REPORT OF THE

EXTRAORDINARY EMERGENCY SESSION OF THE FAO DESERT LOCUST CONTROL COMMITTEE (TWENTY-SECOND SESSION)

Held in Rome
26-28 July 1978

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Meeting Report No.
AGP/1978/M/9

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held in
Rome, Italy
26 - 28 July 1978

Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
Rome, 1978

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INTRODUCTION

The Twenty First Session of the FAO Desert Locust Control Committee, which was held in Rome from 3 - 7 October 1977, recommended that the next Session of the Committee should be convened in October 1978. In view of sudden serious developments in the Desert Locust situation in the Eastern Horn of Africa and in the countries of the Red Sea and the Gulf of Aden areas, the Director-General decided to convene an Extraordinary Emergency Session of the Committee from 26 to 28 July and invited the following Governments to be represented by Delegates.

Afghanistan
Algeria
Bahrain
Benin
Cameroun
Central African Empire
Chad
Egypt
Ethiopia
France
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
Turkey
Uganda
United Arab Emirates
United Kingdom
United States of America
Upper Volta
Yemen Arab Republic
Yemen, People's Democratic Republic of

He also invited the Representatives of the Desert Locust Control Organization for Eastern Africa (DLCO-EA), Organisation Commune de Lutte Antiacridienne et de Lutte Antiaviaire (OCLALAV), International African Migratory Locust Organization (OICMA), the League of Arab States and the Organization for Agricultural Development as observers. In addition, he invited the Representatives of the United Nations Development Programme (UNDP) because of their continued involvement and interest in the Desert Locust Programme and the World Meteorological Organization (WMO). The Representatives of the Governments of Belgium and Canada were also invited as observers at their request.

The Session was opened by Dr. R. Phillips, Deputy Director-General, who, on behalf of the Director-General, welcomed all the participants to the Session, and emphasized the importance of this Extraordinary Session, which should enable the participants to consider the present serious locust situation and to recommend measures to control it. He described the present locust situation as a "plague in the offing" which, if not controlled in time, was likely to spread to other countries. He expressed the personal concern of the Director-General at the present locust situation and informed about the steps taken by him to assist Member Nations and Regional Organizations concerned in fighting this menace, and of his personal appeal to Donor Governments for a contribution of three million dollars for further assistance.

He reviewed in brief the current locust situation and the way in which it attained alarming proportions in a period of months. He mainly attributed this development to widespread and continuous rains and to the inaccessibility of certain strategic breeding areas for survey and control operations. He also referred to the meeting of a Group of Experts held in Rome in the last week of June to consider the present Locust Emergency and to advise on measures to contain it. Action had already been initiated to implement the Group's recommendations. In the end he stressed that the locust problem and the need to keep it under control had become even more important as more and more areas were brought under agriculture through various developmental projects.

In order to enable countries to attain their planned agricultural production targets, it was necessary to control locust populations at the very initial stage of development to safeguard crops from damage. This is the policy in which FAO firmly believes, he added. Finally, he assured the Committee that the Director-General would give full consideration to their recommendations and do everything possible to contain this upsurge.

Officers of the Session

The Committee unanimously elected the following officers:

Chairman: Ramdane Kellou (Algeria)

Vice-Chairman: Farid Uddin Ahmed (Pakistan)

Drafting Committee: The Delegates of Algeria, Egypt, Iran, Niger and Sudan and the FAO Secretariat. Mr. J. Roy and Dr. J.S. Gill acted as Technical Secretaries and Mr. Gurdas Singh as Consultant.

Acknowledgements

At the close of the Session, the Members thanked the Chairman and expressed their warmest appreciation for conducting the business of the House in a very courteous and tactful manner. The delegates also thanked the FAO Secretariat for the efficient services provided for the successful conduct of the proceedings.

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The following delegations from Member Nations of the Food and Agriculture 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.

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AGENDA

1. Opening of the Session

2. Election of the Chairman and Vice-Chairman

3. Adoption of the Agenda

4. Election of the Drafting Committee

5. Review of the present locust situation, with particular reference to areas around the Red Sea and the Gulf of Aden, and forecast and measures to prevent its developing into a major locust plague

6. Improvement in surveillance, reporting, forecasting and transmission of locust information

7. Locust control potential available in member countries

8. Conclusions and recommendations

9. Date and Place of the Next Session

10. Adoption of the Report

SUMMARY OF DISCUSSIONS

The Desert Locust Situation

General Features During 1977-78

1. The locust situation during January - October 1977 declined generally: no swarming populations were reported from any of the three major breeding regions. In fact, the first ten months of the year could be described as a period of low level locust activity. The winter/spring rains were mostly deficient. The monsoons were, however, heavy in the Indo-Pakistan region and good rains were received in Libya at the beginning of the year and also in parts of Eastern Africa. Small-scale gregarious breeding was reported from the United Arab Emirates in April - May, the People's Democratic Republic of Yemen in April and from July to September 1977, and in the Yemen Arab Republic in January and February 1978. These populations were controlled at the initial stage. Scattered populations were reported from Somalia. Control operations were also undertaken in Sudan from January to April; in Libya, from March to June against patchy hopper bands and adult groups. The locust activity in North-West and West Africa was limited to scattered populations. No significant population was reported from Saudi Arabia. In India and Pakistan, the number of locusts observed in the summer breeding areas of Rajasthan and Tharparkar was very low despite favourable ecological conditions.

2. However, there had been exceptionally heavy rains in Ethiopia, Somalia and South-Western Arabia at the end of October and November. The presence of scattered to low density locusts in these areas was reported regularly earlier in the year. The highly favourable breeding conditions created by the rains resulted in rapid multiplication of those locusts leading to swarm production. The rains continued unabated in December 1977 and in the spring of 1978. At the same time several strategic areas of Ethiopia and Somalia remained inaccessible for locust survey. In Saudi Arabia the first swarm was reported from Jizan on 3 January 1978. Later on, the presence of locust swarms in that area, around mid-December, was confirmed by survey teams. These reports were followed by reports of the presence of swarms in the adjoining areas of the Yemen Arab Republic. In all, two dozen swarms were reported from the area between January and May. Extensive breeding followed in the infested areas. Numerous thick hopper bands and groups of fledgling were reported from several areas on the Tihama of the Yemen Arab Republic between January and April. There was a general rise of locust populations in the coastal areas and enhanced prospects of further breeding. But, intensive and vigorous ground and aerial control operations brought the situation under control by March in Saudi Arabia and by May, in the Yemen Arab Republic. About half a dozen swarms were reported near Riyadh in April and May, and locusts were also present in Jizan. These infestations were also controlled by timely action. In the People's Democratic Republic of Yemen, the presence of one swarm was reported in May 1978. Groups of locusts and hopper bands were detected in several areas and were controlled. However, the situation did not become serious. No significant locust activity was reported from Oman and other Eastern Arabian countries.

The locust situation in the Arabian Peninsula at present was reported to be quiet, but considerable numbers of solitaries persisted in several areas. Because of timely action in the Arabian Peninsula, swarm movement into Sudan and Egypt was prevented and no major influx of swarms from Ethiopia into Sudan has been reported so far. Scattered locusts were reported from the Nile and Kassala Provinces in Sudan.

3. In Eastern Africa, hatching commenced in north-west Somalia in early February 1978 and swarms produced from this breeding were produced in mid-March. By the end of May 50 locust swarms were reported from Ethiopia and 17 swarms from Somalia. Breeding occurred in sub-coastal and interior areas of both Ethiopia and Somalia from March to May 1978. Entry of seven more swarms from Eritrea into Tigre and Rift Valley was reported in mid-June. The presence of several swarms in north-western Ethiopi and northern Somalia had been confirmed by ground and aerial teams and many more were believed to exist in inaccessible parts. Extensive breeding was suspected and fresh swarms were expected by end-July (some of these may be there already). The available evidence is indicative of a serious locust situation in the Horn of Africa.

4. Elsewhere, locusts invaded India at the beginning of June over the Arabian Sea, which is a rare occurrence and had been reported earlier only once. Five swarms were observed which split further. Breeding took place at Gujrat, Haryana and Rajasthan and was being controlled. The development was not considered serious. One swarm reportedly entered Pakistan on 14 June from India and some more swarms entered at a later date and bred there. Fourteen swarmlets and 11,000 hopper bands had been destroyed up to the third week in July. The locust situation in West and North-West Africa was quiet.

South-West Asia

5. In India isolated adults were observed at a few localities in Jaisalmer and Bikaner districts between January and April 1977, the maximum densities being 225, 375, 15 and 1,500 per square kilometre in consecutive months. In April and May, light showers fell in Rajasthan and one fourth instar hopper was collected in the Jaisalmer district on 18 May. No adults were seen in the first half of May and only scattered adults at a maximum density of 50 per sq. km were recorded in the second half. In June, there was widespread and heavy rain throughout the summer breeding area, Bikaner recording 135 mm, Jaisalmer 70 mm, Barmer 46 mm and Jodhpur 126 mm, but only isolated adults at a maximum density of 600 per sq. km were recorded during the month. Solitaries persisted in Rajasthan with a maximum density of 825 per sq. km in July in Jaisalmer district; 3,825 in August in Bikaner and 1,200, 3,500 and 1,650 in September, October and November respectively in Jaisalmer district. No locust activity was reported from December 1977 to February 1978. In March, the maximum population was 15 adults per sq. km in Jaisalmer and nil elsewhere; in April 25, in Jaisalmer, and in May 15, in Jodhpur. However, five swarms invadad Gujrat State around 8 June by crossing over the Arabian Sea and split up into various swarmlets and some of them moved further to Rajasthan and Haryana. Scattered breeding took place in Gujrat, Rajasthan and Haryana against which control operations both by air and ground were in progress.

6. In Pakistan, rain was reported in many parts of the winter-spring breeding areas in January 1977. Only a few adults were reported from Mekran and in Lasbela district in January and early February. In the second half of February adults at densities ranging from 150 to 1,050 per sq. km were observed at six localities in the Pasni area, five localities in the Uthal area and at one locality each in Turbar, Khuzdar and Bhag areas. In March, isolated and scattered adults continued to be found in coastal areas and in areas progressively further north, including Kharan, Quetta, Kutchi and Chagai districts. The maximum density, 1,800 per sq. km was recorded in one locality in Lasbela districts.

Light showers were recorded in parts of Nushki and Panjgur areas in March and there were light showers in several localities in Winter-spring breeding areas in April, as well as light rains in Bahawalpur on 13 April. Low density populations of solitarious first and second instar hoppers were sprayed in Kharan district in April. Adults at densities ranging from 30 to 1,250 per sq. km were seen in several localities in coastal and interior areas. Again in May and in the first half of June only isolated adults were observed, at a maximum density of 750 per sq. km, in the winter-spring breeding areas. In the second half of June very heavy and widespread rain fell in both winter-spring and summer breeding areas and conditions became favourable for breeding. Low density scattered adult population was observed in summer breeding areas of Cholistan, Nara, Mirpur-Mathelo, Kutchi, Lasbela and Tharparkar areas from June to October and the maximum population was 4,000 adults per sq. km in Tharparkar desert during the second fortnight of August. In November, scattered adults were reported from Pasni area during the first fortnight and, thereafter, there was no activity up to the end of December 1977.

7. Low density scattered adults were observed in coastal areas of Mekran and Lasbela and a few stray adults were recorded in Kulanch Valley, Panjgur and Turbat area during February and March, 1978. The maximum population of solitary adults in April was 750 per sq. km in Kharan district. One swarm was reported to have entered Pakistan from the eastern border on 14 June and also some swarms entered at a later date. Breeding took place in Tharparkar, Khipro and Chachro desert areas. Control operations were undertaken against swarms and hoppers both by air and ground. Considerable areas had been strip-sprayed with dieldrin to ensure control of hopper infestations. About 11,000 bands of hoppers had been destroyed by the third week of July.

8. In south-eastern Iran, 20 adults were reported near Iranshahr on 8 January 1977. No further locusts were encountered until April when a survey of the Iranshahr, Chahbahar, Jaz Murian and Jiroft areas were undertaken. Between 11 and 30 April, 30 adults were seen at densities ranging from 25 to 200 per sq. km. Two late instar hoppers were also found during survey in the Jaz Murian. On 1 May four adults were reported from the Jask area, and two were reported from Dashtiari in the Chahbahar area later in the month. In June and July, only three stray adults were recorded in Jiroft area. Thereafter, one adult was observed in Jiroft area on 21 September and no locusts were recorded in November and December. In January and February 1978, scattered adults were reported from Chahbahar area and no locusts were observed in March, April and May.

9. In Afghanistan, low density mature adults were observed in seven localities in the Shorawak and Spin Buldak Valleys in south-eastern Kandehar between 7 and 17 May 1977. In all 33 individuals were seen at densities ranging from 50 to 300 per sq. km. Two females were observed laying in an irrigated wheat field on 16 May and one fourth instar solitarious hopper was observed on 10 May. No significant locust population was reported during the period June 1977 to June 1978.

10. The Committee considered the sudden appearance of five Desert Locust swarms in early June on the Indian coast of Gujrat and their subsequent spread into Rajasthan and Haryana. A part of these swarms entered into the Pakistan summer breeding areas adjoining Rajasthan. These swarms were most likely escapes from the breeding in the south-west Arabian Peninsula on the seasonal migration towards the east and were carried by a certain wind system over the Arabian Sea to India rather than having taken the traditional route to India via southern Iran and Pakistan after crossing the Gulf. This was, therefore, an unusual occurrence which could not normally be foreseen.

Near East

11. In Saudi Arabia, scattered locusts, at densities of 120 adults/ha, observed in Qunfidah area over some 200 sq. km during November - December 1976, persisted in the area until April 1977. Solitary adults were also found to the north of Qunfidah in Lith, Shagga ash Shamaliha, Shagga Yamaniah and Doga, at a maximum density of 300 adults/ha. Because of the lack of rain, breeding was reported to be on a small scale in the general area of southern Tihama. Also, in other parts of the country, only stray locusts were observed, mostly in the cultivated fields. The locust situation, in general, remained quiet until October. However, the heavy rains in October and November 1977 created highly favourable conditions for reproduction in the south-western parts. These rains continued until May 1978. Starting on 26 December 1977, about a dozen swarms were reported from the Jizan area of the southern Tihama, adjacent to the Yemen Arab Republic border. Extensive breeding took place in the area. These populations were controlled by mid-March through vigorous and timely aerial and ground operations. Because of persistent favourable conditions, patchy breeding continued and dense groups of hoppers and fledglings were reported from several places, notably in the sectors of Hayran, Zayish-Turba, Gumeisha, Al-Lawiya, Aa-Duryhmi, necessitating control operations by ground teams from February to May. In mid-April, the presence of four locust swarms near Riyadh was detected; swarmlets were also reported from Qunfidah and Lieth areas. Locust swarms were also present in Najran area at the edges of Rab-Al-Khali on 30 April and were again reported on 17 May and early June. Breeding took place in cultivated areas of Riyadh. Control was carried out against these populations and the situation at the end of June was described as calm: no swarms or hopper bands were detected in the country. Adults in low density existed in several parts, but the breeding areas were mostly dry.

12. The Yemen Arab Republic was reported free of locusts until November 1977, with the exception of a few adults in some areas. A locust swarm was reported at the end of December near the border of Saudi Arabia. Subsequently, ten more swarms were reported from northern Tihama between early January and February. Because of highly favourable conditions created by rains in October and November, large-scale breeding followed the visitations of swarms and a critical locust situation developed during January to March 1978. Emergency arrangements were made to airlift insecticides and ground and aerial operations were instituted with a US$ 250,000 assistance under the FAO Technical Cooperation Programme. By the end of April, these vigorous efforts brought the situation under control. Sporadic breeding in these and some other areas, however, continued and locusts were also reported from the eastern parts near Rab-Al-Khali in April - June. The incursion of a swarm from across the Red Sea into Khawkah, Aljarabeh and Al-Zedia (1512N - 4310E) was also reported on 10 May. Control operations were thus continued from April through June. The Tihama and eastern areas were reported to be dry in early July and the situation was reported as quiet. Some locusts were likely to be present in cultivated areas and other ecologically favourable breeding places.

13. In the People's Democratic Republic of Yemen, breeding on a small scale took place in the Masip area in August 1977, along the eastern coast. Control operations were carried out against patchy infestations spread over an area of 8 sq. km, using 500 kg of BHC dust. Otherwise, only scattered populations were reported from the coastal plains as well as the hinterlands during 1977. The rains during this period were generally below average and the conditions for development of locusts were not suitable. However, the rains in October - November 1977 extended into the country and were reported to be particularly heavy and widespread along the edges of Rab-Al-Khali. These were followed by widespread rains at the end of February, and light to heavy showers subsequently. Breeding conditions were, thus, favourable in many parts.

14. In January 1978, a marked increase in population was observed at Ramalat, Ballal, Haura and Bu Asker. In February, advanced stage hoppers and fledglings were located on the eastern coast and control operations were adopted. In March, low density hoppers of all stages were found at Khaber over 24 sq. km and more infestations over 300 sq. km were discovered in Wadi Hadhramaut in April. Control operations were carried out successfully. On 8 May, a small mature swarm entered the Republic from the north in Wadi Beihan and dispersed. Low density hoppers and fledglings were also reported from a number of places and a general increase in the locust population was also recorded in May and some medium-sized groups of locusts were observed. Control was adopted. In June, hopper infestations and fledglings were met with in the foothills of the western coast and were controlled. Considerable adult populations, in high numbers at some places, continued to persist in many parts of the country. Breeding on a large scale was likely in view of good recent rains.

15. In the United Arab Emirates, in February - March 1977, the Pakistani Locust Team reported the presence of scattered locusts in Ajman and Ras-Al-Khaima. These populations developed into medium-sized, patchy adult and hopper concentrations and 3,000 bushes were dusted with BHC for hopper control. No locusts were reported in the other months of the year. During 1978, very few locusts were found in the Emirates from January to March. At the end of April, low density solitary adults at a density of 225 to 1,500 per sq. km were observed in the Sharjah area; pairing was also seen and conditions were favourable for reproduction. A small swarm was reported to have entered Assila (2414N - 5714E) on 7 May and considerable numbers of mature yellow adults were found in the area. They were controlled and no locusts were reported in June and July.

16. In Oman, reports were received of the presence of scattered locusts in the Batina coastal areas during February 1977; these reports could not be substantiated during a special survey conducted in April - May and no significant locust activity was reported in the latter half of 1977. The lull in the locust activity continued in 1978 as well. Special surveys of Batina and other areas in March - April reported very few locusts. No locust reports were received during May to July; the country was reported to be mostly dry.

17. No locust activity was reported from other countries of the Region, namely Bahrain, Egypt (only a few scattered locusts), Iraq, Jordan, Kuwait, Lebanon, Qatar and Syria. (Sudan is reported under Eastern Africa).

Eastern Africa

18. The central position of the countries along the Red Sea and the Gulf of Aden in relation to the rest of the Desert Locust area and its liability to Desert Locust is very well known. Locust populations are always present in northern Ethiopia and Somalia and in the coastal areas of Sudan with varying degrees of infestation from year to year. The Region, being in the proximity of different rainfall regimes, also provides a sequence of seasonal breeding in which swarms of successive generations are able to mature rapidly and continue to breed. The present locust situation, which attained alarming proportions in a matter of a few months, was to be considered in this context.

19. Frequent heavy rains were reported in the northern and north-western regions of Somalia and in the Harar province of Ethiopia during January to April 1977. In June, with the northward movement of the Intertropical Convergence Zone (ITCZ) heavy and widespread rains were reported in the general area of the Ethiopian highlands extending eastwards into the northern Somali hills in May and June, whilst in the Sudan heavy rains were reported in the Dongola and in Wad-Medani areas. Heavy rains continued in the

Central Highlands, Dessie Escarpment, Chercher hills of Ethiopia and the Hargeisa and Burao regions of Somalia in July. During the last week of October an eastward moving wind brought widespread heavy rains over large areas of the northern Somali coast and Ethiopia from the Dessie Escarpment to the southern Red Sea coast of Ethiopia. Similar rains also fell in the adjoining areas of the southern Arabian Peninsula. These rains were reported as the heaviest for years. More rains fell in north-western Somalia, Djibouti and eastern Ethiopia in November and December 1977, and rainfall continued at frequent intervals throughout winter, spring and summer of 1978. This continuous widespread rainfall provided most favourable ecological conditions for rapid multiplication of locust populations.

20. In Ethiopia, scattered locusts were reported from January to June 1977. Stray adults were also caught at light in Asmara. In December 1977, adults and groups of hoppers in various stages were found on the Sudanese Red Sea coast and were expected to be present in the adjacent coastal areas of Ethiopia. Surveys were not carried out but nomads were said to have observed locust activity in localities adjoining the Sudanese border. A swarm was seen laying near Aiscia in March. In April, nine reports of swarms, mostly of a small size, were received from Aiscia and Duale areas. In May and June, more swarms were reported from Wallo, Gojjam and Harar provinces. In all 55 swarm reports were received between 31 March and 6 June 1978. On 7 July, a pink swarm, 8 x 2 km, was reported from Waldia and there were further reports of swarms entering the highlands where heavy rains and poor visibility was rendering the control operations rather difficult. Three egglaying swarms were observed between 11 and 18 July in Makalle area. Control operations by ground and air were undertaken.

21. In Somalia, low density scattered adults and hoppers at varying densities were observed through 1977, especially in Bossaso and Burao regions. Dense groups of IV to V instar hoppers and fledglings were reported to be controlled in Silil area of north-western Somalia in early January. Numerous reports of hopper bands covering several hundred sq. km were received in March, and swarm formation was also reported. Between 22 March and 31 May, 22 swarms were reported from various localities. These swarms were being held up by the strong south-westerly winds, along the line of the northern foothills and escarpment. On 19 and 20 July three swarms of medium density were reported at Hargeisa and Erigavo and at Aw-Barkhade. Control operations by air were undertaken.

22. In Sudan, rains in December 1976 produced good growth of vegetation and groups of mature locusts were copulating. During January 1977, medium density adult concentrations and groups of hoppers of all stages were found in the southern sector coastal areas and control was continued using 107,800 kg bait, 360 l malathion and 1,500 kg BHC dust. Because of favourable breeding conditions, copulation and laying continued in central and southern sectors in February. Hopper bands of I - II stages in March, and of all stages in April, were found in the area, together with scattered adult groups. Control operations, carried out from December to April 1977, reduced the population as only stray adults were reported in May from the southern sector.

23. Locusts, in low numbers, moved into the summer breeding areas and isolated adults were reported in July and August 1977, but no significant population was observed even up to September. Scattered adults were again observed in the Tokar Delta, along the Red Sea, in October. In November, heavy rains were received on the southern Red Sea coast followed by frequent showers, thus providing most suitable conditions for breeding. By December, the whole of the Tokar Delta area was infested with hoppers and adults. Rains continued in January 1978. A laying swarm was reported in the Tokar Delta on 19 January. This was reported to have come from a south-easterly direction. At the same time, an infestation of fledgling and maturing adults was found over 2,830 ha on the southern Red Sea coast. Also north of Port Sudan hoppers were found in the hinterlands. Ecological

conditions continued to be favourable. On 3 February, another mature swarm which had come from a south-east direction was reported settled in the Dambil area of the Tokar Delta and had subsequently laid eggs in the area. During the same period, first stage hoppers were found over a large area, probably the progeny of the swarm reported in January. Infestations continued until March. From April to June, dry conditions prevailed in the area and there were no reports of any further infestations. Control operations both by air and ground, which commenced in November 1977, were successfully concluded by March 1978. From April onwards, dry conditions prevailed and the locust population was on the decline. In July, heavy rains had been received in the eastern parts of Khartoum, White Nile and Kassela Provinces, where favourable conditions exist for breeding. The traditional summer breeding areas of the Northern Province have also received good rains.

North-West Africa

24. In north-western Libya, heavy rains fell in January 1977 in Hamada el Hamra. Scattered adults were reported from the area in February and in March; these started to form groups and control operations commenced. Further heavy rain fell in north-western Libya in April, 187 mm were recorded in Tripoli in a four-day period. Scattered adults were found between Mizda and El Gheriat in north-central Tripolitania and in Hamada el Hamra in early April, and isolated adults were found in the Grarat Rhuma region in mid-April. Control measures were undertaken in Hamada el Hamra in April and May against groups of hoppers, which occurred at densities of 15 - 30 per clump in Wadis Megharghar and Limmed. Further control measures were successfully conducted against gregarious immature adults of a density of 25 per sq. m over an area of 19 km x $\frac{1}{2}$ km in Wadi Awal in June. In all these operations approximately 57,625 kg of poisoned bait were applied. Surveys between July and October did not reveal the presence of locusts. Rain fell in November and December but the locust situation remained generally calm until July 1978.

25. In central Algeria, there were widespread moderate rains in January 1977, but by March the only areas with green vegetation were in the east, in Wadis Tekhammet, Illizi and Tadjeradjer. Here scattered, mainly mature, adults at densities of 10 - 3,000 per ha were seen, some of which were copulating. Heavy rain fell at the end of March and the beginning of April over a wide area in central and eastern Algeria and isolated adults were found in wadis east and north-west of Tademait in April and May. Mature adults were found over an area of 1,500 ha in Wadi Zaret on 25 April but by mid-May conditions in this area were no longer suitable for breeding or aggregation of locusts. Scattered adults were also found in western Algeria in May in Wadi Zousfana, south-east of Bechar. By the end of June, the vegetation had started to dry and the locust populations were dispersed. No significant developments were reported until April 1978. In May 1978 the vegetation was reported to have started to sprout and light showers were received in the region of Boubernous and two adults were observed at El-Kahal (2708N - 0406E).

26. In southeast Morocco, a few scattered adults were found in January and March 1977; in a survey undertaken in July, no locusts were seen and the conditions were generally unfavourable. Light showers were received in October but the locust situation remained calm until July 1978.

27. In Tunisia, the locust situation during 1977 - 78 remained quiet; only a few scattered maturing locusts were found in the extreme south during April 1977, but no breeding was reported.

West Africa

28. In Mauritania, a swarm and hopper bands were reported by nomads in Trarza at the beginning of January 1977 but this report remained unconfirmed. During February isolated hoppers and scattered immature and mature adults were found at several localities south of 19° N, and in March a few isolated adults were present east of Boutilimit, in Trarza. In April, the Inter-Tropical Front was active as far north as 20° N between the 16th and 23rd and resulted in rain falling between M'Bout and Nema, where by May there were small patches of green vegetation. A few adults were seen at Tin Goumbou in south-western Hodh in May. There was light rain in south-eastern Mauritania in May and to the south of 17° N in June. Six adults were captured south-west of Tamchakett on 21 June. From July to December, rains were generally deficient, except southern and south-eastern Mauritania where good occasional rains were received. No significant developments in the locust situation were reported during 1977 and 1978.

29. In Mali, isolated immature adults were recorded at several localities in the Adrar des Iforas and western Tamesna in March and April 1977. Traces of rain fell in these areas in April, but in May rain was more widespread and some wadis were in flood. During May isolated adults were reported to be maturing and mature, and in June isolated adults were found in three wadis in the western Adrar des Iforas. Rains were below average from July to December when no important locust activity was observed. In January 1978, solitary adults and hoppers were observed in western Mali. No locust activity was reported during March and April. Normal rains were reported from Mali in May and June. Mature adults at densities up to one adult per ha were found in western and central Adrar des Iforas of Mali.

30. In Niger, a few immature adults were captured in east Tamesna at Arlit and Aguelal in May 1977. Rain was widespread in east Tamesna on 1 May and further light rain fell in May and June in Tamesna and Aïr. From July to December 1977 parts of Tamesna of Niger received good occasional rains. Solitary adults and hoppers were observed in Hoger in January 1978. No locusts were reported during March and April. Normal rains were reported in May. Certain rains were reported in July and August where breeding was expected.

31. Other countries of West Africa were reported free from Desert Locust activity.

32. Data on control operations undertaken in various countries is given in Appendix I.

Forecast

Near East

33. In Saudi Arabia, no locust swarms or gregarious breeding were reported after May 1978. During June 1978, no rainfall was recorded in the Tihama or interior areas of Saudi Arabia, apart from light showers in the Asir mountains. The infestations previously reported were largely controlled and the remnants dispersed by strong winds and high temperatures. The present situation was described as quiet. The presence of a few pockets of gregarious locusts in the interior areas could be expected and considerable numbers of solitaries existed in several parts. In the Yemen Arab Republic, no major gregarious populations were reported after early June, but large numbers of solitaries and possibly some undetected adult and hopper concentrations were present. Increased locust activity was observed in the People's Democratic Republic of Yemen in May and June, although no swarms or large scale gregarious breeding was detected. Accordingly, with the onset of rains, extensive breeding and rapid build-up of populations was a distinct possibility, especially in the People's Democratic Republic of Yemen. An influx of swarms from the west across the Red Sea was also possible with a repeat of the previous year's sequence of locust events. In October - November extensive control operations would seem necessary in late 1978 and particularly in early 1979.

Eastern Africa

34. In northern Somalia, the swarms are held up at present by the strong south-westerly winds along the line of the northern foothills and escarpment. In July, an easterly movement of swarms from Ethiopia into Somalia should be expected as the low level convergence zones move north and the swarms come under the influence of the converging south-westerly and northerly winds. At the same time, some swarms, if any exist in the southern Arabian Peninsula, might cross over to Africa and move to the north-western Somali Highlands in late July, should the wind direction become favourable. These may be held in the traditional sheltered area of Borama and, then, drift eastwards. North-eastwards concentration of swarms along the northern foothills will continue until north-easterly winds become dominant in the escarpment areas about mid-September and swarms start moving south-west and breed in Ogaden of Ethiopia and parts of southern Somalia and north-east Kenya.

35. Escapes from southern Somalia and the south-eastern part of Ethiopia (Ogaden) are likely to invade Kenya in end December, early January.

36. In Ethiopia, swarms were reported to have laid eggs in late June 1978 in Tigre, Wollo and in Harar provinces. Further to the north, winter/spring breeding of a parallel intensity to that on the opposite coast of the Red Sea (Saudi and North Yemen Tihamas) is thought to have occurred on the Ethiopian Red Sea coast. Escaping progeny of this breeding would be expected to move south-east drifting through Falcat and Anseba valleys and would now (July) be mature and egg-laying in the northern slopes of the north-western highland of Ethiopia. Some of the swarms, if developed from this area, are likely to move south-eastwards and breed in the south-eastern Ethiopian "Short Rains" breeding areas.

37. In Sudan heavy rains have been received since early July 1978 in the eastern parts of Khartoum, White Nile, Gezica and Kassela Provinces where highly suitable ecological conditions exist for breeding of any incoming swarms from the Ethiopian side. The typical summer breeding areas of the Northern Province have also received rains, where breeding is also expected. Any escapes from this area would most likely move towards the Red Sea coastal plains but the possibility of some small swarms moving westward to Morocco in October/November cannot be ruled out.

South-West Asia

38. The breeding in India and Pakistan was likely to be controlled soon. However, heavy monsoons fell in the traditional summer breeding areas in July causing floods in certain areas of Rajasthan. This was likely to result in further breeding and possible swarm formation on a small scale by end September/October 1978. Consequently, considerable migration of locusts into Mekran and south-eastern Iran in October/November would take place. In view of continued breeding and serious locust situation in the Horn of Africa and the presence of considerable locusts in the south-west Arabian Peninsula with prospects of heavy breeding during winter-spring of 1978/79, the Committee was of the opinion that locusts, including swarms, could invade South-West Asia in early summer 1979.

North-West and West Africa

39. There are no significant locust populations in the two regions at present. Some significant rains were received in parts of West Africa and the long-term rainfall forecast for the region was also said to be good. Increased locust activity was expected in the coming months. In case of summer breeding in Sudan, there was also some possibility of a westward movement of swarms from this area reaching as far as Morocco in October/November.

Measures Taken to Meet the Present Desert Locust Emergency and Future Considerations

40. The present serious locust situation had been brought about by a succession of events. There were prolonged and exceptionally heavy rains over large strategic areas providing ideal breeding conditions. Many of these areas remained inaccessible for survey and control and in others only limited control operations were possible. Because of the long recession in locust activity, the stocks of equipment and pesticides were utilized for general crop protection and the resources to fight locusts were mostly low and in poor condition. The situation in Ethiopia and Somalia can be described as grave and, if not controlled through adequate and timely action, could develop into a new locust plague and spread to other countries. It, therefore, demands serious consideration and undertaking of immediate steps to control the existing swarms and their progeny.

Measures Taken to Meet the Situation

41. FAO passed on the information about the heavy rains in October in the Horn of Africa and its possible repercussions on the reproduction of existing populations to countries bordering the Red Sea. A note on the rainfall situation was also circulated to the Eighth Session of the Commission for Controlling the Desert Locust in the Near East in December 1977. The Commission took note of the rains and the possibility of rapid multiplication of locusts in the winter-spring period, migration of locusts into south-west Saudi Arabia and adjoining areas of the Yemen Arab Republic and coastal plains of Sudan, including some swarms. The Commission also considered the possibility of local breeding and recommended advance action by member countries (Report, paragraphs 12 and 13).

42. In view of the information received during the Session of the Commission about the presence of locusts at the edges of Rabul-Khali and possible breeding, the Commission decided that surveys should be arranged by the national anti-locust units of those areas to verify the report (Report, paragraph 21).

43. Special surveys of the strategic areas were organized : Oman (March-April 1978), United Arab Emirates (January-June 1978) and Southern Iran (April-May 1978).

44. Regular surveys and quick control operations in the Yemen Arab Republic and the People's Democratic Republic of Yemen were ensured by the FAO Locust Officer in Aden and Hodeidah, and with the active and willing cooperation of the national units of the two countries. The FAO Regional Locust Officer, Jeddah assisted in the overall effort by helping in the organization of ground and aerial surveys and maintaining the flow of supplies.

45. FAO Headquarters issued four special locust situation reports, informing the Governments of latest and future developments, suggesting action to be taken by them. Any urgent information was transmitted by FAO through the quickest available means, including telephone.

46. As the situation developed and became serious in several areas, the news of the impending threat of a locust plague was widely reported in the world news media. FAO maintained active liaison with the press and issued press releases to provide factual information.

47. The locust situation is intimately related to rainfall; and increased locust activity was expected as the October 1977 rains continued into November. In the wake of continual favourable conditions, rapid multiplication and swarm formation was also foreseen, especially in the coastal areas of Ethiopia and Somalia where no surveys were being made. The developments were largely, thus, forecast by FAO and the locust situation reported to all concerned. Besides, concerted efforts were made to destroy locusts at an early stage and prevent their spread to other areas. The following specific actions are brought to the notice of the Committee.

Saudi Arabia

48. The FAO Regional Locust Officer in Jeddah kept the neighbouring Governments informed about the locust situation in the country. During 1977/78, he had a series of meetings with Government officials in Jeddah and Riyadh and assisted them in survey and control operations. In addition, Headquarters staff visited the country frequently for discussions with the Government at a high level on the arrangements required to cope with the situation. At the request of the Government of Saudi Arabia, FAO procured from the DLCO-EA one spray aircraft with crew, which operated in the infested area of Tihamah from February to April 1978, using 30,000 litres of insecticides.

Yemen Arab Republic

49. The FAO Locust Officer, Hodeidah, assisted in organizing and undertaking control operations in close cooperation with the national anti-locust teams. Following the urgent appeal from the Government for more supplies of insecticides, 20 tons of dieldrin were purchased from the DLCO-EA and airlifted to Hodeidah. Also, a shipment of 40 t of BHC dust, donated by the Government of Saudi Arabia, was expedited by the FAO Regional Officer. In order to strengthen operations, one DLCO-EA aircraft was obtained for spraying from 23 to 26 April 1978, using 12 t of dieldrin.

Assistance under the FAO Technical Cooperation Programme

50. The Director-General sanctioned a sum of US$900,000 for emergency assistance to the most affected countries under the TCP for the purchase of essential equipment and pesticides, to enable them to replenish their stocks and continue the campaign. These supplies were ordered promptly and a part of them had been received in Sudan and the rest were still to be delivered.

Field Missions

51. A field mission consisting of the FAO Regional Locust Officer, Teheran and the FAO Regional Officer, Dakar, visited Somalia and Ethiopia and Djibouti respectively in June to review and assess the locust situation. Their visit was followed by the visit of a senior mission consisting of the Director of AGP Division and the Senior Officer of the Locust Control and Emergency Operations Group.

Meeting of the Locust Experts

52. The locust situation has been receiving the personal attention of the Director-General of FAO, who has expressed his concern over its seriousness and the need to prevent it spreading further. Accordingly, to consider the situation further, the Director-General convened a meeting of the Locust Experts on 23 June 1978 in Rome. The meeting adjudged the situation as indicative of serious developments and recommended:

(a) Top priority should be given to the control of the existing locust populations in Somalia and Ethiopia.

(b) The control potential in areas around Somalia/Ethiopia should be strengthened to destroy escapes.

(c) To ensure the success of the campaign through effective supervision, expert personnel should be made available to the DLCO-EA.

(d) The situation should be reviewed at the end of three months and further assistance made available.

(e) Further periodic reviews, possibly every six months, should be undertaken until the situation is brought under control.

(f) Consideration should be given for donor support to OCLALAV on a short-term requirement over the next six - eight months.

(g) The problem of collection and transmission of locust intelligence should be carefully re-examined at the next Session of the DLCC in July 1978.

Consultants

53. To provide effective supervision and ensure proper assessment of the situation, consultants had been arranged for:

(i) assessment of the situation in the Yemen Arab Republic in February and March 1978;

(ii) overall coordination and conduct of the campaign in the Horn of Africa. They include a high-level Locust Expert, Pesticides Application Expert, Expert on Aerial Application and Wireless Expert.

Assistance to DLCO-EA

54. In response to a request by DLCO-EA made in January 1975, assistance amounting to $750,000 was promised through the personal approach of the Director-General to the donor Governments. ($180,000 in cash and $570,000 in kind.)

55. As the locust situation in Ethiopia and Somalia became serious and the resources of the DLCO-EA dwindled and became inadequate to face the emergency, the Chairman of the DLCO-EA Council made a personal appeal to the Director-General of FAO for assistance amounting to US$ three million. Considering the gravity of the situation and the imperative need to control it, the Director-General again made a personal appeal to the meeting of donor Governments on 12 July 1978; several Governments made firm commitments and others indicated firm positive action soon. The total contributions to the Director-General's appeal is likely to be known soon.

Use of Working Capital Fund for Emergency Operations

56. A sum of US$500,000 has also been authorized by the Director-General of FAO from the WCF for organizing emergency operations against locusts. From this amount, $350,000 has been allotted for immediate supplies of equipment and pesticides to the DLCO-EA. These supplies have been ordered and are on the way to the respective countries.

Emergency Session of the DLCC

57. This Session of the DLCC, which was to be held in the first week of November 1978, has been brought forward to 26 to 28 July to enable the member countries to review the present locust situation and to suggest ways and means to meet it so that its further spread is prevented and a serious threat to agricultural production is averted; and food losses are avoided in areas already suffering from chronic shortages.

58. The Committee appreciated the initiative and action taken by FAO to keep the various Governments informed of the latest developments in the locust situation, and the generous response by the Director-General in providing immediate and possible future material assistance to various countries and Regional Locust Organizations to enable them to cope with the present Desert Locust situation and to bring them to the required level of efficiency. The Committee, however, noted that the assistance provided by FAO was in no way intended to relieve individual Governments and Regional Organizations of their respective responsibilities. FAO's efforts were directed towards the overall international strategy of Desert Locust control and to provide assistance to the various countries and

Organizations to help to check the spread of the plague to the neighbouring areas. FAO's main role remains to assist the Member Governments and Regional Organizations in coordinating and promoting national, regional and international efforts against a common enemy - the Desert Locust.

Measures Proposed

59. It was understood that the overall objective of the FAO Desert Locust Programme is to minimize the colossal losses caused by the winged menace and, thus, assist the Member Countries in their efforts to increase agricultural production. This can be achieved only through concerted and cooperative action at the national, regional and international levels and with the application of a rational strategy using the most modern means. The present strategy lies in the timely detection of locusts and killing them at an incipient stage, before they increase to unmanageable proportions. The execution of such a policy involves technical, financial and administrative problems.

60. Regular surveys during the appropriate seasons are a basic essential for successful preventive action. A combination of air and ground reconnaissance offers the most rational means of detecting locust populations. The techniques have been well defined in various FAO meetings and other technical publications and are known to the national anti-locust organizations who have the prime responsibility to undertake surveillance.

61. Based on the information on the general and seasonal distribution of locusts and meteorological and ecological background of their behaviourial movements, such periods of the year, together with areas where particular attention needs to be given for survey, are mentioned again below:

South-West Asia

December - March	- Southern Iran (Bandar Abbas to Ahwaz, Bandar Abbas to Chahbar)
April - May	- Southern Iran (Hinterland)
January - April	- Pakistan (Kulanch and Dasht Valleys)
June - September	- India and Pakistan (summer breeding areas: Barmer, Bikaner, Jaisalmer and Bahawalpur)

Near East

October - February	- Saudi Arabia (Jeddah, Maidi, Jeddah)
February - March	- Saudi Arabia (Jeddah, Yenbo, Weij areas)
February - May	- Saudi Arabia (Asir and the interior of southern Saudi Arabia)
March - May	- Saudi Arabia (Hejaz, Nefud and Qassim)
October - March	- Yemen Arab Republic (Red Sea coast)
August - September	- Yemen Arab Republic (Interior)
May - September	- P.D.R. Yemen
October - January	- Egypt (south-eastern desert)
March - June	- Egypt (south-eastern desert)

	Eastern Africa
November - March	- Somalia (northern coast: Las Durah to Djibouti)
June - September	- Somalia (south of the coastal escarpment)
March - May July - September	- Eastern Ethiopia and Djibouti
November - April	- Ethiopia and Sudan (Red Sea coast)
May - September	- Sudan (interior: Kordofan, Darfour and the Northern Province)
December - March	- Northern Province of Kenya
	North-West Africa
October - April	- Southern and central Algeria - Southern Morocco
	West Africa
June - October	- Chad, Mali and Niger, northern Senegal and parts of Mauritania and western Sahara
October - March	- Niger and Mali, northern Mauritania (north to 20° parallel) and the northern part of the western Sahara

62. The above periods and areas should only be regarded as general guidelines to look for locust populations. There will naturally be a lot of variation which will depend upon the time and distribution of rainfall during a particular year. The countries concerned are, therefore, in a better position to decide the actual time and areas of survey during a particular season. It is possible that in certain countries resources and technical staff may not be available with the national organization for survey of strategically important breeding areas. Under such circumstances, joint or special surveys should be arranged to cover these important localities in the overall interest of the region.

63. During 1976 and 1977, FAO carried out preliminary studies on the application of remote sensing techniques to improve the efficacy of locust surveys with promising results. Based on the recommendation of the Twenty-First Session of the DLCC, a Pilot Project for further experimentation was prepared and submitted for donor support. The necessary financial support is still awaited.

64. The Committee emphasized that, while the collection of locust information was vital for taking timely control action, its transmission, collation and dissemination at regional and interregional levels was equally important. It was essential that the Governments be forewarned of the threat of locusts so that appropriate action be planned and taken at the right time. For this purpose, wireless sets are available with most national organizations but, over the years of long recessions, such facilities have tended to deteriorate both in quantity and quality. These need to be reviewed and strengthened. Also, the timely transmission of locust reports is to be ensured.

65. The Committee emphasized that unless an incipient population is controlled immediately after detection, it can build up into swarming proportions over a short period under favourable conditions, as happened in 1968 and 1969 and as is happening at present. Sufficient control potential should, therefore, be available with the national units for immediate deployment. These facilities should exist in the nature of a fire brigade kept in top readiness to be moved to the trouble spot to extinguish the fire before it becomes a conflagration. The wholesale diversion of locust control potential to general pest control during recessions should be avoided. In fact, the two tasks should be viewed as complementary activities, the old equipment and insecticides belonging to locust control could be used for plant protection to avoid deterioration in storage and replenished by new stocks.

66. It is now well proven that aerial application of insecticides offers an effective means to undertake locust control operations over large areas in a short time. Areas infested with scattered populations can be strip-sprayed with savings in insecticides. Aerial operations supplemented by ground operations should form an integral part of a locust control strategy. The results of a locust control campaign should also be assessed, evaluated and prepared in the form of a report.

Contributions from Donor Countries

67. The Committee and the Director-General of FAO, through the Deputy Director-General, expressed their warmest appreciation to the Government of Saudi Arabia for the generous offer to provide US$500,000 for anti-locust operations, in response to the Director-General's personal appeal. Furthermore, the Committee noted with satisfaction the prompt and efficient Desert Locust control measures which had been taken by the Kingdom of Saudi Arabia, while, at the same time, assisting in control operations in the Yemen Arab Republic. The Committee appreciated these efforts, which were being made not only in the interests of Saudi Arabia but also of other countries affected by the Desert Locust.

68. The Committee and the Director-General also expressed their gratitude and thanks to the Government of Sweden for its contribution of Kroners 500,000 (approximately US$ 110,000) for locust control operations. The representative of Sweden, referring to the FAO/SIDA project on the use of alternative insecticides for locust control, stated that his Government would be interested in seeing this type of work continued in future, especially the large scale field testing of insecticides found promising in laboratory trials against locusts, as substitutes for dieldrin and BHC.

69. The delegate of Iraq informed the Committee of the assistance which had been provided by his country to the People's Democratic Republic of Yemen, the Yemen Arab Republic and Oman and indicated that such assistance could be considered to other affected countries if requested. The Committee expressed its thanks to theGovernment of Iraq for bilateral assistance already given and for further assistance under consideration.

70. The delegate of France informed the Committee that for many years the Government of France provided financial assistance for anti-locust operations in West Africa. Taking into consideration the recent developments in the locust situation, the Government has increased its contribution from $500,000 in 1977 to $700,000 in 1978. He further stated that should the Sahelian Zone be invaded by swarms, his Government would be willing to consider providing support personnel for aerial operations. At the same time, the Government of France would also examine the possibility of further assistance in other parts of Africa.

71. The Committee listened with great interest and appreciation to the statement made by the Deputy Director-General, on behalf of the Director-General, that a number of other countries, in addition to those mentioned above (paragraphs 67 - 70) had already made specific commitments to his personal appeal and others had indicated their willingness to assist and were exploring ways and means of doing so. The Committee noted with great appreciation that pledges had been made by Canada, Denmark, the Federal Republic of Germany through its Freedom from Hunger Campaign, Norway, Saudi Arabia, Sweden and Switzerland, in cash or kind. In addition, bilateral assistance was being provided by the Governments of the Federal Republic of Germany, the United Kingdom and the United States of America. The Governments of Belgium, France and the Netherlands were also considering the provision of assistance.

72. The Committee highly appreciated the personal interest shown by the Director-General by providing emergency assistance for locust control under the Technical Cooperation Programme and the Working Capital Fund amounting to US$900,000 and $500,000 respectively. The Committee also expressed its gratitude to the Director-General for his efforts in using his good offices to obtain further assistance from donor Governments through his personal appeal.

National Control Measures

73. The Committee, having heard the account of the present locust situation in Eastern Africa, expressed the hope that any difficulty in carrying out control operations in some of the strategic areas in the Horn of Africa would be removed and requested countries concerned to give full consideration to ways and means of undertaking effective control operations in this area.

74. The delegate of Ethiopia explained the arrangements made by his Government to undertake control operations against the present infestations. He stated that all the Plant Protection Units and all other members of the public had been alerted by the Government to report all locust movements and to carry out control particularly against hoppers and possibly settled swarms. To coordinate the anti-locust operations, the Minister of Agriculture and Settlement had established a locust emergency "Task Force" consisting of the Director-General of DLCO-EA, Head of Plant Protection and Regulatory Department, State Farms Pest Control Section, Institute of Agricultural Research (I.A.R.) and EPID. The "Task Force" would:

- coordinate ground and aerial operations;
- receive information on locust incidence;
- scrutinize information as to its accuracy;
- arrange ground support for DLCO-EA aerial operations;
- issue instructions to Agricultural Extension Agents and other Government Departments for reporting on locust occurrences.

He also gave details of the control operations undertaken so far and assured the Committee that all efforts would be made to undertake operations successfully in the country.

75. The delegate of Somalia informed the Committee that there was no difficulty in carrying out operations in his country and there were no restrictions on the movement of locust teams and for aerial operations in the areas of present infestations. He assured the Committee that his Government would extend fullest cooperation to any national, regional or international efforts in combating the locust plague. He explained that the main constraints to successful control were the lack of availability of equipment and supplies.

76. Recognizing the problem of non-availability and/or short supply of suitable insecticides in developing countries for locust control at a critical time, the Committee recommended that FAO should give consideration to establishing buffer stocks of such insecticides at appropriate places so that the Governments concerned could draw upon these stocks on a replacement basis. In order to avoid losses in storage, the insecticides should preferably be stored in the form of technical grade material in countries and places where facilities for formulation exist.

77. The Committee noted that, in view of the continuance of the existing emergency, as was foreseen at this stage, a number of countries specially having strategic breeding areas and at present under the grip of the upsurge, would need supplementary assistance to strengthen their anti-locust services, of such equipment and supplies which were not readily available locally. FAO should examine the possibility of providing such assistance within the limitation of available and additionally acquired resources.

FAO/SIDA and FAO/DANIDA Projects

78. The Committee took note of the continued keen interest of Member Governments, notably the U.S.A. and Egypt, and also of the Government of Sweden in the studies carried out under the two Projects, namely the FAO/SIDA Project on the use of alternative insecticides for locust control and the FAO/DANIDA Project on monitoring of pesticide residues in areas sprayed for control of the Desert Locust, and the very useful work done under the two Projects. Since no suitable substitutes for dieldrin and BHC for hopper control were found, and the chemicals which proved promising in laboratory tests were yet to be tested in the field, the Committee recommended that the work started under the two Projects should be continued after their closures in 1978. The Committee was informed that a Chemist Consultant had been employed for three months to field test some of the promising substitute chemicals found under the FAO/SIDA Project. These tests were being carried out against gregarious hopper populations currently available in Somalia and Ethiopia. The Committee was further informed that it was proposed to submit a new composite project for donor support to continue the work initiated under the two projects. The Committee appreciated the appointment of the Chemist Consultant for field testing of the promising chemicals and the proposals for a new project and hoped that suitable donor support would soon be forthcoming for the project. The results of such a project would be useful not only for the control of the Desert Locust but also of interest to pesticide users in general. (Details of previous work of these Projects are given in paragraphs 43 - 50 of the Report of the Twenty First Session of the Committee.)

Surveillance, Reporting, Forecasting and Transmission of Desert Locust Information

79. The Committee reviewed the present status of reporting, forecasting of Desert Locust incidence and transmission of such information to all concerned by the national and regional organizations. It was recognized that the present Desert Locust strategy was based on timely detection and control of incipient locust populations before they reached swarming proportions. Effective surveillance was considered essential for success of the programme. Without accurate information on the extent and size of the infestations, it was not possible to make forecasts. The question of collection and transmission of locust intelligence was considered fundamental to the situation and equally important was the means of transmitting the information quickly to all concerned. The main objective of reporting and forecasting was to provide a continuing flow of information on the ever-changing Desert Locust situation to the national and regional locust organizations so that they could plan and carry out control measures more efficiently and effectively.

80. The Committee was informed that at present locust information was being collected and disseminated mainly at the regional level. Consolidated monthly summaries on the basis of reports received from the national and regional organizations, special locust situation reports and press releases were issued from Rome as decided by the Committee at its Sixteenth Session (Report, para. 28). The Committee noted with some concern that several countries did not send any reports, perhaps because of the prolonged recession in locust activity and the information was often lacking in detail and seldom received in time, thus making it difficult to prepare detailed monthly summaries and a reasonably good forecast. Inadequate support staff both with Regional Officers and at FAO Headquarters and a lack of receipt of timely detailed reports prevented the preparation of detailed locust situation summaries on a regular basis.

81. Recognizing the need for improvement in the present standard of reporting, the Committee recommended that the following reporting procedure be adopted with immediate effect:

(i) Field staff should be instructed to report all hopper and adult populations according to the appropriate Locust Reporting Form. On this they should specify quite clearly whether they made the sighting or whether they heard about the report from someone else. Where possible, information on sightings should be passed on to the national locust Headquarters by radio daily and written confirmation of all sightings should be sent on the appropriate reporting form weekly.

(ii) National and Regional Headquarters should send copies of all sightings to FAO Headquarters weekly for the present (and also to COPR London to maintain the archival record there).

(iii) Situation summaries should be prepared by national Headquarters fortnightly and sent by telex or cable to its own adjacent Regional Offices. These summaries should state the number and estimated total areas of swarms, provinces infested, general direction of displacement, maturity, main areas of breeding and insecticide applied.

(iv) Information about major or unexpected events, e.g. cyclones or the first arrival of swarms in an area previously clear, should be sent by cable to FAO, Rome, adjacent countries and Regional Headquarters.

82. The present state of reporting and forecasting services calls for immediate attention in order to ensure there were more precise and timely reports, quicker transmission of the consolidated information and higher quality forecasts so that control organizations could operate more efficiently and effectively and FAO be in a better position to marshal and coordinate the survey and control efforts on the appropriate scale.

83. The Committee made the following further suggestions to improve the present situation:

i) As recommended at the meeting of Group of Experts held in Rome on 23 June (Report, para. 17) the existing arrangement at FAO Headquarters should be suitably strengthened in order to:

- prepare comprehensive detailed monthly situation summaries and maps in the middle of the month following the month being reported on for distribution to all countries, organizations and commissions by the most rapid means;

- issue a monthly forecast of the timing, direction and scale of migration, and the timing and scale of breeding for the following two - three months for distribution to all countries, organizations and commissions by the most rapid means;

- send telegraphic warnings if major changes in the locust situation are imminent.

ii) The transmission of national reports will depend upon the timely receipt of information from the field staff. To ensure its quick transmission, the national locust radio network should be maintained properly and kept operational.

iii) FAO should appoint a short-term consultant to examine what staff, space, maps, archival material and facilities for receiving meteorological information are required at Headquarters in order to prepare the summary and forecast.

84. The Committee noted with appreciation that the Centre for Overseas Pest Research, London, would be willing to assist in improving the present facilities in reporting and forecasting. The Committee requested FAO to discuss details in this respect with COPR to further strengthen the existing cooperation between the two bodies.

Application of Remote Sensing Techniques

85. The application of Remote Sensing Techniques to improve the efficacy of locust survey and control was a very promising field. This had been confirmed by the preliminary experimentation undertaken by FAO in North-West Africa. The Expert Group, therefore, recommended that further experimentation in this field should be continued on a high priority basis. The Committee recommended that the Pilot Project already prepared by FAO should be submitted for a wider donor support. The Committee also recommended that the FAO Remote Sensing Unit should be suitably strengthened in order to undertake this additional work.

Use of Telex for Transmission of Information

86. Having discussed in detail the use of telex for transmission of locust information, the Committee agreed that the use of telex is both economical and quick and should be utilized wherever such facilities already exist. For those countries who might need new installation, it would be desirable to investigate the matter further at a national level for administrative clearance, availability of lines and funds and local variations. It was pointed out that the Governments, in consultation with the UNDP Representative in their countries, could make use of the telex and pouch wherever such facilities exist.

Collaboration with Other Agencies

WMO

87. The Committee was informed by the representative of WMO of the desire of the Secretary General of WMO to collaborate to the fullest on the meteorological aspects of the present serious Desert Locust control problem. It noted the various fields in whioh WMO oculd assist and decided that, rather than list out the different ways in which it wanted WMO to help, the Director-General of FAO should make the necessary requests to the Secretary General of WMO ab the appropriate time. The Committee wished to thank the Secretary General of WMO for his offer of oollaboration.

UNDP

88. The representative of the UNDP drew attention to his Organization's long standing support of locust control activities. UNDP would be prepared to support national locust control units at the request of Governments, within the framework of financial resources allotted to cooperation with each individual country. In addition, US$1.9 million were allocated recently to strengthen the operational preparedness, in terms of personnel and equipment, and to support biologioal and operational research of three regional African locust control organizations. He assured that UNDP would continue to try and be responsive to the needs of Member States and their regional organizations in the field of locust control. He informed the Committeee that the subregional project, Desert Locust Survey and Control Project, RAB/75/010, covering the Yemen Arab Republic and the People's Democratic Republic of Yemen, was likely to be extended for another period of two years. The Committee noted with satisfaction the continued interest of the UNDP in the field of Desert Locust control and appreciated the assistance provided in this respect.

Conclusions and Recommendations

Conclusions

89. The Committee recognized that plagues of the Desert Locust have existed since ancient times and still continue to pose a serious threat to agriculture in some 50 countries of South-West Asia, Africa and the Near East. The Committee reviewed the present overall Desert Locust situation and considered that it possessed the full potentials of an early plague and would spread to other regions in the east and west if not contained in time. The spread was likely to be helped by local breeding and by good rains.

90. The Committee noted that unless an effective anti-locust campaign is undertaken in large parts of the strategic breeding area in the Horn of Africa, locust swarms from Ethiopia and the north eastern part of Somalia would move during September/October and breed in southern Somalia and adjoining parts of eastern Ethiopia. The escapes from the progeny of this breeding would move into Kenya at the end of December with a possibility of some reaching there as early as October.

91. Timely and successful control operations in Saudi Arabia, the Yemen Arab Republic, the People's Democratic Republic of Yemen and Sudan during early 1978, prevented large-scale escapes and their migration into Sudan and countries to the north-east, thus breaking an important link in the spread of the upsurge. Nevertheless, control operations on the scale of early 1978 would be required during the present summer (in PDR Yemen) and the coming winter/spring of 1978/79, through local breeding and possible invasion of swarms from the west.

92. In Sudan heavy rains have been received in the eastern part of the Khartoum Province extending up to Kassela. Any invading swarms from Ethiopia were most likely to breed there and also in Northern Province which has received good rains in the second half of July. Any escapes from this area would most likely move towards the Red Sea coastal plains but the possibility of westward movement of swarms reaching as far as Morocco in November cannot be ruled out.

93. There were no major developments in the locust situation in West Africa at present, but the situation could change rapidly as a result of extensive breeding during the summer rainfall period.

94. In South-West Asia, breeding was in progress in India and Pakistan and there were good prospects of controlling it in time. However, heavy rains fell in July in the summer breeding areas. This was likely to result in further breeding and possible swarm formation on a small scale. Migration of large numbers of locusts towards the west during October/November was expected. In view of continued breeding and the presence of a large number of locust swarms in the Horn of Africa and considerable populations in the south-west Arabian Peninsula with prospects of heavy breeding during winter/spring 1978-79, the Committee was of the opinion that locusts, including swarms could invade South West Asia in early summer 1979.

95. DLCO-EA and OCLALAV need to be strengthened further so that these two organizations could operate at the required level of efficiency to combat the present Desert Locust upsurge. Consideration should also be given to assist national organizations, whenever needed.

Recommendations

96. In Ethiopia, wherever possible, efforts should be made by the DLCO-EA and the national teams to control the infestations (both hoppers and swarms) so as to minimize the extent of escape of swarms into Somalia and Sudan.

97. In Somalia, most of the swarms are held up by strong south-westerly winds along the line of the northern foothills and escarpment. Occasionally, when the winds recede in the late afternoon, this allows the swarms to move south, particularly in Adadleh, Sheikh, Odmo tug, Raguda tug and Karin Gap areas. They will quickly return north the following morning. Every opportunity should be availed to spray swarms before their return north. For this purpose, it was recommended that adequate provision should be made for aerial application of insecticides at Burao, Erigavo and Gardo. Ground teams at the above places as well as at Scushuban, Garoc and Las-Anod be established to collect information and to assist in control operations. This should be continued through August. In September, survey and control bases should be moved southwards so as to intercept the swarms moving in a south-westerly direction with the change of the winds.

98. Aerial surveys from mid-July onwards should be carried out from Hargeisa to Upper Sheikh and Bawn returning via Borama, Nabadid. This is a zone of secondary front where south-westerly and northerly winds meet and where swarms are most likely to be located. Arrangements should be kept in readiness for control operations in the area.

99. Advance arrangements should be made for control of "Short Rains" breeding in southern Somalia during October/November. Escapes from such breeding and that of the adjoining area of Ogaden (eastern Ethiopia) are likely to invade Kenya in December or even earlier. Advance preparations should be made to control swarms in north-east Kenya.

100. Eastern parts of Khartoum, White Nile and Kassela Provinces of Sudan are the most likely areas where swarms coming from Ethiopia might breed. This area has to be kept under constant watch and adequate arrangements should be made to undertake control operations against swarms and subsequent breeding. Parts of the Northern Province where rain has been received would also need a close watch.

101. From late July onwards, the DLCO-EA should mainly concentrate its operations in Somalia and Ethiopia with a view to reducing the existing swarms to a minimum before they escape to the "Short Rains" breeding areas by mid-September. All efforts should be made in the "Short Rains" breeding area of southern Somalia, for which advance preparations should be effected.

102. Resources of DLCO-EA should be further strengthened so as to enable it to cope with the present situation. Consideration should also be given to strengthen national anti- locust services wherever needed.

103. OCLALAV should also be strengthened adequately in view of the impending threat of locusts from the east.

104. FAO should carefully study the existing control potential of various member countries having strategic breeding areas, likely to be affected in the near future and in the next two years, and prepare lists of equipment and supplies needed. FAO should take the necessary steps to assist such countries to obtain technical and material assistance to the extent possible (para. 77).

105. In view of the possible continuing inaccessibility of certain strategic breeding areas of Ethiopia and Somalia, it is realized that in spite of all the efforts made and planned in 1978 to cope with the situation, considerable locust populations, including swarms, would still be found in the region. Breeding can, thus, continue on a sizeable scale in 1979 extending into the spring of 1980. It is, therefore, recommended that this likely development should be kept in view when planning the 1979/80 operations.

106. Breeding on the same scale as that of the 1977/78 winter/spring period on the eastern coast of the Red Sea (Tihamas of Yemen and Saudi Arabia) and in the Gulf of Aden area is anticipated during 1978/79, for which adequate resources have to be kept in readiness for survey and control.

107. FAO should give consideration to the establishing of buffer stocks of insecticides at suitable places (para. 76).

108. Both national and regional locust organizations should arrange surveys during appropriate seasons of the areas indicated in paragraph 61 of the Report.

109. All countries are requested to send detailed survey reports, including nil, regularly, at fortnightly intervals, to FAO, Rome, to their respective regional headquarters and to COPR, London. Any important information should be communicated by telegram, telephone or telex.

110. Recognizing that the countries and regional locust organizations concerned were primarily responsible for anti-locust operations within their respective jurisdiction, the Committee, however, considered advisable that consultants from FAO and other institutes should be sent to the infested countries in order to assess the locust situation and to assist them in organizing anti-locust operations.

111. The Committee requested FAO for Arabic translation of the report.

112. The Director-General of the DLCO-EA conveyed to the Committee the thanks of the Chairman of the DLCO-EA to the Director-General of FAO and various donor Governments for the assistance provided to the Organization (DLCO-EA) to cope with the present serious locust situation.

113. It will be necessary to keep the locust developments under constant review in order to inform Governments concerned well in time about the period and likely extent of invasions, particularly when the displacement of swarms starts with the change of weather conditions from one place to another.

DATE AND PLACE OF NEXT SESSION

114. The Committee recommended that the Director-General of FAO should convene the next Session of the Committee, probably in May 1979 in Rome, on a date to be determined by him, unless the locust situation demanded it to be convened earlier.

APPENDIX I

DATA ON CONTROL OPERATIONS AGAINST THE DESERT LOCUST IN VARIOUS COUNTRIES

(November 1977 - July 1978)

Country	Period 1978	Insecticide		Approximate Total Area Treated	Method of Application
		Type	Quantity		
South-West Asia					
India	June-July	BHC Dust Dieldrin	120 tonnes 5,400 litres		By ground and air
Pakistan	June-July	BHC Dust Dieldrin	10,000 kgs 24,000 litres	5,000 sq.km	By ground and air
Near East					
Saudi Arabia	Jan-early June	Dieldrin 70% Malathion 96% BHC Dust Bait	20 tonnes 14 tonnes 65 tonnes 40 tonnes	3,500 sq.km	By ground and air
Sudan	November 1977-February 1978	Dieldrin 20% Malathion 96% BHC dust BHC Bait	5,000 litres 3,750 litres 60 tonnes 306,000 kgs		By ground and air
Yemen A.R.	Jan-May	BHC Dust Dimethoate Dieldrin Acrodil Thiodan	50 tonnes 2.2 tonnes 18 tonnes 2.5 tonnes 2 tonnes	40,000 sq.km	
Yemen P.D.R.	Jan-June	BHC Dust BHC 15% in oil Bait	4,600 kgs 4,270 litres 6,000 kgs	520 sq.km	By ground
Eastern Africa					
Ethiopia Somalia	March-June	BHC 16% BHC 70% Insodil 20% Dieldrin 20%	14,600 litres 1,200 litres 5,490 litres 968 litres	20 sq.miles 236 sq.miles 7 sq. miles	By air By air By air
N.W. Africa					
Libya	April-May	Poisoned Bait	57,625 kgs		
West Africa					
Niger	November 1977	Dieldrin		1,855 ha.	By ground

APPENDIX II

POSITION OF ORDERS AND DELIVERY - EMERGENCY ASSISTANCE FOR DESERT LOCUST CONTROL

TCP

COUNTRY: YEMEN ARAB REPUBLIC

Date: 20.7.78

PROJECT: TCP/8/YEM/01/E

LIAISON OFFICER IN COUNTRY: Mr. M. Talhouni, FAO Locust Officer, Hodeidah

Supplies	Supplier	P.O.No.	Date	Expected Delivery	Date Shipped or Air Freighted
20t. Dieldrin	Shell, U.K.	90064	28.4.78	20.5.78	Shipped 15/6 MV Port Nicholson
5t. Fenitrothion	Fitochin, Spain	90065	"	26.6.78	15.7 BMI Export
100t. BHC 25%	" "	90066	"	Immediate	12.6 "Portland"
Toyota Spare Parts	Toyota, Japan	99996	17.4.78	August	Awaiting date
Land Rover spare parts	Lambs, U.K.	90323	14.6.78	July	" "
Land Rover spare parts	Local Purchase	CR82124	7.6.78	Immediate	Local Purchase
Land Rover spare parts	Santana, Spain	90439	30.6.78	July	Awaiting date
Equipment					
12 Exhaust Nozzle sprayers	Evers & Wall, U.K.	99963	12.4.78	Immediate	19.6 "Lion of Ethiopia"
100 ULVA sprayers	Micron, U.K.	99933	7.4.78	Immediate	RB383 22.4.78
100 Orient dusters	Am.Spring & Pressing Works, Bombay	90124	10.5.78	June 1978	MS 767 2.6.78
4 Toyota pick-ups	Toyota, Japan	SO.23743	17.4.78	15.5.78	25.5.78 "Friendly Is."
2 " St. wagon	Toyota, Japan	SO.23744	"		25.5.78 " "
1 " pick-up	Toyota, Japan	99995	"	Sept. 1978	2.7.78 "Silver Castle"
2 Radios	PYE, U.K.	90123	8.5.78	Aug. 1978	Awaiting date
13 Exhaust nozzle sprayers	Evers & Wall, U.K.	90215	23.5.78	July 1978	" "

POSITION OF ORDERS AND DELIVERY -- TCP EMERGENCY ASSISTANCE

FOR DESERT LOCUST CONTROL

Date : 20.7.78

COUNTRY: Sudan

PROJECT: TCP/8/SUD/02/E

LIAISON OFFICER IN COUNTRY: Mr. A. A. Kharrar, Head, Locust Control Section, Khartoum

Supplies	Supplier	P.O. No.	Date	Expected Delivery	Date Shipped or Air Freight
10 t. Dieldrin	Shell, U.K.	90067	28.4.78	17.5.78 (Rotterdam)	30.5.78 "Master Daskalos"
10 t. Dieldrin	Saudi Arabia	CR82077	26.4.78	15.6.78	14.6.78 "Blue Moon" from Jeddah
20 t. Fenitrothion	Fitochin, Spain	90068	28.4.78	May-June	31.8.78 "Franca"
100 t. BHC 25%	" "	90069	"	stock	21.6.78 SS "Daniela"
Equipment					
20 Exhaust Nozzle Sprayers	Evers & Wall, U.K.	99962	12.4.78	stock ½ by air ½ by sea	9.6.78 9.6.78 AWB 280.4000.1886 22.6.78 "El-Gazira"
Land Rover spare parts	Lambs, U.K.	90060	26.4.78	June 1978 ½ by air ½ by sea	15.6.78 BAG 59 awaiting date

POSITION OF ORDERS AND DELIVERY - TCP EMERGENCY ASSISTANCE FOR DESERT LOCUST CONTROL

Date 20.7.78

COUNTRY: Somalia

PROJECT: TCP/8/SOM/02/E

LIAISON OFFICER IN COUNTRY: Mr. A. Abdi, Director, Plant Protection & Locust Control

Supplies	Supplier	P.O. No.	Date	Expected Delivery	Date Shipped or Air Freight
30 t. Dieldrin	Shell, U.K.	90070	28.4.78	20.5.78	24.6.78 ETA 5.8.78 "Philippa"
5 t Fenitrothion	Fitochin, Spain	90071	28.4.78	June	8.6.78 "Piave"
Land Rover spare parts	Lambs, U.K.	90167	16.5.78	July	awaiting date
Camping equipment	Black & Edgington, U.K.	90137	10.6.78	July	awaiting date
" "	Low & Bonar, Kenya	90360	26.6.78	July	awaiting date
Equipment					
20 Exhaust nozzle aprayers	Evers & Wall, U.K.	90061	26.4.78	July	awaiting date
4 Land Rover pick-ups	Br. Leyland	90160	16.5.78	no date	
1 Land Rover St. Wagon	Br. Leyland	90160	16.5.78	no date	

POSITION OF ORDERS AND DELIVERY - TCP EMERGENCY ASSISTANCE

FOR DESERT LOCUST CONTROL

Date : 20.7.78

COUNTRY: PEOPLE'S DEMOCRATIC REPUBLIC OF YEMEN

PROJECT: TCP/8/PDY/02/E

LIAISON OFFICER IN COUNTRY: Mr. Pritpal Singh, FAO Locust Officer, Aden

Supplies	Supplier	P.O. No.	Date	Expected Delivery	Date Shipped or Air Freight
10 t. Dieldrin	Shell, U.K.	90132	8.5.78	20.5.78 from Rotterdam	15.6.78 "Port Nicholson" ETA 27.7.78
4 t. Fenitrothion	Fitochin, Spain	90133	9.5.78	end May/June	24.7.78 "Szekesfeheryar"
5 t. BHC 25%	" "	90134	9.5.78	from stock (immediate)	24.7.78 "Szekesfeheryar"
Camping equipment	Black & Edgington. U.K.	90307	12.6.78	no date	
" "	Low & Bonar, Kenya	90361	20.6.78	no date	
Land Rover spares	Lambs, U.K.	90168	16.5.78	June/July	awaiting date
Equipment					
10 Exhaust Nozzle Sprayers	Evers & Wall, U.K.	90131	8.5.78	By air July 1978	awaiting date
3 Land Rover Pick.ups	Br. Leyland	90161	16.5.78	No date	

POSITION OF ORDERS AND DELIVERY - TCP EMERGENCY ASSISTANCE

FOR DESERT LOCUST CONTROL

Date: 20.7.78

COUNTRY: Djibouti

PROJECT: TCP/8/DJI/02/E

LIAISON OFFICER IN COUNTRY: Mr. Idriss Farah Abaneh, Minister of Agriculture, B.P. 453, Djibouti

Supplies	Supplier	P.O. No.	Date	Expected Delivery	Date Shipped or Air freight
2 ½ t. Dieldrin	Shell, U.K.	90391	23.6.78	July	Awaiting vessel
2 ½ t. Fenitrothion	Fitochin, Spain	90393	23.6.78	"	" "
40 t. BHC Dust	" "	90392	23.6.78	"	" "
5 Motorized knapsack sprayers	Holder, Germany	90390	23.6.78	"	Awaiting date
50 Hand dusters Orient	Am. Spring & Pressing works, India	90388	23.6.78	August	11.7.78 AWB 073.0016.5336
Equipment					
3 Exhaust nozzle sprayers	Evers & Wall, U.K.	90389	23.6.78	July	Awaiting date
2 Toyota pick-ups	Toyota	SO.B.23990	23.6.78	July/Aug.	" "
1 Unimog	Daimler Benz, Germany	90387	23.6.78	Aug/Sept.	" "

POSITION OF ORDERS AND DELIVERY - EMERGENCY ASSISTANCE
FOR DESERT LOCUST CONTROL

COUNTRY: SUDAN (DLCO-EA) Date: 1 August, 1978

PROJECT: WORKING CAPITAL FUND FOR LOCUST EMERGENCY OPERATIONS IN RED SEA AREA. PROJECT NO. 5555

LIAISON OFFICER IN COUNTRY: Desert Locust Control Organization (DLCO-EA)

Supplies	Supplier	P.O.No.	Date	Expected Delivery	Date Shipped or Air Freighted
10 tons Dieldrin	Shell, U.K.	1B 89019			3.8.78 MV. Francois Vieljeux ETA 19.8.78
Equipment					
3 Land Rover St. Wagon	Br. Leyland	SO.B.24020	30.6.78	July 1978	awaiting date
3 Land Rover Hard-tops	Br. Leyland	SO.B.24021	30.6.78	August/Sept 1978	awaiting date

POSITION OF ORDERS AND DELIVERY - EMERGENCY ASSISTANCE FOR DESERT LOCUST CONTROL

COUNTRY: SOMALIA (DLCO-EA) Date:1 August, 1978

PROJECT: WORKING CAPITAL FUND ADVANCE FOR LOCUST EMERGENCY OPERATIONS IN RED SEA AREA. PROJECT No. 5555

LIAISON OFFICER IN COUNTRY: Desert Locust Control Organization (DLCO-EA)

Supplies	Supplier	P.O.No.	Date	Expected Delivery	Date Shipped or Air Freighted
10 tons Dieldrin	Shell, U.K.	1B89018	30.6.78		11.8.78 MV Patricias ETA 1.9.78
Equipment					
2 Toyota St. Wagons	Toyota	SO.24022	30.6.78	From stock	awaiting date
1 Toyota Pick-up	"	SO.24023	30.6.78	" "	" "
3 Land Rover St.	Br. Leyland	SO.24028	30.6.78	July 1978	" "
1 Toyota Hardtop	Toyota	SO.24024	30.6.78	" "	

POSITION OF ORDERS AND DELIVERY – EMERGENCY ASSISTANCE FOR DESERT LOCUST CONTROL

COUNTRY: DJIBOUTI (DLOC-EA) Date: 1 August, 1978

PROJECT: WORKING CAPITAL FUND FOR LOCUST EMERGENCY OPERATIONS IN RED SEA AREA. PROJECT NO. 5555

LIAISON OFFICER IN COUNTRY: Desert Locust Control Organization (DLCO-EA)

Supplies	Supplier	P.O.No.	Date	Expected Delivery	Date Shipped or Air Freighted
20 tons Dieldrin	Shell, U.K.	1B89020	30.6.78		3.8.78 MV Francois Vieljeux ETA 16.8.78
Equipment					
2 Toyota St. Wagons	Toyota	SO.B.24025	30.6.78	From stock	awaiting date
2 Toyota Pick-ups	"	SO.B.24026	30.6.78	" "	" "
1 Toyota Hard-top	"	SO.B.24027	30.6.78	" "	" "

APPENDIX III

LIST OF WORKING PAPERS

AGP:LCC/78/1	-	Agenda
AGP:LCC/78/2	-	Review of the Present Locust Situation
AGP:LCC/78/3	-	Improvement in Surveillance, Reporting, Forecasting and Transmission of Locust Information
AGP:LCC/78/4	-	Anti-Locust Survey and Control Potential Available in the Member Countries of the FAO Desert Locust Control Committee
AGP:LCC/78/5	-	Measures Taken to Meet the Present Locust Emergency and Some Future Considerations

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Documents on Background Information

Report of the Emergency Meeting of Locust Experts Held on 23 June 1978, to Review the Present Situation and Make Recommendations for Action to be Taken

Resolution on Combatting the Outbreak of Desert Locusts in East African States (CM/C'tee B/Res 6(XXXI)