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FAO-Emergency Prevention System (EMPRES)  
Desert Locust Management in the Central Region

## Minutes of Meeting

# 8<sup>th</sup> EMPRES LIAISON OFFICERS MEETING

Muscat, Sultanate of Oman

22<sup>nd</sup> – 26<sup>th</sup> October 2000

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## INTRODUCTION

1. The 8<sup>th</sup> meeting of the EMPRES/CR Liaison Officers was hosted by the Directorate General of Agriculture & Animal Affairs of the Ministry of Agriculture and Fisheries of the Sultanate of Oman in Muscat from 22<sup>nd</sup>-26<sup>th</sup> October 2000. The participants of the Meeting are listed below:

### EMPRES Liaison Officers:

Mr. Houssein Elmi Amir (Djibouti)  
Mr. Mahmoud Mohamed Sayed (Egypt)  
Mr. Bereke Ogbamichael (Eritrea)  
Mr. Merid Kumsa (Ethiopia)  
Mr. Mamoon Al-Alawi (Oman)  
Mr. Rabie Khalil (Sudan)  
Mr. Abdu Farea Al-Romaih (Yemen)

### FAO HQ staff:

Mr. Abdurrahmane Hafraoui (Head of the Locust & other Migratory Pests Group, AGPP)  
Mr. Clive Elliott (Senior Officer, AGPP)

### FAO-EMPRES/CR staff:

Mr. Fuad Bahakim (NPO-Survey)  
Mr. Munir Butrous (NPO-Control)  
Mr. Charles Mushi (UN-Volunteer)  
Mr. Tsedeke Abate (Research and Development Expert)  
Mr. Christian Pantenius (Action EMPRES Coordinator)

### Regional Organizations:

Mr. Peter Odiyo (Acting DLCO-EA Director)  
Mr. Ali Mohamed Ali (Chairman of the CRC)  
Mr. Thami Benhalima (Sectary of the North-West African Commission)  
Mr. Mohamed Lemine (NPO, EMPRES/West)

Mr. Jaber Al Sheri, EMPRES Liaison Officer from Saudi Arabia, unfortunately could not attend the meeting due to other urgent commitments in his country.

2. The Meeting was officially opened by the Under Secretary of the Ministry of Agriculture and Fisheries, H.E. Eng. Khalfan bin Saleh bin Mohamed Al-Naabi. On behalf of the host Government, he welcomed all the participants to the 8<sup>th</sup> Session of the EMPRES Liaison Officers Meeting. He remarked that the goal of EMPRES is to build a good network for information exchange and to strengthen national capacity for Desert Locust management using new technologies. This will ultimately lead to more efficient and successful control programmes. The Under Secretary noted that the Sultanate of Oman is strategically placed between the Western and Eastern Regions of EMPRES and can therefore play an important role in providing Desert Locust information and alerting other countries in these Regions of Desert Locust movements. The Sultanate of Oman, in the light of its position, is happy to extend its help and cooperation to achieve the EMPRES goal, and appreciates the efforts of EMPRES so far. The Under Secretary also extended his thanks and gratitude to FAO and its programmes.

3. On behalf of the Director - General of FAO, the Head of the Locusts and Other Migratory Pest Group at FAO Headquarters, Mr. Abderrhamane Hafraoui, thanked the Government of the Sultanate of Oman and the Ministry of Agriculture and Fisheries for hosting the 8<sup>th</sup> Meeting of the EMPRES Liaison Officers. He noted that the EMPRES Central Region Programme would be coming to the end of its Phase I on 31 December of this year and that a three-year Phase II would start on 1 January 2001. Phase I has recorded many achievements but also a number of important lessons had been learned. Mr. Hafraoui said that it should be remembered that EMPRES was a joint effort between the locust-affected countries, FAO and the donors. The role of the Locust Control Units remained critical in adapting new approaches and techniques, and in improving locust management. He concluded by saying that "It is my sincere hope that this meeting will further contribute to the success of the EMPRES Programme."
4. The final address to the opening session was given by Mr. Thami Benhalima, Secretary of the North-West Africa Locust Commission. He stressed the interdependence between the Western and Central Regions of EMPRES, the need for the new programme for the Western Region to benefit from the experience in the Central Region, and for the two regions to work closely together.

#### **OBJECTIVES, PROCEDURES AND AGENDA FOR THE MEETING**

5. Mr. Christian Pantenius, Acting EMPRES/CR Coordinator, welcomed the participants (Annex 2), and presented the objectives of the meeting and the procedures to be followed. The agenda prepared by the Acting Coordinator was adopted with a few minor changes (Annex 1). No need was felt for having a Chairman since the meeting was going to be conducted in a participatory manner, using the card method. A secretariat consisting of Mr. Clive Elliott, Mr. Peter Odiyo and Mr. Tsedeke Abate was nominated to prepare the report on the first two days of discussions. The work plan developed during the meeting would be presented to the Consultative Committee Meeting in Rome in December, and would be circulated to all the ELOM participants.
6. It was suggested that, for the future meetings, the agenda developed by the Acting Coordinator (along with all relevant documents for the meeting) should be sent to participants two weeks before the meeting. The participants (ELOs in particular) would then make suggestions to include further items for discussion or make any other changes if need be. Mr. Hafraoui attached particular emphasis to the importance of openness by ELOs while discussing important issues that may hinder their achievements towards implementing EMPRES objectives.

#### **PRESENTATION OF COUNTRY PROGRESS REPORTS**

7. Djibouti (Mr. Houssein Elmi Amir)

There was serious drought last year and conditions were not suitable for locust breeding. Recently, however, there have been rains in the coastal areas and in areas bordering with Somalia and Ethiopia. Breeding is expected in those areas and locust staff are instructed to conduct surveys there.

8. It was reported that training in locust survey/control was provided in the local language, through funding by EMPRES. Spray equipment (3 ULVA Mast sprayers) and survey equipment (4 GPS) had been received from EMPRES.

9. The possibility of joint surveys (Djibouti borders with Somalia and Ethiopia) was discussed. It was also stated that such surveys should be conducted from October - February and be jointly facilitated by DLCO-EA and EMPRES. The aircraft based in Addis Ababa and Asmara could conduct surveys in the respective countries. Emphasis was also made on national programmes taking an active role in strengthening their own surveys.
10. The need for assessing the impact of training given on improving surveys by EMPRES to national staff was emphasized. It was agreed that active involvement of the NPO-Survey in developing the criteria for assessment and follow-up is crucial.

11. Egypt (Mr. Mahmoud El Sayed)

It was reported that 7000 ha of locust infestations had been treated in new irrigation schemes near Aswan. Locust breeding in this area was a new phenomenon. A visit from the FAO HQ Locust Information Officer Mr. Cressman was planned for end of October to make a preliminary investigation. Depending on the result, future studies by EMPRES staff and the Egyptian authorities should be considered, including the possibility of a longer-term research project.

12. Eritrea (Mr. Bereke Ogbamichael)

Reports on rainfall, the Desert Locust situation and the progress of Country Focus programme were presented. In general, last year was relatively dry and therefore no significant locust activity was observed. However, there is a likelihood of good rains in the coming three months and regular surveys will continue. A programme implementation budget was developed, field equipment was procured, and training requirements and trainees have been identified. Full implementation of the programme was delayed because of shortage of staff. Mr. Bereke suggested that there is a good prospect for improvement in the staff situation in the near future.

13. Mr. Bereke was asked how an emergency locust situation, if it happened, could be handled considering the current staff shortage. He replied that it is foreseen to mass-mobilize PPD staff and the public. The possibility of a joint-border survey between Eritrea and Sudan was also discussed. It was agreed that the two countries would jointly identify secure areas for the survey. EMPRES would help with coordination and provide a contribution to the operational cost. It was agreed that the Acting EMPRES Coordinator would follow up the matter with the two countries.

14. Ethiopia (Mr. Merid Kumsa)

Surveys were conducted this year in the traditional breeding areas in March (Melka Jilo, Rare, Erer, Mieso), May (Afar, Dire Dawa, Jijiga, and 24 sub-districts in Oromiya Region), June (Dire Dawa, Somali Region), August-September (Fedis, Satisa, Adewi, Chinaksen, Dire Dawa, Jire). Even though the vegetation was green and favorable for locust breeding, no locusts were found. The USAID Desert Locust Manual was translated into Amharic and distributed. National survey and control training was given (16-25 October 2000) to 16 national locust staff.

15. On the development of improved national communication systems, Mr. Merid explained that following the loss of one radio, an investigation was under way and a new license was expected to be issued by the end of 2000.

16. Oman (Mr. Mamoon Al-Alawi)

Mr. Al-Alawi reported medium to high rainfall during mid-September to early October. Surveys were conducted following the rains but no locusts were found despite the habitats being favorable. The vegetation was now drying and the next rain was expected in February. Locust survey and control equipment had been purchased including 30 knapsack sprayers and 50 GPS.

17. Training of locust staff had been carried out. Preparations had been completed to publish leaflets on DL survey and control methods. In discussion, it was agreed that care should be taken to ensure that the leaflets were compatible with FAO publications including the FAO Locust Guidelines, which were in an advanced stage of being updated. The Mr. Al-Alawi was requested to send copies of the drafts to FAO HQ for checking.

18. Mr. Al-Alawi said that Oman was still interested in installing a remote-sensing receiver for locust habitat monitoring and other purposes. It was pointed out that the technology had advanced considerably since this possibility had first been discussed several years ago. The best satellite imageries are now available from SPOT rather than NOAA. Investigation should be made as to whether it might be possible to transfer images from DLIS/FAO direct to Muscat using appropriate software, rather than install a receiver in Oman. It was also noted that while the imagery had much improved, further refinement is being needed to eliminate false-positives.

19. Desert Locust Control Organization for Eastern Africa (DLCO-EA: Mr. Odiyo)

Mr. Odiyo presented a paper on how DL survey might be improved in Somalia. He concentrated on the most important locust habitat in the northern part of the country. The DLCO-EA staff member in Hargeisa, Mr. Jama, takes care of DLCO-EA interests in Northern Somalia. Mr. Jama had been closely working together with the EMPRES-UNV, Mr. Mushi. The meeting was informed that the retaining of the UNV in Hargeisa was not sustainable in the long term and could only be funded for a few more months. It was agreed that DLCO-EA and EMPRES should develop a clear plan for gradually taking over locust survey operations in the Northern Somalia by DLCO-EA with operational funding from EMPRES, and for strengthening the national survey capacity. It was noted that in the immediate future, extensive control of any locust outbreak in Somalia would be difficult and any swarms, which developed would have to be controlled as soon as they crossed into neighboring countries.

20. Sudan (Mr. Rabie Khalil)

The ELO reported that the Locust Section of the PPD had been very active recently, under the stimulus of the EMPRES Country Focus Programme. For the first time after 10 years, a joint-border-survey had been carried out on the Egyptian/Sudanese border and had been a great success. Several other surveys had been made in the late winter season and the recent summer breeding season, but locust populations were very low. Many training events had been organized in-country and Sudanese staff had attended several EMPRES training courses outside the country. It was reported that the national budget for locust operations was US\$ equivalent of US\$ 835,000 in 2000 and US\$ 978,000 for 2001 but sometimes there were difficulties in accessing the funds. These amounts covered operational cost for all species of locust excluding purchase of pesticides and hire of aircraft. In conclusion, Mr. Khalil said that constraints to improved locust control included shortages of vehicles and hand-held sprayers and the need to rehabilitate seasonal field camps.

21. Yemen (Mr. Abdu Fara Al-Romaih)

Mr. Al-Romaih said that he was very new to EMPRES and had had little time to prepare himself for participation, having been assigned to attend the meeting only two days earlier. Nevertheless he appreciated the opportunity to learn about EMPRES activities. He mentioned that the Tihama locust habitat had received very good rainfall in October but a survey had revealed extremely few Desert Locusts and an outbreak only of grasshoppers in the area. It was intended to complete surveys about once a month as long as conditions remained favorable.

## **PRESENTATION OF PHASE II WORKSHOP FINDINGS AND IMPLEMENTATION PLAN**

22. The Acting Coordinator described the conclusions reached at the participatory Workshop held in March 2000 in El-Tur, Egypt, in which locust-affected countries, donors and FAO staff had taken part. The Workshop had resulted in an Implementation Document for Phase II, which would be the basis for the ELOs to develop the workplan for 2001. Mr. Pantenius outlined the purpose and expected results, milestones, responsibilities, timeframe, remarks and allocations that formed the structure for Phase II. It was intended that the structure would allow the participants in EMPRES more easily to measure the progress being achieved.

23. In the discussion which followed, several participants questioned the numbers given in the structure. It was agreed that numbers were a necessary part of the structure but might need to be changed according to how the programme evolved. In relation to non-members of CRC deciding to join, it was clarified that FAO's view was that the CRC offered the best option for sustainability of EMPRES activities. There was no guarantee that donors would support an EMPRES phase III. Major efforts had to be made in Phase II gradually to develop sustainability. Given the existing membership of CRC and of DLCO, the financial situation of the two bodies and the fact that both CRC and EMPRES focused on Desert Locust coordination and national strengthening, while DLCO covered several migratory pests and was largely operational, meant that CRC was the logical choice. The non-members stood to benefit from the coordination and strengthening available from CRC. However it was recognized that EMPRES had only a limited role in encouraging membership and the countries concerned had to make their own decision.

## **THE EMPRES TRAINING CONCEPT AND TRAINING ACHIEVEMENTS IN PHASE I**

24. The Acting Coordinator said that early in EMPRES Phase I an attempt had been made to identify the major constraints to improved Desert Locust management. Among the causes considered were conflicts and insecurity, economic difficulties, undetected DL populations leading to upsurges, sometimes staff were not performing their tasks to the required standard, lack of training, and several others. To address the question of training, it was decided to hold a workshop to review the training concept and to try to decide how to approach training in a more systematic way.

25. The report on the EMPRES Central Region Training Concept Planning workshop which took place in Addis Ababa, Ethiopia, in January 1999 was circulated to ELOs.

26. The Workshop had drawn some significant conclusions, namely that training in the Central Region was too dependent on outside expertise, that national capacity should be built up and that better training would lead to more effective survey and control. The Workshop had identified the surprisingly large number of 15 categories of staff involved in locust management, all of who should benefit from training.

27. The Acting Coordinator presented data on the training events carried out by EMPRES alone or in cooperation with other institutions since 1996 up to July 2000. There had been 33 separate events and 390 staff trained of which 360 came from Central Region countries. A list of the names of all staff trained had been assembled by country, and ELOs were asked to check these and use them in making future decisions on choice of trainees. The data would be included in the Terminal Report for Phase I.
28. The analysis made by EMPRES was warmly welcomed by participants and highlighted the importance of more systematic approaches to training. Several participants expressed their view that training reinforced the work of EMPRES and ultimately contributed to improved food security. It was also noted that although a great deal of training had been accomplished, there were still significant gaps that needed to be covered. Discussions covered the need not only of training, but also of systems for follow-up, i.e. to check that trainees were using the information and the practice that they had been taught.

### **PRELIMINARY ANALYSIS OF RESEARCH/MANAGEMENT STRATEGIES IN THE CENTRAL REGION**

29. The presentation was given by the Research & Development Strategies Expert, Mr. Tsedeke Abate. Efforts had been concentrated on assembling base-line data and on developing a listing of key Desert Locust publications concerned with locust management. Data on spraying effort and its distribution among member countries was presented, indicating, for example, that in the last ten years, 51% and 31% of all spraying was carried out in Saudi Arabia and Sudan, respectively. On the literature review, the draft publication was nearly completed. It will be finished by March 2001. The possibility of placing it on the Locust Group website will be investigated.
30. Rainfall analysis on the Red Sea coast of Sudan had shown that existing rainfall gauges gave a good approximation of the overall situation. On DL habitat, initial investigation suggested that current estimations of 2 million square km for breeding in the Central Region could be considerably reduced and refined.
31. Two research projects had been launched, one by the University of Aden on promoting the use of Metarhizium, the other by University of Khartoum on DL population dynamics mainly on the Red Sea coast. EMPRES staff had also collaborated in field research with Wageningen University on the distribution of solitary DL populations. First results suggest that Heliotropium is an important plant for Desert Locust development. Wageningen / EMPRES have also collected data on many other factors influencing locust distribution. The data is being analyzed.

### **COUNTRY ID CARDS**

32. The Acting Coordinator presented information, which had been collected on the resources in terms of manpower and equipment available for Desert Locust management in member country. The Country ID cards were needed to help identify gaps and weaknesses in country capacity. Participants agreed that the problem was that the data frequently changed and that resources available were likely to be variable according to the severity of the locust infestation. It was nevertheless agreed that the ELOs should assist with improving and updating the lists and that they should be reminded to update the lists one month before ELO meetings.

### **IMPROVING SURVEY CAPACITY IN THE CENTRAL RWEGION - LESSONS LEARNED DURING PHASE I**

33. The National Professional Officer (NPO) for Survey, Mr. Fuad Bahakim, presented a structure, against which the survey capacity had been investigated. These included establishing the current status, the resources and facilities available, the sources of information, national training programmes, the initiatives to be taken and the role of the CRC and EMPRES. The evaluation of strengths involved assessments of government commitment especially during recession periods, the availability of the necessary survey equipment, the availability of qualified staff, and of communications systems. Weaknesses included the lack of survey plans, the lack of a budget for routine work, the failure to link planning to previous survey results, habitat, weather and locust data, and that accurate delimitation of breeding areas was generally not done.
34. Comments from the floor suggested that the presentation had been a good theoretical outline of the various elements involved in improving surveys, but lacked specific data on the situation in each member country and the identification of what needed to be done. It was agreed that the next step should be to get to grips with the specific situations country by country.

### **IMPROVING CONTROL CAPACITY IN THE CENTRAL REGION - LESSONS LEARNED IN PHASE I**

35. The NPO for Control, Mr. Munir Butrous, presented a paper on the efforts that had been made to improve control practices, mainly through training at the regional and national level. The number of Master Trainers trained was 36 and the number of trainees trained nationally was 106. It was concluded that the activities of the Master Trainers in holding national and local courses in control was essential to maintaining improvements and that EMPRES staff should provide the necessary encouragement. A spray monitoring form had been developed. The first reaction had been that it was too complicated but it was found that after a little practice officers fast found it easy to fill. No field-testing could be done because no control had been carried out. The meeting agreed to persist with the form and encourage its use on every occasion.

### **EARLY DL UPSURGE PARAMETERS**

36. This presentation was given by Mr. Tsedeke Abate. He made reference to the questionnaire that had been distributed to ELOs. The main purpose of the presentation was to sensitize participants on the significance of control parameters as an important input for developing strategies. Photographic slides on gregarious and gregarising DL patches or groupings were shown. The importance of deciding whether or not to carry out control operations, in the context of preventive control strategy was stressed.

### **DETAILED PRESENTATION OF EMPRES ACTIVITIES, ACHIEVEMENTS AND OBSTACLES DURING 2000 (Annex 4)**

37. The EMPRES staff and the CRC Chairman presented the results according to the established workplan for 2000. Headings used included Activity, Milestone, Achievement, Deviation and Recommendation. Many of the activities were fully achieve, but for some others, problems had been observed. Where these could be solved, the meeting agreed on a recommendation for remedial action. The main recommendations are listed below.



The 8<sup>th</sup> EMPRES Liaison Officers Meeting recommended that:

- 37.1 FAO should ensure that the CRC Secretary gives priority to joint meetings with EMPRES.
- 37.2 The locust expertise at DLCO-EA should be fully utilized to support national or regional locust training activities and the DLCO-EA be brought into the planning process for future training events.
- 37.3 The draft Training Manual should be circulated to locust experts in the region for testing and their comments should be incorporated in the final text. CRC should be asked to arrange translation of the text into Arabic.
- 37.4 EMPRES should arrange for NRI/UK to train one officer from the region and one EMPRES staff member, in trouble-shooting and technical backstopping of the RAMSES system.
- 37.5 At the planning stage for joint-border surveys, the purpose of the survey be agreed between the host countries in order to decide: a) if only the two neighbors should participate or if the survey should be open to other countries, b) if it is expected that a training element may be involved.
- 37.6 EMPRES and DLCO should jointly develop a clear and precise proposal for sustaining the survey capacity of DLCO staff in northern Somalia.
- 37.7 Yemen, Ethiopia and Djibouti should take the necessary action to install e-mail in the PPD.
- 37.8 EMPRES should arrange with NRI to train a new Information Officer in Yemen on RAMSES. Yemen and Eritrea should take action to input locust and ecological data into RAMSES System, and to begin using RAMSES as a survey and control planning tool.
- 37.9 PPDs/National Locust Units should take steps to establish their own locust libraries.
- 37.10 EMPRES should distribute copies of the DL theses which had been printed to relevant regional bodies including EMPRES West, CLCPANO, DLCO-EA and CRC.
- 37.11 EMPRES/CRC should organize a regional workshop on campaign organization in 2001.
- 37.12 Additional field trial equipment and blood-testing kits should be purchased.
- 37.13 The Locust Group at FAO HQ should provide relevant data on spray equipment performance to member countries.
- 37.14 In the absence of DL infestations, new spray equipment should be tested or existing equipment be reviewed with a view to suggesting improvements. This work should be done in collaboration with EMPRES West.
- 37.15 Studies on the economic impact of DL should be conducted during Phase II.
- 37.16 The DL control campaign model should be reviewed in order to make it more user-friendly and suitable as a training tool.
- 37.17 A workshop should be held to review procedures for developing Contingency Plans, in

order to make them more user-friendly.

37.18 FAO HQ should raise the human capacity of the DLIS.

37.19 The cooperation between EMPRES/CR and EMPRES/West should further be strengthened through regular visits, participation at important meetings and exchange of experience.

#### **WORK PLAN FOR 2001 (Annex 5)**

38. The meeting split into three groups to prepare the 2001 Work Plan in a participatory manner. The group results were discussed and agreed in plenary sessions. The Work Plan will be presented to the Consultative Committee Meeting in Rome in December 2000. It will be circulated to all member countries.

#### **ADOPTION OF REPORT**

39. The report was adopted with amendments.

#### **CLOSURE OF THE MEETING**

40. The Senior Officer, Locust and Other Migratory Pests Group at FAO HQ, Mr. Hafraoui thanked of the Ministry of Agriculture and Fisheries of the Sultanate of Oman and its Directorate General of Agriculture & Animal Affairs for having hosted the meeting and the participants for having successfully contributed to the promising results of the meeting. Special thanks also were addressed to the donor community for their significant contribution to promote preventive Desert Locust management strategies in the Central Region.

41. The Secretary of the North-West African Commission, Mr. Benhalima, and the Acting EMPRES/CR Coordinator, Mr. Pantenius also addressed their sincere gratitude to the Ministry of Agriculture and Fisheries of the Sultanate of Oman, for the excellent preparations and the outstanding meeting facilities.

#### **NEXT EMPRES/CR LIAISON OFFICERS MEETING**

42. The representative from Sudan invited EMPRES/CR to host the 9th ELOM in Khartoum during the first week of November. The necessary arrangements and details will be agreed with the Government of Sudan and the acting EMPRES Coordinator.

**Annex 1: Agenda of the 8<sup>th</sup> EMPRES Liaison Officers Meeting Workshop Muscat (Oman), 22<sup>nd</sup> October - 26<sup>th</sup> October 2000**

Day	Time	Activity	Remark
<b>1<sup>st</sup> Day (22.10.00)</b>	09:00 – 09:30	Welcome Address	Undersecretary of the Ministry of Agriculture and Animal Affairs  Venue: Ministry Building
	09:30 – 10:00	Opening Address	Mr. Abdurrahmane Hafraoui (FAO) Venue: Ministry Building
	<b>10:00 – 10:30</b>	<b>Coffee Break</b>	Venue: Ministry Building
	11:30 – 12:00	<ul style="list-style-type: none"> <li>• Presentation of the objectives of meeting, procedures</li> <li>• Selection of Secretariat</li> <li>• Adoption of the WS Agenda</li> </ul>	Christian Pantenius (EMPRES)  Mr. Clive Elliott, Mr. Peter Odiyo, Mr. Tsedeke Abate Venue: Training Centre
	<b>12:00 – 13:00</b>	<b>Lunch Break</b>	
	13:00 – 14:30	Presentation of country progress reports including discussions	ELOs present country papers on the progress of introducing improved DL management components into the national DL control services.
	<b>14:30 – 15:00</b>	<b>Coffee Break</b>	
	15:00 – 16:30	Presentation of country progress reports (cont.)	Country Representatives
	<b>19:45</b>	<b>Welcome Dinner</b>	FAO/EMPRES
<b>2<sup>nd</sup> Day (23.10.00)</b>	8:30 – 10:00	Presentation of country progress reports (cont.)	Country Representatives
	<b>10:00 – 10:30</b>	<b>Coffee Break</b>	
	10:30 – 11:00	Presentation of the Phase II workshop findings and plan of operations  Presentation of the EMPRES/CR training concept and training results during Phase I	Christian Pantenius (EMPRES)
	11:00 – 12:00	Preliminary analysis of the DL research / management strategies in the Central Region	Tsedeke Abate (EMPRES)
	<b>12:00 – 13:00</b>	<b>Lunch Break</b>	

Day	Time	Activity	Remark
	13:00 – 13:30	Presentation of Country ID cards	Christian Pantenius (EMPRES)
	13:30 – 14:30	Improving the survey capacity in the Central Region – lessons learned during Phase I	Fuad Bahakim (EMPRES)
	<b>14:30 – 15:00</b>	<b>Coffee Break</b>	
	15:00 – 17:00	Improving the control capacity in the Central Region – lessons learned during Phase I  Early DL upsurge parameters (Points of discussion)	Munir Butrous (EMPRES)  Tsedeke Abate (EMPRES)
	<b>20:00</b>	<b>Dinner</b>	<b>Ministry of Agriculture and Fisheries</b>
<b>3<sup>rd</sup> Day (24.10.00)</b>	8:30 – 10:00	Detailed presentation of EMPRES activities, achievements and obstacles during year 2000	EMPRES staff (card method)
	<b>10:00 – 10:30</b>	<b>Coffee Break</b>	
	10:00 – 12:00	Detailed presentation of EMPRES activities, achievements and obstacles during year 2000 (cont.)	EMPRES staff
	<b>12:00 – 13:00</b>	<b>Lunch Break</b>	
	13:00 – 14:30	Detailed presentation of EMPRES activities, achievements and obstacles during year 2000 (cont.)	EMPRES staff
	<b>14:30 – 15:00</b>	<b>Coffee Break</b>	
	15:00 – 17:00	<p style="text-align: center;"><b>“Year 2001”</b></p> <p style="text-align: center;"><b>- Dedicated to Progress -</b></p> <p>Identification of necessary activities and important achievements (milestones)</p> <p>Division of tasks between the participants in 3 Groups @ 5 pers.</p>	<p><b>Group 1:</b></p> <p><b>R1<sup>1</sup></b> Operational mandates of different regional organizations in DL management harmonized</p> <p><b>R2</b> National and regional communication network enhanced</p> <p><b>R6 Contingency plans available and implemented</b></p> <p><b>Group 2:</b></p> <p><b>R3 DL early warning and information systems improved</b></p> <p><b>R4 DL survey procedures of member countries improved</b></p> <p><b>R5 DL technicians and officers qualified</b></p> <p><b>Group 3:</b></p> <p><b>R7 Efficient and environmentally safer control methods introduced</b></p> <p><b>R8</b> Systematic method of campaign evaluation developed</p>

<sup>1</sup> As per Phase II Implementation Document (April 2000)

Day	Time	Activity	Remark
<b>4<sup>th</sup> Day (25.10.00)</b>	8:30 – 10:00	Identification of necessary activities and important achievements ( <b>cont.</b> )	Groups
	<b>10:00 – 10:30</b>	<b>Coffee Break</b>	
	10:30 – 12:00	Group work (cont.)	Groups
	<b>12:00 – 13:00</b>	<b>Lunch Break</b>	
	13:00 – 14:30	Group work (cont.)	Groups
	<b>14:30 – 15:00</b>	<b>Coffee Break</b>	
	15:00 – 17:00	Presentation of findings in the plenary and discussion	Plenary
<b>5<sup>th</sup> Day (26.10.00)</b>	08:30 – 12:00	Write up of minutes of meeting	Secretariat
	<b>12:00 – 13:00</b>	<b>Lunch Break</b>	
	13:00 – 14:30	Presentation of findings in the plenary and discussion (cont.)	Plenary
	<b>14:30 – 15:00</b>	<b>Coffee Break</b>	
	15:00 – 16:00	Presentation and adoption of minutes of meeting	
	16:00	Closure	FAO, EMPRES

## Annex 2: List of Participants

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**Annex 3: Address by Senior Officer, FAO/AGPP at the 8th Session of the EMPRES/CR Liaison Officers Meeting**

On behalf of FAO, I would like to thank the Ministry of Agriculture and Fisheries of the Sultanate of Oman for its invitation to host the 8<sup>th</sup> Meeting of the EMPRES Liaison Officers Meeting.

The first phase of the EMPRES Central Region Programme, which became fully operational in 1997, is coming to an end on 31 December of this year. Many lessons have been learned during the past 4 years and important conclusions have been drawn for the future. A common understanding of the expected achievements of Phase I was developed jointly at a workshop in El-Tur, Egypt amongst the stakeholders, involving all the EMPRES member states, DLCO-EA and most of the important donor agencies supporting the EMPRES Programme.

It should be remembered that the EMPRES Central Region Programme was created as a joint endeavour aimed at the development of preventive Desert Locust strategies and at strengthening the national locust control capacities of the Locust Control Units of the EMPRES Member countries.

Allow me to summarize some of the achievements so far:

- A structure within which EMPRES can operate has been developed. Liaison Officers, EMPRES staff, regular meetings, a Consultative Committee are all in place and each knows what they have to do. Cooperation within the EMPRES team has been strengthened and confidence developed between the ELOs and the EMPRES staff.
- Cooperation between the Central Region Commission and the EMPRES Programme has improved, which resulted in a good number of joint activities during the past months.
- Special Country Focus Programmes have been initiated and are in the process of being implemented.
- Applied research projects have finally started.
- Many training courses on different topics have been conducted in order to improve the Desert Locust management skills of the different categories of staff involved in locust operations.

FAO considers that these achievements are not only important, but are an encouragement to continue building on them in Phase II towards the further strengthening of the self-reliance of the Locust Control Units of the member countries and the regional Organizations

The EMPRES Programme has been designed to generate and implement new technologies and improved strategies for preventive Desert Locust management.

To achieve the ultimate goal of the EMPRES Programme:

“To reduce the risk of Desert Locust plagues emanating from the Central Region ... in order to mitigate food security, economic and environmental concerns in the Central Region and beyond”

it is very important that all involved parties contribute to this joint effort between FAO, the donor agencies and the affected countries to the level best of their capabilities and resources. This means that the Locust Control Units of the member countries have to play a very active role in making new approaches and technologies available and making appropriate use of improved



locust management methodologies. In this context it should be recalled that it is the policy of the EMPRES Programme to reduce and not to increase dependency on external assistance when emergency situations arise.

Consequently, the participants of the Phase II planning workshop in El-Tur, Egypt in March this year defined the purpose for the next three years, starting from 1<sup>st</sup> of January 2001, as:

“Components of preventive Desert Locust control management developed and adopted.”

In this aim, the emphasis is given to making concrete components such as improved survey techniques, effective and environmentally safer control methods etc. available, but also to making sure that such technologies are actually used routinely by Locust Control Units once they are available.

We have come together here in Muscat not only to enjoy the hospitality of the Government of the Sultanate of Oman, but also to develop together the necessary steps towards the achievement of the results expected of Phase II. This should be done jointly, in a good spirit of mutual agreement and understanding.

It is my sincere hope that this meeting will further contribute to the achievement and ultimately to the success of the EMPRES Programme. With this sincere hope, I would like to thank the Ministry of Agriculture and Fisheries again for hosting the 8<sup>th</sup> EMPRES Liaison Officers Meeting, and wish every success to this meeting.

**Annex 4: EMPRES Progress and Achievements in 2000 (Findings of the Meeting)**

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
1	<b>EMPRES activities coordinated</b>				
1.1	Conduct bilateral programmes				
1.1.1	Implement CF programmes	3 CF Programmes are operational in ERI, SDN and YEM by mid 2000	<p>CFP-SDN:</p> <ul style="list-style-type: none"> <li>• Workplan developed</li> <li>• Vehicles, field-, radio-, and spray equipment in place</li> <li>• 1 computer for information unit in place</li> <li>• 1 national training course (22/04 – 30/04/00), 17 trainees</li> <li>• 2 local training courses (30/04-01/05/00 and 26/08 – 28/08/00, total 28 trainees) conducted</li> <li>• Computer training course conducted (20 trainees)</li> <li>• Radio operators trained (8 trainees)</li> <li>• Radio schedules introduced</li> <li>• 3 scenarios for contingency plans in preparation</li> <li>• DL library build up</li> <li>• 1<sup>st</sup> progress report submitted 07/00</li> </ul> <p>CFP-ERI:</p> <ul style="list-style-type: none"> <li>• Workplan developed</li> <li>• Field material and sprayers in place</li> <li>• Training curriculum developed</li> <li>• Trainees selected</li> <li>• First funds to run the CFP allocated</li> <li>• First progress report submitted (05/00)</li> </ul> <p>CFP-YEM:</p> <ul style="list-style-type: none"> <li>• Workplan partly accomplished</li> </ul>	<p>SDN:</p> <ul style="list-style-type: none"> <li>• CFP implementation according to plan</li> </ul> <p>ERI:</p> <ul style="list-style-type: none"> <li>• Implementation delayed due to long time absence of ELO, shortage of staff and absence of many trainees</li> </ul> <p>YEM:</p> <ul style="list-style-type: none"> <li>• Delayed due to lack of counterpart funds</li> </ul>	<p>SDN:</p> <ul style="list-style-type: none"> <li>• Further strengthen the information unit at the PPD and national information network</li> <li>• Evaluation of the training impact</li> <li>• Introduction of self-reliant training and re-training schemes</li> </ul> <p>ERI:</p> <ul style="list-style-type: none"> <li>• Enforcement of support to the implementation of the Country Focus Programme once the conditions are more favourable</li> </ul> <p>YEM:</p> <ul style="list-style-type: none"> <li>• Prepare special Letter of Agreement</li> <li>• Review workplan</li> <li>• Implement initial activities as soon as possible</li> </ul>

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
1.1.2	Initiate bilateral programmes	1 Country Focus Programme initiated in Saudi-Arabia by 11/00	Country Focus Planning workshop planned for 11/00	Difficult to realise due to work load	Planning workshop to be postponed to a more suitable date until 2001
1.2	Coordinate EMPRES and CRC activities	<p>1.2.1 Joint EMPRES / CRC workplan adopted by 01/00 and distributed to the stakeholders</p> <p>1.2.3 Joint workplan ready by mid March 2000</p> <p>1.2.3.1 EMPRES / CRC attendance in 8<sup>th</sup> ELOM, 23<sup>rd</sup> CRC Session, and planning workshops</p> <p>1.2.6 Phase II Planning Document ready by May 2000 and submitted to donors</p> <p>1.2.7.1 Up to 4 observers from non-CRC countries invited to CRC Executive Committee Meeting as observers</p> <p>1.2.8 Up to 2 contracts with DLCO-EA implemented</p>	<ul style="list-style-type: none"> <li>Joint CRC / EMPRES workplan for 2000 finalized and endorsed by CRC in March 2000</li> <li>Staff meeting held in Addis Ababa 12/01 – 14/01/00</li> <li>Permanent consultation between CRC and EMPRES in all relevant matters</li> <li>EMPRES Phase II planning workshop conducted in Egypt 26/03 – 30/03/00</li> <li>Phase II Implementation Document finalized, endorsed by FAO HQ and distributed to all relevant stakeholders in 05/00</li> <li>11 coordination travels undertaken from Addis Ababa to Eritrea, Egypt, Djibouti, Oman, Yemen, England, Holland, Rome and Nairobi</li> <li>Djibouti applied for CRC membership</li> <li>Aerial Survey Contract established with DLCO-EA for surveys in Eritrea, Ethiopia, and Somalia 12/99</li> <li>1 aerial survey conducted in Eritrea</li> <li>Planning for set up of self-reliant survey systems in Somalia initiated with DLCO-EA</li> <li>Agreement for bio-geographical study of DL recession areas in Ethiopia established 12/99 between DLCO-EA and NRI and implemented 10/00</li> <li>Acting Director of DLCO-EA participated in Phase II planning workshop</li> <li>EMPRES participation as observer in DLCO-EA Council of Ministers Meeting in Djibouti 28/09 – 29/09/00</li> </ul>	<ul style="list-style-type: none"> <li>CRC Secretary could not participate in EMPRES Phase II planning workshop</li> <li>CRC Secretary appointed for new position in 09/00</li> <li>CRC Session of the Commission Meeting postponed until 2001</li> <li>Implementation of NRI-DLCO Programme delayed by 6 months</li> <li>Acting Coordinator participation at DLCO-EA workshop on Harmonization of Registration of Biocontrol Agents in the Region was not possible due to too short notice</li> </ul>	<ul style="list-style-type: none"> <li>FAO should ensure that the CRC Secretary gives priority to joint meetings with EMPRES</li> </ul>

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
	Coordinate EMPRES and CRC activities (cont.)		<ul style="list-style-type: none"> <li>• Visit of Mr. Robert Aston (EMPRES-West) to Sudan (17/08 – 24/08/00) in the context of harmonization of development of improved control techniques</li> <li>• ELO Meeting conducted in Muscat from 22/10 – 26/10/00</li> <li>• Consultative Committee Meeting scheduled for 07/12 – 08/12/00 in Rome</li> </ul>	•	•
<b>2</b>	<b>Survey and early warning systems improved</b>				
2.1	Qualify national trainers		<ul style="list-style-type: none"> <li>• 1 international ToT course conducted in coordination with NRI in Muscat 01/00</li> <li>• 20 trainees from EMPRES and other regions participated</li> <li>• 10 trainees from EMPRES countries of the CR participated</li> </ul>		
2.2	Qualify Desert Locust Officers				
2.2.1	Support national survey and control training courses	National survey and control training courses supported yearly in front-line countries and every other year in other countries	<ul style="list-style-type: none"> <li>• National survey and control training courses are supported by CRC and EMPRES with up to USD 5,000 per course in Sudan, Egypt, Oman, Djibouti, and Yemen during 2000.</li> <li>• Technical support provided to Sudan (April) and Djibouti (September), and Sudan, Oman, and Egypt (October – December 2000)</li> </ul>		

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
2.2.1.2	Participate as trainers in national survey and control training courses	EMPRES trainers participate in survey and control courses in Sudan, Saudi Arabia and Oman	<ul style="list-style-type: none"> <li>Preparation for survey and control training courses for 16 trainees in Oman completed</li> <li>Preparation for survey and control training course for 16 trainees to be conducted in Egypt during 11/00</li> <li>Preparation for survey and control training course for 20 trainees in Sudan during 12/00</li> <li>Survey and control training course conducted for 17 trainees in Sudan 22/04 – 30/04/00</li> <li>Survey and control training course for 18 trainee (2 from Somalia) in Djibouti 11/09 – 14/09/00</li> </ul>		
		Up to 2 local survey and control courses conducted per year and country	<ul style="list-style-type: none"> <li>2 local training courses conducted in Sudan in April and August 2000 and 1 additional planned for November 2000</li> <li>Training for 16 field staff conducted in Ethiopia during October 2000</li> <li>Survey and control course for 29 trainees in Oman during March 2000</li> <li>Training on the use of GPS for 61 trainees in Oman during October 2000</li> </ul>	Insufficient involvement of DLCO-EA in Desert Locust training activities	<ul style="list-style-type: none"> <li>Locust expertise at DLCO-EA should be fully utilized to support national and regional training activities</li> <li>DLCO-EA should be integrated into the planning process for future training events</li> </ul>
2.2.3	Carry out training needs assessment	Up to 3 training need assessments conducted in selected countries	Questionnaire prepared and revised the acting EMPRES coordinator and under final revision in order to be implemented in Ethiopia, Sudan, Oman, and Yemen and at a later stage in the remaining countries	Due to time limitations implementation of training need assessment postponed until 2001	Training need assessment should be conducted in all EMPRES/CR countries
2.2.4	Support academic training		<ul style="list-style-type: none"> <li>Curriculum for Desert Locust Diploma course at the University of Khartoum developed</li> <li>Diploma course approved and advertised</li> <li>Teaching equipment ordered</li> <li>1 MSc student from Saudi Arabia enrolled at Khartoum University</li> </ul>	No fellowship for the Diploma course so far provided by the CRC	EMPRES, DLCO-EA and CRC seek funding to support candidates for Diploma studies at Khartoum University starting from Sept. 2000
No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation

2.2.5	Conduct survey and control performance assessments	Survey and control performance assessments conducted in up to 3 selected countries		No achieved due to absence Desert Locust infestations	Conduct survey and control performance assessments in all of the EMPRES member countries
2.3	Prepare training manual	Training manual ready by 2001 and drafting meeting conducted at NRI first half of 2000	<ul style="list-style-type: none"> <li>• Concept development meeting held at NRI and FAO 05/00</li> <li>• Concept for training manual drafted (Contents, Trainers Notes, Trainees Notes, Visual Aids, Course Organization, Filed Cards, On-Line Features etc.)</li> <li>• Workplan developed</li> <li>• Letter of Agreement between FAO and NRI drafted</li> </ul>	No information yet received from DFID contribution to the Training Manual	<ul style="list-style-type: none"> <li>• Implement Letter of Agreement as soon as possible</li> <li>• CRC should support translation of the Training Manual into Arabic</li> </ul>
2.4	Support national Information Officers	<ul style="list-style-type: none"> <li>• Up to 5 Information Officers trained on remote sensing, forecasting and reporting</li> <li>• Up to 8 Information Officers participated in regional forecasting seminar by 04/00</li> </ul>	<ul style="list-style-type: none"> <li>• Forecasting training course conducted in cooperation with CRC in Ismaelia in 04/00. 9 trainees from EMPRES countries participated.</li> <li>• 1 Information Officer from Sudan for on-the-job training at DLIS for approx. 6 months from 10/00.</li> <li>• Reporting frequency from the member countries improved during the last year</li> </ul>	<ul style="list-style-type: none"> <li>• Capacity of the DLIS not sufficient to provide training for 5 trainees as planned</li> <li>• Use of RAMSES system in Eritrea and Yemen disrupted due to number of technical problems and non-availability of trained staff.</li> <li>• Frequency and quality of Desert Locust reports not in all cases satisfactory</li> </ul>	<ul style="list-style-type: none"> <li>• NRI to train at least 1 officer from the Central Region and 1 EMPRES staff on trouble shooting and technical backstopping on the RAMSES system.</li> <li>• EMPRES to closely monitor the Desert Locust developments in the Region and to provide more frequent bilateral backstopping</li> <li>• FAO should raise the human capacity of the DLIS</li> </ul>
2.4.5	Prepare Arabic version of the Desert Locust Bulletin		Arabic version transmitted on a monthly basis to relevant countries		
2.4.7	Obtain satellite data and make it available to member countries			Ground truthing and adjustment of satellite images required in order to serve as decision making tool	

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
2.5	<ul style="list-style-type: none"> <li>Support joint surveys</li> <li>Conduct joint border surveys</li> <li>Conduct joint in-country surveys</li> </ul>	<ul style="list-style-type: none"> <li>Up to 2 joint border surveys conducted by end of 2000</li> <li>1 joint in-country survey conducted for up to 9 Desert Locust Officers by 07-08/00</li> </ul>	<ul style="list-style-type: none"> <li>Joint border survey conducted between Egypt and Sudan 02/00, 16 participants from EMPRES and CRC countries.</li> <li>Joint border survey between Sudan and Eritrea proposed for 12/00</li> <li>Joint border survey between Ethiopia, Somalia and Djibouti proposed for 12/00</li> </ul>	Planned joined in-country survey in Sudan postponed until 2001	<ul style="list-style-type: none"> <li>Set priorities regarding the proposed joint border surveys</li> <li>See agreement from the concerned Governments</li> <li>The purpose and inclusion of participants others than from the concerned countries should be determined at the planning stage</li> </ul>
2.6	Provide survey equipment	Standard survey equipment available in up to 5 countries by end of 2000	<ul style="list-style-type: none"> <li>Survey equipment made available for Djibouti and Sudan</li> <li>All other member countries are sufficiently supplied with survey equipment</li> </ul>		
2.7	<ul style="list-style-type: none"> <li>Strengthen survey capacity in Somalia</li> <li>Examine the sustainability of the Government Services in Somalia</li> </ul>	<ul style="list-style-type: none"> <li>Survey capacity and needs in Somalia known by 12/00</li> <li>The sustainability of the Government Services in Somalia known (up to 2 visits) by 12/00</li> </ul>	<ul style="list-style-type: none"> <li>General understanding achieved between the UNV, DLCO-EA and EMPRES with regard to development of the survey capacity in Somalia</li> </ul>	<ul style="list-style-type: none"> <li>Planned visit to Somalia postponed due to security reasons</li> </ul>	<ul style="list-style-type: none"> <li>The attempt of strengthening the survey capacity in Somalia requires more careful thinking</li> <li>Develop clear and concrete proposal regarding the survey capacity in Somalia with DLCO-EA</li> </ul>
<b>3</b>	<b>Regional information exchange system linked to the FAO HQ</b>				
3.1	Provide training on computer handling and data processing	1 local computer course in up to 5 countries for 2 information officers	<ul style="list-style-type: none"> <li>Sudan: 20 trainees in 05/00</li> <li>Djibouti: Funds provided for 5 trainees 07/00</li> </ul>		Djibouti to organize the computer training course as soon as possible

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
3.2	Get access to the Internet	<ul style="list-style-type: none"> <li>PPDs in Sudan, Djibouti and Yemen have Internet access by 05/00</li> </ul>	<ul style="list-style-type: none"> <li>Djibouti: Funds provide for E-Mail connection</li> <li>Sudan: E-mail address ppdlocust(at)hot.mail.com since 08/00</li> </ul>	No direct E-mail access yet in PPD Yemen	PPD Yemen to take the necessary steps as soon as possible
3.3	Introduce RAMSES system	<ul style="list-style-type: none"> <li>RAMSES system introduced in up to 5 countries</li> <li>PPQU in Eritrea make regular use of the RAMSES system</li> <li>2 Information Officers in Yemen qualified on the RAMSES system and system operation by 12/00</li> <li>Demand for RAMSES and assistance needs known by end of 2000</li> </ul>	<ul style="list-style-type: none"> <li>RAMSES system introduced by NRI in Yemen 01/00 and Eritrea 03/99</li> <li>Preparation under way in Sudan and Ethiopia (procurement of Computer equipment and GIS software)</li> <li>Demand from Saudi Arabia, Oman and DLCO-EA</li> </ul>	RAMSES system in Yemen and Eritrea not yet fully operational and in use	<ul style="list-style-type: none"> <li>Train Information Officer in Yemen on RAMSES</li> <li>Register all relevant locust and ecological data into RAMSES in Yemen and in Eritrea</li> <li>Make Use of the RAMSES system as a survey and control planning tool</li> <li>Train 1 regional officer and 1 EMPRES staff on the application of RAMSES and as trouble shooter and back-stoppers (e.g. DLCO-EA)</li> </ul>
3.4	Establish Desert Locust Information and documentation systems	Up to 8 PPDs build up Desert Locust Documentation Centres	<ul style="list-style-type: none"> <li>Documentation Centre at PPD Sudan in process</li> <li>Literature review in process</li> </ul>		The PPDs to give further attention in building up of DL documentation centres
3.4.1	Assist in printing of graduate thesis	3 post graduate thesis on Desert Locust subjects form Khartoum University printed	<ul style="list-style-type: none"> <li>10 copies of PhD thesis</li> <li>10 copies of MSc thesis</li> </ul> <p>For the University of Khartoum were prepared</p>	Printing of third thesis delayed	One copy form each thesis to be dispatched to EMPRES West / DLCO-EA / CRC and CLCPANO
3.4.3	Complete text book on Desert Locusts		Text book in Arabic language under preparation, some contributions submitted to the CRC Secretariat	2-3 contributions to the textbook still pending	



No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
3.4.5	Produce video on Desert Locust		Video prepared and available FAO HQ		2 cassettes for each of the EMPRES / CRC countries to be made available
<b>4</b>	<b>Early control capacity improved</b>				
4.4	Conduct regional workshop on campaign organization and evaluation			Postponed to 2001	To be organized in cooperation between EMPRES and CRC in 2001
4.5	Improve pesticides application techniques				
4.5.1	Conduct Differential GPS demonstrations	Up to X DGPS demonstrations in Saudi Arabia and Oman conducted		DGPS companies did not respond to the proposed test in Saudi Arabia and Oman due to the conditions that companies must pay DSA and tickets of their technicians and assurance was given by Saudi Arabia to purchase the product	
4.6	Procure field trial equipment	Field trial equipment in place in Sudan, Yemen and Eritrea by mid 2000	Basic field trial equipment in place in Sudan, Eritrea and Yemen. Catalogue for field equipment ordered	Further field trial equipment required	Order field additional field trial equipment as soon as possible
4.7	Assess impact of pesticides on human health				
4.7.2	Carry out blood testing survey in Sudan	<ul style="list-style-type: none"> <li>• At least 1 blood testing survey conducted in Sudan by 11/00</li> <li>• 1 blood testing kit in Sudan for contamination assessment available by 03/00</li> </ul>		Problems with purchase of the kit due to export embargo to Sudan	Alternative arrangement to be sought

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
4.8	Review spray monitoring form	Spray monitoring form reviewed and adopted in the Central Region by 10/00	Spray monitoring form reviewed, 1 comment form CRC and 2 comments received from Saudi Arabia and Oman		
4.9	Promote registration of spray equipment for Desert Locust control				Desert Locust Group to provide the relevant data to the member countries
4.10	Support disposal of obsolete pesticides		Inventories on obsolete pesticides from CRC member countries compiled in a report		Member countries to seek for potential donors to resolve the problem of obsolete pesticides
<b>5</b>	<b>Desert Locust management methods and strategies improved</b>				
5.1	Support operational research projects	Up to 5 joint research projects initiated or implemented by 12/00	<ul style="list-style-type: none"> <li>1 population dynamic research project with the University of Khartoum initiated</li> <li>1 research project on environmentally friendly application of Metarhizium initiated with the University of Aden</li> </ul>		
5.1.1	Establish ad-hoc research working group		Preparations for workshop completed. Workshop to be conducted on 06/11 – 08/11/00		
5.2.1	Assess Desert Locust research capacities in the Central Region		<ul style="list-style-type: none"> <li>Available literature reviewed by 10/00</li> <li>Questionnaire developed and sent to the ELOs for comments 09/00</li> </ul>		
5.2.2	Make research data and results available		Review of core literature completed and 1 <sup>st</sup> draft of Desert Locust bibliography prepared		
5.2.3	Improve Desert Locust population monitoring and assessment methods	Up to 3 projects on Desert Locust population dynamic assessment methods implemented in Sudan, Yemen and Ethiopia	<ul style="list-style-type: none"> <li>1 Desert Locust population dynamic study implemented in Sudan</li> <li>Sampling techniques for solitary locust populations developed and implemented</li> <li>Data analysis completed. Final report from Wageningen University due by end of 10/00</li> </ul>	Population dynamic study in Yemen not conducted due to lack of locust infestation	

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
5.2.5	Improve pesticides application techniques	Up to 2 studies on improved application techniques implemented in Saudi Arabia (other countries to be determined)		Due to absence of Desert Locust infestation it was not possible to conduct barrier treatment or RAATS trials in cooperation with EMPRES/West	In absence of Desert Locust populations new spray equipment should be tested or how to improve existing equipment in collaboration with EMPRES/West
5.3	Improve understanding of environmental impact of Desert Locust control measures	<ul style="list-style-type: none"> <li>• 1 environmental safety workshop conducted in Cairo for up to 8 participants from the CRC and EMPRES</li> <li>• Up to 2 environmental impact studies conducted in Sudan and Egypt</li> <li>• APO appointed to identify and assess ecological sensitive areas</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental safety seminar conducted by LOCUSTOX in Cairo 02/00, 7 participants from EMPRES countries</li> <li>• APO for environmental investigations and detection of ecological sensitive areas selected 07/00, duty station Khartoum from October 2000</li> </ul>	Environmental impact studies not conducted due to absence of locusts	
5.4	Improve understanding of economic impact of Desert Locust control measures	Up to 3 studies on economic impact of Desert Locust control measures conducted in cooperation with University of Hanover	<ul style="list-style-type: none"> <li>• Economic assessment guidelines from Hanover University presented to FAO in 05/00</li> <li>• Expert meeting on recommended economic assessment approaches conducted in Rome 05/00</li> <li>• Recommendations for Phase II made and published</li> </ul>		Implement economic impact activities as recommended in Phase II

No.	Output / Activity	Milestone	Achievement	Deviation	Recommendation
5.5	Enhance preventive Desert Locust control management	First discussion paper on reviewed Desert Locust management components and strategies ready by 12/00		<ul style="list-style-type: none"> <li>• Review of Desert Locust management strategies delayed.</li> <li>• Report on preventive control strategies delayed.</li> <li>• Summary on operational Desert Locust capacities in delayed</li> </ul>	Reports expected to be finalized in April 2001.
<b>6</b>	<b>Rapid deployment plans and contingency arrangements in place</b>		•		
6.1	Introduce rapid deployment procedures	<ul style="list-style-type: none"> <li>• Contingency plans in up to 3 PPDs introduced by 12/00</li> <li>• Recommendations on understating and purpose of Contingency Plans ready by 06/00</li> <li>• Up to 3 Contingency Plans are introduced in Sudan, Yemen and Ethiopia</li> </ul>	<ul style="list-style-type: none"> <li>• Drafts for Contingency plans in Sudan developed</li> </ul>	CPs for Yemen and Ethiopia pending	Review Desert Locust control campaign simulation model (Wagenigen University) and make it more user friendly. Work out user friendly CP Guidelines. Provide training on CP development and handling. CP for Yemen to be developed end of 1 <sup>st</sup> quarter of 2001
6.2	Improve management system at the PPDs	Appropriate training institutions for management seminars identified and prices known by 12/00	<ul style="list-style-type: none"> <li>• 1 institution (MIC) agreed on organizing tailor made campaign management seminar by mid of 2001</li> <li>• Draft ToRs submitted to MIC for approval and suggestions</li> </ul>		

**Annex 5: Envisaged EMPRES Activities and Achievements in 2001 (Findings of the meeting)****Result 1: Operational mandates of different regional organizations in Desert Locust management harmonized**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Constitute and support a working group consisting of staff from CRC and DLCO-EA					
Draft terms of references of the working group / technical advisory committee	ToR comprise elements of follow-up of the progress of the organizations	FAO / DLCO-EA	1 <sup>st</sup> quarter 2001	<ul style="list-style-type: none"> <li>EMPRES Coordinator to liase the advisory committee</li> <li>Advisor to be hires if necessary</li> </ul>	
Conduct regular meeting of the advisory committee	The committee meets at least 2 times per year via rotation Cairo / Addis				20,000 CRC/DLCO-EA/EMPRES
Organize inter-governmental exchange on legal issues on Desert Locust regional organizations		Member countries / FAO	End of 2002	FAO / CRC should initiate the approaches and visits	
Encourage CRC membership on non member countries of the Central Region	At least 2 non-member countries attend the next session of the CRC as observer			FAO / CRC will invite non-member countries	25,000
Further develop joint activities between CRC, DLCO-EA and EMPRES towards creating sustainability	Mechanisms for sustainable collaboration established	CRC / FAO / DLCO-EA	By end phase 2	Gradually integrate of EMPRES activities into CRC and DLCO-EA	To be advised
Harmonize training concepts of international and national organizations and services	Harmonized training procedures developed between CRC, DLCO-EA and EMPRES defined by 2002	CRC / EMPRES / DLCO-EA			

**Result 2: National and regional communication network enhanced**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Stimulate proactive attitude in information exchange among stakeholders	Schedules for radio contacts established in at least one country (Sudan)	EMPRES / Member country	mid 2001	Initiate official communication under the umbrella of EMPRES (agreement)	30,000
Radio schedules and standard communication procedures as necessity		Member countries			

**Result 3: Desert Locust early warning and information systems improved**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Define national information systems and requirements and needs	Reports on information needs from all EMPRES countries received	ELOs	June 2001	Quick feed back form ELOs is expected	
Develop recommendations for improved Desert Locust information systems	Recommendations be submitted	NPO-S	Sept. 2001		
Build up improved information system	Initiatives in several member countries on the way	ELOs	Dec. 2001		
Provide facilities for data managements systems (RAMSES)	At least 5 of the EMPRES member countries have all necessary information equipment in place	EMPRES Coordinator	Dec. 2001		50,000 CRC / EMPRES / donors
Follow up the process of improvement	At least 2 visits to selected countries	NPO-S, EMPRES Coordinator	Upon needs		5,000

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Introduce new technologies including remote sensing into early warning information systems	Sent satellite images to up to 3 countries (Oman, Eritrea and Sudan)	FAO-DLIS	Regular Schedule		8,000
Conduct ground truthing operations on satellite images	At least 3 – 4 ground truthing operations conducted	ELOs			36,000 CRC / EMPRES
Provide feed back on the usefulness of satellite images for decision making	3 –4 reports arrive at DLIS	ELOs			
Despatch Desert Locust reports to DLIS	Reports arrive at DLIS before 25 <sup>th</sup> of each month or 5 days after completion of surveys	ELOs			
Harmonize Desert Locust information system between CRC, DLCO-EA and DLIS	Regional organizations alert member countries on special locust events in time	EMPRES Coordinator			
Determine modalities of information management among the stakeholders	Draft concept ready by 6/01	EMPRES Coordinator			
Identify standard procedures among the stakeholders		EMPRES Coordinator			
Conduct meeting towards common procedures	Procedure identified	EMPRES Coordinator	Sept. 2001		10000
Implement standard Desert Locust information procedures	Initiatives taken by stakeholders to implement the Desert Locust information	CRC, DLCO-EA, DLIS	Dec. 2001		

**Result 4: Desert Locust survey procedures of member countries improved**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Develop sustainable and targeted survey procedures	At least 4 countries establish and make use of survey plans	NPO-S, ELOs	Nov. 2001		
Develop reference survey plan for the member countries	Draft developed and submitted for approval from CRC, EMPRES and DLIS	NPO-S, DLIS	March 2001		
Develop adapted survey plan for selected countries	Survey plans developed for at least 2 countries (Eritrea and Sudan)	NPO-S, ELOs			4000
Make regular use of the survey plans		ELOs			
Follow up the implementation process of the survey plans	At least 1 visit during the relevant season	NPO-S			2000
Introduce new technologies into the survey system		NPO-S, R&D Expert			5000
Define and describe potential breeding areas	Maps and descriptions available for at least 1 country (Yemen)	R&D Expert			
Take inventory of Desert Locust high frequency and distribution habitats	Inventory compiled by March 2001	R&D Expert			
Initiate joint research activities on characterization of Desert Locust habitats in the breeding areas	Partners identified and ToRs developed	R&D Expert	May 2001		15000 CRC / EMPRES
Carry out joint surveys	1 joint survey along the Eritrean / Sudanese border conducted	EMPRES Coordinator, DLCO-EA, PPDs Sudan and Eritrea		DLCO-EA coordinates the necessary arrangements together with the ELOs	6000
Strengthen self-reliant survey capacity in SOM		EMPRES / DLCO-EA			30,000



**Result 5: Desert Locust technicians and officers qualified**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Define training needs for the different levels	Needs of at least 2 countries (Eritrea and Sudan) known	ELOs, NPO-S and NPO-C			6000
Develop standard training manual	In English and Arabic versions	EMPRES Coordinator / CRC, NRI			50000 EMPRES / CRC
Organize training of trainers	1 regional ToT seminar in Sudan	EMPRES Coordinator			20000 EMPRES / CRC
Provide training for information and forecasting officers	1 regional training course (Yemen or Egypt)	EMPRES Coordinator / CRC			20000 EMPRES / CRC
Organize different survey and control training courses	At least 1 nation / local training course conducted in up to 3 member countries	PPDs			5000 per training course  EMPRES / CRC
Training impact monitoring system developed		EMPRES Coordinator			5000
Evaluate training impact		PPDs, EMPRES			
Organise campaign management seminar		EMPRES Coordinator			35000  EMPRES / CRC / donors
Collaborate with the Acridiology Section of Khartoum University	At least 5 Diploma students per year enrolled at the Khartoum University	EMPRES Coordinator / CRC			50,000  EMPRES / CRC

**Result 6: Contingency plans available and implemented**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Organize workshop for the preparation of contingency plans	1 regional workshop conducted in collaboration with WU	EMPRES / WU	By end of 2001		20,000 EMPRES / CRC
Prepare national contingency plans	At least 2 Contingency Plans submitted to the MoA and FAO (from Sudan, Ethiopia)	ELOs	March 2001	EMPRES coordinator and ELOs monitor the preparation	
Implement the contingency plans	National ad hoc steering committee crated	ELOs	By 2002/3	Implementation depends on the locust situation and review of resources  Involvement of donor countries on bilateral basis / relevant regional organizations  (1) Recession: National responsibility / EMPRES (2) Upsurge and outbreak: Responsibility national and EMPRES (3) Plague: national and international community	To be advised

**Result 7: Efficient and environmentally safer control methods introduced**

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Facilitate development of testing of new technologies taking into account human health and the environment	Recommendations of environmentally safer campaign operations formulated by 2003	NPO-C		In collaboration with LOCUSTOX	5000
Purchase and distribute additional field equipment as required for field trials to improve control techniques in Eritrea Yemen and Sudan	<ul style="list-style-type: none"> <li>Filed trial equipment available in designated countries</li> </ul>	NPO-C, EMPRES Coordinator, FAO	June 2001		30,000
Test new spray equipment and suggest improvement to existing equipment	<ul style="list-style-type: none"> <li>Some new equipment tested, report available</li> <li>Suggestion for improvement of some existing equipment, report available</li> </ul>	NPO-C, EMPRES West, DLCO-EA, PPD Sudan	Report ready by October 2001	<ul style="list-style-type: none"> <li>In the absence of Desert Locusts</li> <li>Companies willing to provide new equipment for testing</li> <li>In collaboration with EMPRES West</li> </ul>	5,000
Provide DLCO-EA with DGPS incl. flow meter for aerial spray	Aerial DGPS available, installed and demonstrated in the Region	FAO HQ, DLCO-EA, EMPRES, donors	By June 2001	Donors agree to make funds available	45,000
Arrange demonstration and training for DLCO-EA pilots and invite Oman, Saudi Arabia		DLCO-EA, FAO HQ, EMPRES, PPD Oman and Saudi Arabia	By September 2001		5,000
Conduct testing of vehicle mounted DGPS	Ground DGPS obtained and tested in Egypt and / or Yemen	EMPRES West, EMPRES Coordinator, FAO HQ, PPDs Egypt and Yemen	By Dec. 2001	<ul style="list-style-type: none"> <li>In collaboration with EMPRES West</li> <li>Company willing to provide equipment or funds available for purchase</li> </ul>	15,000

Activities	Milestones	Responsibilities	Timeframe	Remarks	Allocation
Conduct trials on bio-pesticides (metarhizium, PAN etc.)	At least 2 trials on bio-pesticides carried out by end of 2001	EMPRES, DLCO-EA, LUBILOSA, ICIPE, PPDs Yemen, Eritrea, Saudi Arabia and Sudan	Summer (Jul-Sept.), Winter (Nov. – Dec. 2001)	Locust situation allows Arrangements completed	15,000
Make advance arrangements for bio-pesticides trials	Advance arrangements for bio-pesticides trials arranged	EMPRES, DLCO-EA, companies, and PPDs  Yemen, Eritrea, Sudan, Saudi Arabia according to DL infestation	By June 2001	Government permission, availability of material, purchase, trial protocol and cost	
Carry out barrier treatment trials with IGRs	At least 1 trial on barrier treatment with IGRs carried out by end of 2001	As above	During summer or winter seasons		15,000
Make advance arrangements for IGR trials	Advance arrangement for IGR trials made		By June 2001	Government permission, availability of material, availability, purchase cost, trial protocol and cost	
Carry out blood testing surveys in collaboration with DLCO-EA	<ul style="list-style-type: none"> <li>Blood testing kit purchased,</li> <li>Baseline studies completed,</li> </ul>	FAO HQ, EMPRES, DLCO-EA	By March 2001	Locust situation allows	2000
Prepare a blood testing programme		DLCO-EA, EMPRES	June 2001		
Carry out base line blood testing programme	1 base line blood testing programme conducted in Sudan by end of 2001	EMPRES, DLCO-EA, PPDs in Sudan and Ethiopia, EMPRES West	By Dec. 2001	Locust situation allows	3,000
Promote the use of proven technologies					

Activities	Milestones	Responsibilities	Timeframe	Remarks	Allocation
Promote registration of metarhizium in Sudan	Metarhizium registered in Sudan	PPD, Lubilosa, Company, EMPRES	Dec. 2001		
Promote phasing out ENS and promote replacing with suitable ULV equipment		EMPRES, ELOs			
Prepare inventory of vehicle mounted ULV and ENS sprayers	Inventory of ENS and ULV vehicle mounted sprayers prepared	EMPRES, ELOs	Dec. 2000	Inventories to be sent to EMPRES	
Promote the follow up of good practice and guidelines for spraying	Implement monitoring system	ELOs, EMPRES			
Promote the use of ULV application for Desert Locust control	PPDs			As recommended by the FAO Pesticide Referee Group	

**Result 8: Systematic method of campaign evaluation developed**

Activities	Milestones	Responsibilities	Timeframe	Remarks	Allocation
Assemble and analyse and recommend survey and control operations					
Complete questionnaire on control	By Egypt and Djibouti until March 2001, analyzed and compiled by 12/2001	NPO-S, NPO-C, ELOs, WU	By December 2001		
Prepare base line questionnaire on survey procedures					
Compile responds and analyse findings					
Implement and make regular use of the spray monitoring form		ELOs, Locust Officers			

<b>Activities</b>	<b>Milestones</b>	<b>Responsibilities</b>	<b>Timeframe</b>	<b>Remarks</b>	<b>Allocation</b>
Analyse socio-economic impact of campaigns	1 socio-economic study initiated in the Central Region by University of Gothenburg, Interim report available	University of Gothenburg in collaboration with relevant PPDs	Dec. 2001		Swedish contribution
Conduct seminar on risk and welfare analysis		University of Hanover, EMPRES	Dec. 2001		25,000 CRC / EMPRES / donors
Investigate potential for alternative approaches to offset the effects of Desert Locust damage	Study on insurance schemes initiated	University of Gothenburg	Dec. 2001		Swedish contribution
Investigate scenarios on survey and control operations to improve strategies	Computer based model reviewed	Wageningen University	Dec. 2001		WU contract