APPENDIX I

Report of the Second Session of the Executive Committee of the Commission for Controlling the Desert Locust in the Near East

INTRODUCTION

The Director-General of the Food and Agriculture Organization of the United Nations, at the kind invitation of the Government of Jordan, convened the Second Session of the Executive Committee of the Commission for Controlling the Desert Locust in the Near East, in Amman from 26 to 28 July 1972.

The Session was opened by Dr. K. Lubani, Under-Secretary, Ministry of Agriculture, Government of Jordan, who welcomed the participants on behalf of the Government of Jordan and in his personal capacity as Chairman of the Committee. He stressed the importance of field research on the Desert Locust and thanked FAO for providing facilities for the same. He stated that advanced training of suitable candidates from the region would go a long way in developing field work in the Near East. He emphasized the importance of proper coordination of this work with field research stations in the other regions.

Officers of the Session

Chairman: Dr. K. Lubani, Jordan
Vice-Chairman: Mr. M.F. Leheta, Arab Republic of Egypt

The work of drafting the report was entrusted to the FAO Secretariat, Mr. Gurdas Singh and Mr. A. Khasawneh of the FAO Secretariat acted as Technical Secretaries.

Acknowledgements

At the close of the Session the members of the Committee expressed their thanks to the Chairman for conducting the deliberations in a very tactful manner. The Committee wished to place on record their gratitude to the Government of the Hashemite Kingdom of Jordan for the hospitality extended and the facilities provided.

PARTICIPATION IN THE SESSION

Members of the Executive Committee

Arab Republic of Egypt

Mohamed Fahmi Leheta
Director
Locust and Grasshopper Research Department
Ministry of Agriculture
Dokki, Cairo

Jordan

Khalil Lubani
Under Secretary
Ministry of Agriculture
Amman

Jawad Dajani
Director of Plant Protection and Production
Ministry of Agriculture
Amman

Shawkat Kassem
Chief of Plant Quarantine Division
Ministry of Agriculture
Amman

Ahmad Jafar Said
Chief of Desert Locust Branch
Ministry of Agriculture
Amman

Lebanon

Anis Jalloul
Director
Plant Protection and Quarantine
Ministry of Agriculture
Beirut

Qatar

Sultan R. Al-Kuwari
Director of Agriculture
Ministry of Industry and Agriculture
Doha

Mohamed Fouad Thabet
Head of Plant Protection Section
Ministry of Industry and Agriculture
Doha

Observer

Saudi Arabia

Fuad Ramadan Kalkuttawy
Director
Desert Locust Research and Survey
Ministry of Agriculture
Jeddah

FAO Staff

Gurdas Singh
Senior Officer
Locust Control and Emergency Operations
Plant Production and Protection Division
FAO, Rome, Italy

Sardar Singh
FAO Regional Plant Protection Specialist
FAO Regional Office for the Near East
P.O. Box 2223
Cairo, Arab Republic of Egypt

A. Khasawneh
FAO Regional Locust Officer
International Locust Control Centre
P.O. Box 327
Jeddah, Saudi Arabia

AGENDA

1. Opening of the Session
2. Adoption of the Agenda
3. Election of the Drafting Committee
4. Coordination of the Desert Locust Research in the Region
5. Training
6. Election of the Chairman and Vice-Chairman of the Executive Committee for 1972/73
7. Any Other Business
8. Date and Place of the Next Session
9. Adoption of the Report.

SUMMARY OF DISCUSSIONS

Coordination of Research

1. The Executive Committee reviewed the work done in Egypt and Saudi Arabia during 1971/72 and noted that Sudan had not yet been able to initiate research work. The Committee also considered the programme ow of work for 1972/73 to be carried out at various field research stations.

2. It was recommended that in future research work main emphasis should be given to applied research so that results could be utilized to improve the effectiveness and efficiency of the present system of control and survey of the Desert Locust.

3. The Committee considered the need for providing further assistance by way of equipment to Dokki, Egypt, and Jeddah, Saudi Arabia, field research stations and requested FAO to review the needs of both of the stations and arrange for supply of additional equipment required for successful implementation of the various research projects.

4. It was noted that the field research station in Khartoum had not yet been established possibly due to the preoccupation of the existing staff with various field pest control problems which had to be given priority. The Committee learnt with interest that Mr. A.M.H. Karrar, who had commenced his studies in U.K. in 1969 under a FAO fellowship, would be completing his Ph.D. by the end of this year and return to Sudan. FAO, in consultation with Mr. Karrar, should prepare an appropriate research programme and supply the equipment which might be necessary to implement it. It was suggested that the field research station in Khartoum should be established away from the present premises of the Department of Plant Protection in order to avoid any contamination of locust culture by insecticide.

5. The Committee took note of the following research projects undertaken at the various field research stations:

Arab Republic of Egypt

Projects concluded: (a) Toxicology-seasonal variations in susceptibilities of the Desert Locust to insecticides;

(b) Phasiometry in the Desert Locust in relation to population density;

(c) Predatory behaviour of the preying mantis, Sphodramantis bioculatis, against the Desert Locust;

Results concerning (b) had been published in the FAO Technical Series No. 10 and the results of the other two projects (a) and (c) were under preparation for publication.

Projects to continue: (a) Development of resistance to insecticides in the Desert Locust;

(b) Persistence of some insecticides used in Desert Locust control. Foliage of Sesabania grown in pots was contaminated with calculated volumes of insecticide droplets representing field spraying deposits. Demarcated contaminated foliage was offered for ingestion (sandwich technique) to weighed locust after varying periods of contamination. Assessment of persistence of any insecticide in the form of a gradient of toxicity showing regression by time as estimated by median lethal doses and residues was also biologically tested.

(c) Cumulative effect of sub-lethal doses of some insecticides used against the Desert Locust. The same technique as above was followed but instead of dosing in a single dose, fractionized doses were given at varying periods. Attempts towards estimation of rate of detoxication or cumulation of toxiferous ingredients was made. Trials were carried out by chlorinated hydrocarbons and organo-phosphorus compounds.

(d) Relation between body fat content and insecticide tolerance in the Desert Locust: phasiometrically differentiated races of the Desert Locust were reared under identical conditions, especially of density and nutrition, until group homogenity was reached. Correlation between somatometry and body fat content as well as insecticide tolerance in relation to unit body fat, saturated or unsaturated, was estimated.

(e) Studies on polymorphism in the Desert Locust: ecological factors such as those affecting phase transformation were under study. Necessary preliminary arrangements for taking up the tests were made.

(f) The effect of some biological compounds as activators or inhibitors on the biocycle and fecundity of the Desert Locust.

(g) Studies on the parthenogenesis in the Desert Locust.

(h) Seasonal natural mortality in the Desert Locust.

(i) Biological and ecological studies on the Egyptian Tree Locust, Anacridium aegyptium L.

(j) Colour patterns in Anacridium hoppers: The effects of density, environmental conditions (meteorological and nutritional) and mimicry on coloration were under investigation.

(k) Taxonomy.

Saudi Arabia

Effect of different foods on hopper development and maturation: Two cultivated plants, Pennisetum typhoideum (dukhn) and Sorghum sp. (durra) and five uncultivated plants, Panicum turgidum, Dipterygium glaucum, Tribulus alatus, Chrozophora oblongifolia and Eygophyllum simplex were chosen and sets of 100 one-day-old hoppers were reared on each food-plant individually to the adult stage and ultimately to death. The duration of development varied with the food-plant, being shortest on Pennisetum and Chrozophora and longest on Panicum and Eygophyllum. In the case of Panicum and Eygophyllum, there was very heavy mortality and the survivors failed to mature. The insects fed on Sorghum and Tribulus also failed to mature, though the survival to the adult stage was over 50 per cent. The insects fed on the other food plants matured, but at different speed. A mixed diet in all cases accelerated maturation and the fastest time was on a mixed diet of Dipterygium and Pennisetum. In nature, mixed plant communities are more favourable to the survival and development of the Desert Locust than monospecific ones.

Insects become conditioned to their original exclusive food plant and would accept the alternate food plant only after a lapse of time, the lapse of time being directly proportionate to the palatability of the original food plant. Thus the insects fed on Pennisetum accepted Dipterygium to anything like the same extent only after five days, while the insects reared on Panicum readily accepted Pennisetum already after the first day. In the case of Eygophyllum (a salt plant) there was no evidence of conditioning and the insects accepted the alternate food plant readily from the moment of its introduction. Solitarious hoppers fed exclusively on their favourite food plants such as Tribulus or Heliotropium. There were also indications that small amount of vegetation favoured gregarization, while large amounts were conducive to dissociation.

Hopper mortality: Studies on the mortality of different instars of locust hoppers on various foods through the year were taken up.

Insecticidal control: The residual effect of dieldrin applied on natural vegetation with exhaust nozzle sprayer showed that dieldrin produced a 100% mortality initially and a 50% mortality on the 30th day after spraying.

In the studies on accumulative effect of dieldrin, it was found that initially 100% mortality was obtained within 3 days, but the 30th-day-test locusts only showed a 60% mortality after having been fed for 21 days on the sprayed vegetation. Experiments were in hand for determining the persistence of dieldrin with the age of the plant.

Extracts of Saudi Arabian distateful plants to locust did not have any repellent properties in the concentrations used.

Neem Azederachta indica extracts applied topically under field conditions in Saudi Arabia retains some degree of persistence up to ten days after application. Neem also has a marked systemic effect when applied to some plants, but not to others.

The future research programme for Jeddah and Dokki stations is given in Annex I.

Fellowship

7. The Committee noted that Mr. Saeed Abdullah Saeed Ba'ankoud of the People's Democratic Republic of Yemen and Mr. F.A.A. Ghaffar Karrar from Sudan, selected last year for higher studies, were accepted at the University of Khartoum and at the Imperial College, London, respectively, starting autumn 1972.

8. Mr. Samir I. Hamman of Arab Republic of Egypt, who was placed on the waiting list, was granted a short-term fellowship under other funds to undertake work on locust toxicology in the U.K. On recommendation of his supervisor this period was extended to September 1972. Since his name was already approved by the Commission and he was in U.K., FAO secured his admission in the University of London for advanced studies commencing in October 1972. The Committee accepted the above arrangements and finally approved Mr. Hamman's name for the award.

9. The Committee, being informed that the Government of the Syrian Arab Republic had withdrawn the candidature for advanced training of Mr. A.R. Barbandi, considered the rest of the names of candidates forwarded by the Member Countries for advanced training and approved the name of Mr. Shawkat Qasem Bashmaf of Jordan for a fellowship award during 1972/73.

Chairman and Vice-Chairman of the Executive Committee

10. The Committee unanimously decided to appoint Lebanon and Qatar as Chairman and Vice-Chairman respectively for 1972/73.

DATE AND PLACE OF NEXT SESSION

11. The Third Session of the Executive Committee might be held just before the Fourth Session of the Commission and at the same place.

ANNEX I

Programme of Research for 1972/73

Jeddah, Saudi Arabia

a) Locust mortality in hopper and adult stage of the Desert Locust under field laboratory conditions and also in the field depending upon availability of suitable populations for such a study.

b) Behaviour of the Desert Locust population with particular reference to gregarization and dissociation.

c) Night flying of the solitary Desert Locust populations.

d) Studies on the distribution of natural vegetation in relation to the Desert Locust habitats and to establish a reference collection of plants.

e) Insecticidal trials.

f) Studies on residue of various insecticides including those commonly used against locusts with particular reference to residue on the sprayed vegetation.

g) Systemic action of Neem extract.

h) Trials of application machinery, i.e. various types of sprayers.

Dokki, Arab Republic of Egypt

a) Cumulative effect of temperature for embryonic development in some acridids.

b) Feeding deterrents as means of control of the Desert Locust.

c) Factors affecting arrested development of the embryonic stage in the Desert Locust.

d) Natural mortality of progeny of solitary and gregarious populations under laboratory conditions.

APPENDIX II

COMMISSION FOR CONTROLLING THE DESERT LOCUST IN THE NEAR EAST

TRUST FUND No. 9409

Statement of Account as at 31 December 1970
(expressed in US dollar equivalents)

Receipts		
Balance as at 1 January 1970		44,390
Add:		
Sums received in 1970		83,943
Accrued interest 1970		2,818
		131,151
Deduct:		
Cash Expenditure 1970		
Personal services	13,644	
Supplies	-	
Equipment	-	
Travel	-	
Contractual services	-	
Grants and subsidies	-	
	13,644	
Project Servicing Costs % (5% on Code II-III, 14% on Code I-IV-V-VI)	1,910	15,554
Balance as at 31 December 1970		115,597

APPENDIX III

COMMISSION FOR CONTROLLING THE DESERT LOCUST IN THE NEAR EAST

TRUST FUND No. 9409

Provisional Statement of Account as at 31 December 1971
(expressed in US dollar equivalents)

Receipts		
Balance brought forward from 1970		115,597
Contributions received in 1971*		91,181
Transfer from TF-1, Desert Locust Control in the Arabian Peninsula		10,363
Interest accrued 1971		5,742
		222,883
Cash Expenditure 1971		
Personal services	16,643	
Supplies	1,004	
Equipment	-	
Travel	3,337	
Contractual services	4,045	
Grants and subsidies (fellowships)	-	
	25,029	
Project Servicing Costs (5% on Supplies and Equipment 14% on the rest of items)	3,414	28,443
Provisional Balance as at 31 December 1971		194,440

* Contributions	For the period	$
League of Arab States	1971/72	2,299.90
Bahrain	"	4,784.00
Egypt	1970/71	26,032.00
Lebanon	final 1969/70 - part 1970/71	6,117.00
Iraq	1970/71	16,464.00
Sudan	1969/70 - 1970/71	29,868.00
Syria	1970/71	5,616.00
	Total	91,180.90

APPENDIX IV

COMMISSION FOR CONTROLLING THE DESERT LOCUST IN THE NEAR EAST

TRUST FUND No. 9409

Budget for the Five-Year Period 1973-1977 expressed according to FAO Expenditure Codes

Code		1973	1974	1975	1976	1977	Total
00	Salaries Short-term experts, local staff, interpreters and assistance	25,000	25,000	25,000	25,000	25,000	125,000
20	Travel Delegates, teams, FAO staff to Sessions, regional co-ordination, consultants	10,000	10,000	10,000	10,000	10,000	50,000
30	Contractual services Printing, processing reports	5,000	5,000	5,000	5,000	5,000	25,000
40	General operating expenses Miscellaneous, rent, communications, hospitality	10,000	10,000	10,000	10,000	10,000	50,000
55	Supplies and materials For field surveys, POL, vehicle maintenance	30,000	30,000	30,000	30,000	30,000	150,000
67	Equipment For field projects	20,000	20,000	20,000	20,000	20,000	100,000
80	Fellowships and grants Individual and group training	25,000	25,000	25,000	25,000	25,000	125,000
		125,000	125,000	125,000	125,000	125,000	625,000
92	Project Servicing Cost *	13,000	13,000	13,000	13,000	13,000	65,000
		138,000	138,000	138,000	138,000	138,000	690,000
	Unallocated	1,600	1,600	1,600	1,600	1,600	8,000
		139,600	139,600	139,600	139,600	139,600	698,000

* 5% on Codes 55 and 67, 14% on other components

The above budget assumes that Saudi Arabia will have joined the Commission by 1 January 1973 and will have pledged its contribution to the Trust Fund 9409. To the extent that this country has not done so, or that pledged contributions from other countries are not paid, it will be necessary to scale down expenditure allocations proportionately.

Subject to the total commitments at any given time not exceeding the total contribution pledged and received at that time, the Director General shall have discretionary powers to vary the allocations between one expenditure heading and another as may be necessary to meet the changing locust situation. All such variations shall be reported and justified when submitting annual accounts to the Commission.

APPENDIX V

COMMISSION FOR CONTROLLING THE DESERT LOCUST IN THE NEAR EAST

TRUST FUND No. 9409

Statement of Contributions from Participating Governments
as of 31 May 1972

Country	Agreed Contribution	Contribution paid for the period: 1969/70	1970/71	1971/72
Arab Republic of Egypt	26,032	26,032	26,032	-
Bahrain	4,784	4,784	4,784	4,784
Iraq	16,464	16,464	16,464	16,464
Jordan	11,486	11,486	11,486	11,486
Kuwait	12,796	12,796	12,796	12,796
Lebanon	8,970	8,970	8,970	1,761
Qatar	5,506	5,506	5,506	5,506
Saudi Arabia	16,154	-	-	-
Sudan	14,934	14,934	14,934	14,934
Syrian Arab Republic	13,350	5,616*	5,616*	-
Yemen Arab Republic	4,224	-	-	-
Yemen, PDR of	4,360	360**	360**	360**
League of Arab States	-	4,600	-	2,300
	139,060	111,548	106,948	70,391

* Syrian Arab Republic: reduced contribution up to 1970/71

**People's Democratic Republic of Yemen: reduced contribution as agreed at 1st Session of the Commission

ANTI-LOCUST SURVEY AND CONTROL POTENTIALS AVAILABLE IN THE COUNTRIES OF THE NEAR EAST

	PERSONNEL		EQUIPMENT				VEHICLES			INSECTICIDES			AIRCRAFT	ANNUAL BUDGET	
	Technical staff	General staff	Power dusters	Power dusters sprayers	Hand dust & sprayers	Exhaust sprayers	Light	Medium	Heavy	Oil C. x 00 liters	Dust M.T.	Bait M.T.	No.	Curr	x 000
Bahrain*	3	19	8	9	35	2	4	-	2	-	1	-	-	BD	(9
Iraq*	105	-	-	150	-	10	40	50	5	150	65	100	16(1)	ID	50**
Jordan*	82	35	5	351	35	3	15	-	6	54	60	200	2(2)	JD	47
Kuwait*	33	10	25	29	20	13	13	-	14	129	80	-	-	KD	not lmt
Lebanon*	15	37	5	16	50	-	..	-	..	-	20	-	1	..	..
Qatar	1	3	-	-	-	-	-	-	3	18	8	25	-	D	1
Saudi Arabia	16	97	56	234	125	45	343	-	146	2700	800	2000	-	SR	3000
P.D.R. of Yemen	18	16	3	-	104	16	6	-	2	182	70	200	-	US$	9.7
Sudan *(a)	174	763	-	250***	-	25	15	10	10	720	-	1000	8(4)		
(b)	-	-	-	-	-	17	17	-	-	370	5		-		
Syrian A.R.*	120	40	150	70	-	6	90	-	20	600	400	300	6(3)	...	...
U.A.R.	70	259	13	8	97	13	32	-	65	514	57	42	-	£ EG	150
Yemen	32	-	2	4	-	12	9	-	6	50	48	40	-	YR	54
Total	669	1279	267	1121	466	162	534	60	279	5487	1614	3907	32		

* Resources for plant protection and locust control
** For locust control only excluding personnel and allowances.
*** For both dusting and spraying
(a) National unit
(b) DLCO-EA unit

(1) 4 Pipers, 4 Pawnees, 2 Helicopters, 6 Czechosl.
(2) 1 Piper Cub, 1 Helicopter
(3) 4 Pipers Super Cub, 2 Pawnees
(4) 2 Cessna 180, 1 Cessna 206A, 2 Pawnees, 3 Piper Super Cub

APPENDIX VII

LIST OF WORKING PAPERS

AGP:DL/NE/72/1	-	Programme of Work and Budget for 1973/77
AGP:DL/NE/72/2	-	Desert Locust Situation during 1971/72
AGP:DL/NE/72/3	-	Desert Locust Survey and Control Activities
AGP:DL/NE/72/4	-	Assistance to the People's Democratic Republic of Yemen
AGP:DL/NE/72/5	-	Report of the Executive Committee
AGP:DL/NE/EC/72/1	-	Training and Fellowships

Documents submitted by Saudi Arabia

1. Desert Locust Situation in the Kingdom of Saudi Arabia for 1971/72
2. A Review of the Desert Locust Survey and Control Activities during 1971/72 in the Kingdom of Saudi Arabia.

MR/D1450/9.72/E/1/390