAO Conference in November 1969, the Director-General of FAO established, under Article VI.6 of the Constituion, an advisory panel on emergency action for carrying out initial control activity against the Desert Locust in emergencies, comprising three experts of acknowledged competence in Desert Locust control with three alternates.

By Resolution 33/75 of the 18th Conference Session, which took place in November 1975, the terms of reference of the Panel were extended to cover other migratory or introduced crop pests creating a major potential threat. The Conference authorized the Director-General to withdraw up to $ 1 million from the Working Capital Fund:

> "(a) to finance initial emergency measures for the control of outbreak of livestock diseases under emergency circumstances which constitute a potential epizootic threat to livestock of other countries;
>
> (b) to finance initial control activities against locusts and other migratory or introduced crop pests creating a major potential threat;
>
> after consultation with the Chairman of the Finance Committee or another member of that Committee designated by him and in the light of the recommendations of the pertinent Advisory Panels of technical experts established under Conference Resolutions 35/65 and 17/69 provided that not more than $700 000 may be withdrawn in any one biennium under either of the above headings;"

19. In accordance with these Resolutions the Director-General used the Working Capital Fund on several occasions, including that of the 1978 upsurge of the Desert Locust.

The Working Group recognized that during emergencies, the Resolution 33/75 is amply adequate to allow eventual assistance for upsurges of the African Migratory Locust and the Red Locust.

20. The Working Group took also note of the fact that:

- withdrawals from the Working Capital Fund in accordance with Resolution 33/75 constitute only an initial part of larger amounts mobilized by FAO and through FAO for locust emergencies during the recent years;

- that since 1976 FAO has repeatedly used TCP funds during locust emergencies, including that of the African Migratory Locust in the Lake Chad basin area in 1980 and in Madagascar in 1981/82.

21. Taking into consideration the large number of migratory locusts and other pests involved and their wide distribution in developing countries, the Working Group was of the opinion that the composition of the Advisory Panel for Emergencies be expanded to include one additional member and one additional alternate, to ensure adequate representation.

(c) Activities of a continuous nature

22. Concerning continuing aspects of DLCC activities (training and research), the Working Group noted that contributions to the budget of the International Trust Fund 9161 was declining (see paragraph 6) and the Fund is unable to meet the level of activities originally foreseen. It therefore suggested that the possibilities of creating new Trust Funds for African Migratory Locust and Red Locust activities be explored by FAO.

23. In addition the Working Group also recommended that continuing aspects of anti-locust activities including survey, training and research might be funded from the Action Programme for Improved Plant Protection which gives priority to strengthening national plant protection services within the Desert Locust area and which can also strengthen regional locust control and plant protection organizations.