REPORT

FAO Commission for Controlling the Desert Locust in South-West Asia

Islamabad, Pakistan
25-27 January 2011

Twenty-seventh Session

Report of the FAO Commission for Controlling the Desert Locust in South-West Asia

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Food and Agriculture Organization of the United Nations
Rome, 2011

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Delegates of the 27th Session of the FAO Commission for Controlling the Desert Locust in South-West Asia (left to right): Munir Butrous, (FAO/CRC), S.P. Gupta (India), Tasneem Ahmad (Pakistan), Keith Cressman (FAO), and Mehdi Ghaemian (I.R. Iran), and Abdul Ghafar Ahmadi (Afghanistan).

Summary of Recommendations and Agreements

The Member Countries:

1. surveys should be supervised to ensure that the proper methodology is being utilized by field officers;
2. foot transects should use a variable width (rather than a fixed width) that is determined by the distance in which locusts are disturbed;
3. verified dose rates of pesticides shown to be effective against Desert Locusts are used in appropriately calibrated spray equipment;
4. the Joint Survey should continue on an annual basis in the spring breeding areas of I.R. Iran and Pakistan. During periods of insecurity, both teams should conduct a three-week survey (9-30 April) in their own territory. At the end of the survey, the team leaders and national Locust Unit Heads from both countries should meet for three days (2-4 May) in Zahedan, I.R. Iran to exchange data, share experiences and finalize a single joint survey report to be submitted to FAO DLIS no later than 5 days after the last day of the meeting. DSA and GOE rates should remain unchanged.
5. frontline countries immediately inform FAO DLIS when eLocust2 units malfunction;
6. exchange fortnightly or monthly bulletins with each member country by email;
7. two locust information officers from each frontline country should attend the annual SWAC/CRC RAMSES/elocust2 inter-regional workshop in Cairo in 2011 and 2012;
8. Master Trainers should conduct at least two training courses per year in their country, funded either partially or fully from national resources;
9. try to introduce *Metarhizum* and use it in Desert Locust control operations when appropriate.

Afghanistan:

1. identify a suitable and qualified candidate for an MSc degree in entomology with emphasis on locusts at the University of Agriculture, Faisalabad (Pakistan);
2. finalize and distribute as soon as possible the translation of the overhead transparencies in the *FAO Desert Locust Master Trainer Manual* as well as the *FAO Standard Operating Procedures* in the appropriate local languages.

India:

1. make every attempt to improve the coverage of surveys and increase the number of areas that are checked, especially those areas near the Pakistani border and in Jaisalmer, Bikaner and Barmer districts;
2. designate at least two Locust Information Officers;
3. provide more detailed information in the monthly India/Pakistan border meeting reports, including situation maps;
4. send the monthly border reports to FAO DLIS on a regular and timely basis;
5. consider deactivating eLocust2 units when they are not to be used for several months, and prepare a schedule accordingly;
6. establish a national training budget for the training of LWO staff;
7. identify a second Desert Locust Master Trainer;

8. finalize and distribute as soon as possible the translation of the overhead transparencies in the *FAO Desert Locust Master Trainer Manual* as well as the *FAO Standard Operating Procedures* in the appropriate local languages;
9. install the Codan HF radios without further delay and obtain training.

I.R. Iran:

1. nominate Joint Survey participants no later than 15 February and obtain security clearance no later than 15 March;
2. one Iranian locust officer participates in a national survey on the Batinah coast of Oman during April 2011, and one Omani participates in the joint survey on the Iranian coast;
3. designate at least two Locust Information Officers;
4. provide evidence of annual contributions to the Trust Fund that have been made up to now.

Pakistan:

1. nominate Joint Survey participants no later than 15 February and obtain security clearance no later than 15 March;
2. the recharging of Satphones used during the Joint Survey should come from GOE;
3. provide more detailed information in the monthly India/Pakistan border meeting reports, including situation maps;
4. consider deactivating eLocust2 units when they are not to be used for several months, and prepare a schedule accordingly;
5. designate at least two Locust Information Officers;
6. finalize and distribute as soon as possible the translation of the overhead transparencies in the *FAO Desert Locust Master Trainer Manual* as well as the *FAO Standard Operating Procedures* in the appropriate local languages;
7. provide evidence of annual contributions to the Trust Fund that have been made up to now.

FAO:

1. provide appropriate training, preferably to the nationally designated Master Trainer; whenever new technologies are introduced that can be used during the joint survey;
2. establish a website should for the Commission and maintain it;
3. provide additional eLocust2 units to India (19) and Pakistan (10) to ensure that every survey and control team is properly equipped and there is a small standby stock;
4. the Secretary of the Commission should assist Master Trainers in India (2011) and Pakistan (2012) to conduct a national Training-of-Trainer workshop in order to increase the number of national trainers in each country;
5. develop and make available online self-learning training modules on Desert Locust survey, control, reporting and planning to member countries;
6. two Afghani Master Trainers should be trained in Tehran, I.R. Iran by Iranian Master trainers for 10 days in June or July 2011;
7. procure:
    a. one Nissan 4x4 vehicle locally in the I.R. Iran for use in locust activities;
    b. one desktop PC and printer locally for the Plant Protection Department in Afghanistan;
8. provide information to each country about *Metarhizum*;

9. inform the FAO Financial Unit that the mission to Pakistan by the Locust Information Officer in India did not occur and adjust accounts accordingly;
10. inform the FAO Representation and the Plant Protection Department in each country when the annual Call of Funds is issued by FAO;
11. seek clarification about the arrears of Pakistan and I.R. Iran and try to obtain FAO documentation indicating the years in which contributions were not paid;
12. provide a copy of the Commission treaty to member countries for review and suggestions for updating;
13. sponsor (from the SWAC Trust Fund) the participation of the Chairman and Vice-Chairman as well as the Deputy Director (Locust, Jodhpur, India) and the Plant Protection Director for Afghanistan at the 40th session of the DLCC to be held in Cairo on 6-10 March 2011.

Opening

1. The opening of the 27th Session commenced with a recitation from the Holy Quran.

2. On behalf of the outgoing Chairman of the FAO Commission for Controlling the Desert Locust in South-West Asia, Mr. Abdul Ghafar Ahmadi (Afghanistan) welcomed the honourable delegates of the Commission's Member Countries, the FAO Representative and the FAO staff, and all the participants to the opening ceremony of the 27th Session. He mentioned that activities under the auspices of the Commission help to protect Afghanistan from Desert Locust invasion. He encouraged delegates to participate actively in the current session.

3. Mr. Keith Cressman, FAO Senior Locust Forecasting Officer at FAO Headquarters in Rome and Secretary of the Commission, reminded participants that SWAC is the oldest of the three FAO Desert Locust commissions, having been established nearly 50 years ago from a recommendation at a special meeting in Tehran of locust-affected countries in the Region. He stressed the importance of cooperation in information exchange, early warning and preventive control. The Iran/Pakistan joint border survey, India/Pakistan monthly border meetings during the summer, regional workshop and visits to member countries by regional experts illustrate the cooperation that has been achieved within the Commission. He reviewed the agenda items to be discussed at this session. Lastly, he warmly thanked the Government of Pakistan for hosting the 27th session and the good efforts made in organizing the meeting.

4. Mr. Kevin Gallagher, the newly appointed FAO Representative, on behalf of the Director-General, welcomed the delegates of the Member Countries and thanked the Government of Pakistan for hosting the 27th Session and noted that the last time the Government hosted a session was in December 2002 (23rd session). He said that FAO is an organization of more than 180 member countries to protect food security. The Commission is a mechanism that allows countries to collaborate and cooperate on technical issues involving Desert Locust early warning and control in order to prevent the development of locust upsurges and plagues. Although locust outbreaks do occur from time to time, the most recently this past summer and autumn along the Indo-Pakistan border, we have seen that they have been controlled successfully in this Region, thereby preventing the development of swarms within the Region and migration to the Central Region. This could not be achieved without the good support and collaboration of the countries working together with FAO within the Commission. FAO will continue to provide support and leadership to each Member Country directly and through the Commission. He reminded participants that their decisions from this session and the activities proposed for 2011-12 will have an impact on countries beyond this Region and will affect the success of preventing locust plagues.

5. The Federal Minister for Food and Agriculture, Mr. Nazar Muhammad Gondal, officially opened the 27th Session and welcomed the distinguished delegates of Afghanistan, India, I.R. Iran and Pakistan, and the FAO staff. He indicated his immense pleasure in addressing the Commission. He reminded participants of the devastating nature of Desert Locust as it is considered the primary pest that threatens agriculture and food security in Pakistan. He complimented the recent efforts of the Department of Plant Protection in controlling the outbreak along the Indian border last summer. He was also appreciative of the Commission's efforts in fighting this pest and thanked FAO for its collaboration and provision of technical assistance. He indicated Pakistan's willingness to offer its spray aircraft for survey and control operations in member countries of the Commission.

Elections

6. The Member Countries elected Pakistan as Chairman of the current Session and I.R. Iran as Vice-Chairman. The elections were accepted with acclaim. A list of participants and observers is presented in Annex 1.

7. The Chairman presented a draft agenda that was adopted after incorporating additions to agenda item seven (India/Pakistan border meetings and the new version of RAMSES), a new agenda item

on biopesticides, and including DLCC participation and updating the Commission's treaty in Other Business (Annex 2).

8. The Session entrusted the drafting of the report to the Secretary of the Commission.

Desert Locust Situation: December 2008 – December 2010 and forecast to spring 2011

9. The Secretariat prepared a working paper and gave a presentation that reviewed the Desert Locust situation since the 26th Session (Annex 3). In 2009, the Desert Locust situation remained calm due to poor monsoon rains. In June, the region was threatened by a potential swarm invasion from the Horn of Africa that fortunately did not materialize. In I.R. Iran, ground teams treated 5,500 ha of hopper groups that arise from local breeding. In 2010, heavy rains associated with Cyclone Phet fell in June from Baluchistan, Pakistan to the summer breeding areas along both sides of the Indo-Pakistan border. Local breeding during the summer caused locust populations to increase and gregarize. Ground control operations commenced in mid-September against a few swarms and adult groups in Pakistan. Operations continued until early-December against hopper bands and adult groups, treating more than 14,000 ha in Pakistan and nearly 5,000 ha in India.

10. The locust situation during the next six months will depend on the timing, location and scale of rainfall in the spring breeding areas of western Pakistan and southeast I.R. Iran. Source populations this year are expected to be larger than in most years because of the extent of breeding that occurred along both sides of the Indo-Pakistan border during the summer of 2010. The results of a special survey conducted during December 2010 in the spring breeding areas indicated that only low numbers of solitarious adults were present. Seasonal predictions suggest that rainfall will be lower than normal and temperatures will be higher than normal during this spring. Hence, only one generation of limited breeding can be expected if and when rains fall and temperatures warm up (usually about March). The Iran/Pakistan joint survey should be able to confirm the actual situation in April from which plans can be drawn up for the scale and timing of operations in the summer breeding areas.

11. The delegates expressed concern about the sudden and unexpected increase in locust numbers, including a mature swarm, in mid-September 2010 because locust surveys only found low numbers of scattered adults during August and early September. This may suggest that there are gaps in survey coverage or that the current survey methodology does not provide an accurate indication of the real situation.

12. The Indian delegate said it was not possible to survey all areas in 2010 because of a lack of sufficient staff, inaccessibility of some areas, and unusually high temperatures. He felt that the lights along the border could help to explain why locust infestations were distributed along the border west of the Rajasthan canal.

13. The Secretary of CRC clarified that the recommended dose for Fenitrothion 98% ULV is 0.5 litre/ha and that Diazinon is effective only against adults.

Recommendation 1. In order to improve survey and control operations, member countries should ensure that:

(a) India should make every attempt to improve the coverage of surveys and increase the number of areas that are checked, especially those areas near the Pakistani border and in Jaisalmer, Bikaner and Barmer districts;

(b) surveys should be supervised to ensure that the proper methodology is being utilized by field officers;

(c) foot transects use a variable width (rather than a fixed width) that is determined by the distance in which locusts are disturbed (see *FAO Desert Locust Guidelines II. Survey*, page 15);

(d) verified dose rates of pesticides shown to be effective against Desert Locusts are used in appropriately calibrated spray equipment (see *FAO Desert Locust Guidelines VII. Appendixes*, page 79)

Report on Joint-Border Surveys during the spring of 2009 and 2010

14. The Secretariat prepared a working paper and gave a presentation on the results of the annual joint border surveys carried out during April in 2009 and 2010 by I.R. Iran and Pakistan. The survey was re-established in 1995 with FAO's help. It is a 34-day survey that starts every year on 1 April. The results are used to plan Indo-Pakistan summer surveys. Due to security concerns, the Iranian team was unable to survey Baluchistan, Pakistan during the first half of the survey in both years. Consequently, the first half of the survey was carried out by Pakistan only while the Iranian and Pakistani team jointly surveyed adjacent areas of I.R. Iran during the second half of the survey. The teams made 131 and 154 stops in 2009 and 2010 respectively, covering more than 12,000 km in both years. A few solitarious adults were seen in 2009 while no locusts were seen in 2010.

15. It was noted that the quality of the final joint survey report declined in 2010, perhaps because the Locust Directors of both countries could not meet the team and finalize the report due to commitments at the Master Trainer workshop, which immediately followed the joint survey.

16. The Session reviewed the recommendations made at the 26th Session regarding the improvement of the survey. All 11 recommendations were implemented satisfactorily.

17. The Session also reviewed the various suggestions made by the teams in both years to improve joint surveys. After a thorough discussion, it was felt that a number of these suggestions should be recommended and implemented for future joint surveys.

Recommendation 2. In order to improve the Joint Survey:

(a) FAO should provide appropriate training, preferably to the nationally designated Master Trainer; whenever new technologies are introduced that can be used during the joint survey;

(b) an Apple laptop and a Windows platform laptop should be procured for I.R. Iran and Pakistan, respectively;

(c) the recharging of Satphones used during the survey should come from GOE;

(d) participants should be nominated no later than 15 February;

(e) security clearance should be received no later than 15 March.

Recommendation 3. The Session strongly reaffirmed the importance of continuing the Joint Survey on an annual basis in the spring breeding areas of I.R. Iran and Pakistan. During periods of insecurity, both teams should conduct a three-week survey (9-30 April) in their own territory. At the end of the survey, the team leaders and national Locust Unit Heads from both countries should meet for three days (2-4 May) in Zahedan, I.R. Iran to exchange data, share experiences and finalize a single joint survey report to be submitted to FAO DLIS no later than 5 days after the last day of the meeting. DSA and GOE rates should remain unchanged.

18. At the 27th Session of the FAO Commission for Controlling the Desert Locust in the Central Region (Beirut, September 2010), it was recommended that one locust officer from Oman participate during the portion of the Iran/Pakistan Joint Survey that is carried out on the coastal plains in I.R. Iran between Chabahar and Bander Abbas. The delegate from I.R. Iran suggested it would be appropriate that a reciprocal survey is carried out with an Iranian locust officer on the northern coast of Oman in the spring of 2011.

Recommendation 4. The Session agreed that one Omani locust officer can participate in the joint survey on the Iranian coast and one Iranian locust officer can participate in a national survey on the Batinah coast of Oman during April. The cost of the participants should be borne by the Trust Fund of their respective commission in the first year and by national sources thereafter.

Information and reporting

19. The Secretariat prepared a working paper and gave a presentation that summarized progress made in improving the quality, timeliness and frequency of reporting by I.R. Iran, India and Pakistan (see Annex 4). Afghanistan was not evaluated because it does not have a locust programme and does not undertake regular surveys. Although countries continue to make every attempt to provide good quality reports with RAMSES data on time and on a regular basis, slight improvements are needed in India and Pakistan.

20. Locust experts from India and Pakistan, including the national locust information officers, meet once a month on the border every year from June to November to exchange information on the locust activities in their respective countries. A short report is prepared after each meeting. It was felt that the report could be more useful and include situation maps. FAO DLIS did not receive all border meeting reports in 2009 and 2010. Border meetings were not held during periods of increased locust activity in October-December 2010.

21. The Secretariat also provided an overview of eLocust2 usage. The Commission pays the operating costs for each of the countries, roughly about US$ 15,000 per year. It was seen that units need to be properly managed by activating and deactivating units when needed. Additional units are required in India (so that there is a total of 40 units present) and Pakistan (so that there is at least 30 units available) to ensure that every survey and control team has a unit. It is important that field officers enter precise data into eLocust2.

22. The Delegates discussed reporting performance during the past two years and attributed some of the causes of the decline in reporting quality and timeliness to the fact that not all teams are equipped with eLocust2, some units were malfunctioning, or staff were not sufficiently trained.

23. It was noted that some countries were not receiving the fortnightly or monthly bulletins of other member countries in the Region. Countries indicated that they only wish to receive softcopies via email.

24. It was emphasized that frontline countries should have at least two designated Locust Information Officers and all efforts should be made to train them.

Recommendation 5. To improve the reporting system:

(a) More detailed information should be provided in the monthly India/Pakistan border meeting reports, including situation maps;

(b) India should send the monthly border reports to FAO DLIS on a regular and timely basis;

(c) India and Pakistan should consider deactivating eLocust2 units when they are not to be used for several months, and prepare a schedule accordingly;

(d) FAO should provide additional eLocust2 units to India (19) and Pakistan (10) to ensure that every survey and control team is properly equipped and there is a small standby stock;

(e) all countries should immediately inform FAO DLIS when eLocust2 units malfunction;

(f) all countries should exchange their fortnightly or monthly bulletins with each member country by email;

(g) frontline countries should designate at least two Locust Information Officers;

(h) two locust information officers from each frontline country should attend the annual SWAC/CRC RAMSES/elocust2 inter-regional workshop in Cairo;

(i) a website should be established for the Commission and maintained by the Secretary.

Training

25. The Secretariat prepared a working paper and gave a presentation reviewing the Master Trainer approach adopted by FAO in support of the strengthening of national locust programmes. In May of 2010, nationally designated Master Trainers from India (1), I.R. Iran (4) and Pakistan (2) were trained by FAO at SWAC/CRC inter-regional workshop in I.R. Iran. Master Trainers from Afghanistan could not attend the workshop.

26. Since the end of the workshop, the Master Trainers in I.R. Iran and Pakistan have organized and conducted a national workshop for 16-17 staff in their country. The Indian delegate mentioned that the nationally designated Master Trainer who attended the workshop could not organize or conduct national training courses due to some confusion regarding the designation of the Master Trainers.

27. Delegates from India and Pakistan recognized the importance of having suitably qualified Master Trainers that are senior enough to impart participatory training on national staff at least two times a year.

Recommendation 6. To improve national training:

(a) India should establish a national training budget for the training of LWO staff;

(b) India should identify a second Desert Locust Master Trainer;

(c) Master Trainers should conduct at least two training courses per year in their country, funded either partially or fully from national resources;

(d) The Secretary of the Commission should assist Master Trainers in India (2011) and Pakistan (2012) to conduct a national Training-of-Trainer workshop in order to increase the number of national trainers in each country;

(e) online self-learning training modules on Desert Locust survey, control, reporting and planning should be developed and made available to member countries;

(f) two Afghani Master Trainers should be trained in Tehran, I.R. Iran by Iranian Master trainers for 10 days in June or July 2011.

Review of recommendations of the 26th Session and progress made

28. The Secretariat prepared a working paper and gave a presentation indicating that good progress had been achieved by the countries and by FAO in completing most of the recommendations made at the last session.

29. The Session reviewed each recommendation and activity that was supposed to be undertaken within the framework of the 2008-10 work plan. Several points were clarified as follows:

(a) Afghanistan MSc. Afghanistan should identify a potential candidate for an MSc degree in entomology with emphasis on locusts for a two-year programme at the University of Agriculture, Faisalabad (Pakistan).

(b) Translations. The translation of the overhead transparencies in the *FAO Desert Locust Master Trainer Manual* as well as the *FAO Standard Operating Procedures* to the appropriate local languages in Afghanistan, India, and Pakistan should be finalized and distributed as soon as possible.

(c) Vehicles. I.R. Iran suggested procuring locally a Nissan 4x4 vehicle.

(d) Computers. The delegate from Afghanistan clarified that a desktop PC with printer was required in the Plant Protection Office in Kabul. All equipment should be procured locally in each country whenever possible.

(e) HF radios. The delegate from India indicated that authorization was being obtained to use the HF radios that were procured by the Commission in 2006. Installation and the provision of suitable training should be done as soon as possible.

Recommendation 7. In follow-up to the recommendations of the 26th session:

(a) Afghanistan should identify a suitable and qualified candidate for an MSc degree in entomology with emphasis on locusts at the University of Agriculture, Faisalabad (Pakistan);

(b) Translations of the overhead transparencies in the *FAO Desert Locust Master Trainer Manual* as well as the *FAO Standard Operating Procedures* to the appropriate local languages in Afghanistan, India, and Pakistan should be finalized and distributed as soon as possible;

(c) A Nissan 4x4 vehicle should be procured locally in the I.R. Iran for use in locust activities;

(d) A desktop PC and printer should be procured locally for the Plant Protection Department in Afghanistan;

(e) The Codan HF radios should be installed without further delay in India and training provided.

Biopesticides

30. There was a general discussion about the uses and advantages of *Metarhizum*, a fungal-based biopesticide, in Desert Locust control operations. Although *Metarhizum* may not give a quick result as locusts stop eating after two days and start to die after one week, it is a suitable alternative to chemical pesticides, especially in environmentally sensitive areas (national parks and near water bodies) and in other places such as near bee-keepers and grazing animals. It may also only be suitable against small infestations that are commonly present at the initial stages of outbreaks. A number of locust-affected countries such as Sudan, Yemen, Ethiopia, Somalia, Tanzania and Mauritania are already using *Metarhizum* successfully.

31. The delegates expressed their interest in introducing *Metarhizum* into their national locust control programmes if suitable information can be provided about its use, once it has been demonstrated to be effective and after it has been registered in their country.

Recommendation 8. In order to make locust control operations safer:

(a) The CRC Secretary should provide information to each country about *Metarhizum*;

(b) Countries should try to introduce *Metarhizum* and use it in Desert Locust control operations when appropriate.

Accounts for 2008-2010

32. The Secretariat presented a working paper on the final accounts for 2008 and 2009 and the indicative expenditures for 2010 as of 31 December 2010 (Annex 5). Explanations were given of the overall financial situation as well as detailed expenditures. The final financial expenditures for 2008 were US$63,511 compared to US$56,609 reported at the 26th session up to 25 November 2008. The 26th Session approved a budget of US$ 267,750 for 2009-2010. The expenditures for 2009 were US$ 119,040 and the expenditures for 2010 were US$ 48,690. Therefore, the total expenditures for 2009-2010 were US$ 167,730, which is well short of the approved budget.

Considering the contributions that were made by Member Countries in 2008-2010, the current balance of the Trust Fund is US$ 135,856, which is nearly the same as the balance reported at the 26th Session.

33. The presentation included the overall position of contributions received from Member Countries. Trust Fund records show that no payments were received from Pakistan in 2008 and from Afghanistan in 2010. I.R. Iran and India paid their contributions regularly every year from 2008 to 2010. No progress was made on the substantial arrears of I.R. Iran (US$ 320,002) and Pakistan (US$ 85,776).

34. The Session questioned the expenditures in 2008 of the visit by the Locust Information Officer from India (P. Gour) to Pakistan as it was thought that this mission had been postponed indefinitely.

> **Recommendation 9.** The Secretary should inform FAO Financial Unit that the mission to Pakistan by the Locust Information Officer in India did not occur and accounts should be adjusted accordingly.

35. The delegate from Afghanistan noted that the Call for Funds in 2010 was not received and requested the Secretary to follow up this matter.

> **Recommendation 10.** The Secretary should inform the FAO Representation and the Plant Protection Department in each country when the annual Call of Funds is issued by FAO.

36. The delegate from I.R. Iran indicated that the equivalent of US$ 25,000 will be paid in local currency to the FAO Representation in Tehran and up to US$ 100,000 can be paid from any extra funds available at the end of the fiscal year (March 2011). These payments should help to reduce the arrears.

37. The delegates from India, I.R. Iran and Pakistan indicated the difficulty in ascertaining that contributions have been made.

> **Recommendation 11.** Member Countries and FAO should provide evidence of annual contributions to the Trust Fund that have been made up to now. The Secretary, in turn, should seek clarification about the arrears of Pakistan and I.R. Iran and try to obtain documentation indicating the years in which contributions were not paid.

Work Plan for 2011-2012

38. Member Countries identified their priorities for expenditures in 2011-12 and, after some discussion, a list of standard, carry-over (from the 2009-10 work plan) and new items was **agreed** on for a total expenditure of about US$ 268,500 plus support costs (Annex 6):

(a) Standard expenditures

IRN/PAK Joint Survey. The costs associated with travel, DSA and GOE of the annual survey.

Session travel and GOE. The costs associated with the 28th Session of the Commission.

eLocust2 transmission. The costs associated with the subscription, activation and data transmission were increased by US$ 15,000 to reflect the increased usage of and reliance on eLocust2 during survey and control operations.

National training. Support is given to national training programmes to allow Master Trainers to conduct national training courses. This is not meant to substitute or replace national training budgets but to support countries in conducting training courses regularly.

RAMSES/eLocust2 workshop. The costs associated with the participation of two locust information officers each from India, I.R. Iran and Pakistan at the annual SWAC/CRC inter-

regional workshop held in Cairo during April. As this is a specialized workshop, only the indicated individuals will be invited to participate.

New technology support. Support is provided to the development, introduction, use and maintenance of new technologies such as RAMSES v4.

(b) Carry-over expenditures from the 2009-10 work plan

MSc training. In order to build the technical capacity of Afghanistan in locust management, funds are allocated to train one person at the MSc degree in entomology with emphasis on locusts for two years at the University of Agriculture, Faisalabad (Pakistan).

Desert Locust Master Trainer Manual and Standard Operating Procedures translation. Both documents are to be translated into the appropriate local languages in India, Pakistan and Afghanistan, and distributed.

Computers. A desktop computer for general use and a printer should be purchased locally for the Plant Protection Department in Afghanistan.

HF radio installation and training. The local Codan agent (or equivalent expertise) in India should be requested to install the HF radios that were purchased with Trust Funds in 2005 and training should be provided to users. Authorization to use the radios should be obtained.

Vehicles. A 4x4 Nissan should be purchased locally for I.R. Iran to be used in Desert Locust survey and control operations.

Desert Locust Master Trainers – Afghanistan. Iranian Master Trainers should train two Master Trainers from Afghanistan for ten days in Tehran in June or July 2011 since they could not attend the SWAC/CRC inter-regional workshop in I.R. Iran in May 2010.

(c) New expenditures

Computers. A laptop should be procured locally for Pakistan and India that will be used during the annual Joint Survey and at the monthly Border Meetings with India in the summer. An Apple laptop should be procured for I.R. Iran that will be used by the locust section at the Plant Protection Organization.

DLCC participation. The Commission will sponsor the participation of the Chairman and Vice-Chairman as well as the Deputy Director (Locust, Jodhpur, India) and the Plant Protection Director for Afghanistan at the 40th session of the DLCC to be held in Cairo on 6-10 March 2011. It is expected that this sponsorship will continue in future years to ensure adequate and appropriate participation at the DLCC sessions.

CRC survey participation. In order to encourage cooperation between countries and regions, one Iranian locust officer should participate in a survey of Desert Locust breeding areas along the northern coast of Oman in the spring of 2011. In exchange, one Omani locust officer should participate in the joint survey between Chabahar and Bandar Abbas in April 2011, sponsored by the FAO Commission for Controlling the Desert Locust in the Central Region (CRC).

SWAC web site. A web site for SWAC should be developed, updated and maintained with relevant information material from member countries. Ideally, the site should be hosted at FAO Headquarters and the Secretary should be responsible for updating it.

Online training / self-learning. Online and offline self-learning training modules on Desert Locust biology, survey, control, reporting and planning should be developed and made available to member countries.

National ToT. In collaboration with the Secretary, the nationally designated Master Trainer(s) should conduct a workshop to train 10-16 potential trainers in India (2011) and Pakistan (2012).

39. The budget for the Trust Fund in 2011-2012 according to the expenditures listed above is shown in Annex 7.

Any Other Business

40. The Secretary informed the delegates that the current treaty of the Commission is somewhat outdated and should be reviewed, considering that the primary topic of the 40th Session of the DLCC is the regional locust commissions. This topic should also be considered at the next session of the Commission.

> **Recommendation 12.** The Secretary should provide a copy of the Commission treaty to member countries for review and suggestions for updating.

> **Recommendation 13.** The Commission should sponsor the participation of the Chairman and Vice-Chairman as well as the Deputy Director (Locust, Jodhpur, India) and the Plant Protection Director for Afghanistan at the 40th session of the DLCC to be held in Cairo on 6-10 March 2011. It is expected that this sponsorship will continue in future years to ensure adequate and appropriate participation at the DLCC sessions.

41. The delegate from Pakistan indicated that Pakistan's aerial capacity in Desert Locust survey and control can be made available to other locust-affected countries in the recession area. Currently, four aircraft are operational out of a fleet of 20. He will provide technical details to FAO as well as a project proposal for external funding to overhaul several aircraft engines.

Date and Place of the Next Session

42. The Secretariat explained that, according to tradition, Session venues were rotated amongst the Member Countries. The delegate from India said that his country would be pleased to host the 28th Session in December 2012, subject to approval being obtained from his Government. Alternatively, if for some reason this was not possible, the delegate from I.R. Iran agreed that the Session could be hosted in his country.

Adoption of the Report

43. The Report, with the agreed amendments, was adopted unanimously with acclaim.

Closure of the Meeting

44. Each of the delegates from the member countries thanked the Government of Pakistan for hosting the session and the excellent arrangements made for their stay.

45. Mr. Cressman, on behalf of FAO, expressed his deep gratitude to the Government of Pakistan for agreeing to host this session and to colleagues in the Department of Plant Protection as well as to staff of the FAO Representation for their untiring efforts in making the necessary arrangements for the session that had allowed the meeting to proceed smoothly. He thanked the delegates and all the participants for their frank contributions towards a successful and useful meeting, which had produced meaningful and practical recommendations that will contribute to effective locust early warning and prevention.

46. The Chairman, Mr. Tasneem Ahmad, thanked the member country delegates for their contributions to the discussions. He acknowledged the dedicated commitment of the FAO Secretary to the Commission and was thankful for his tireless efforts during the Session. He emphasized that if the decisions agreed upon during the Session are implemented in a timely manner by all parties, then this will help to strengthen further national capacities in member countries and in the Region. He wished everyone a safe journey home and declared the Session closed.

Annexes

Annex 1. List of Participants

AFGHANISTAN Abdul Ghafar Ahmadi
Director of Plant Protection and Quarantine Department
Ministry of Agriculture, Irrigation and Livestock
Kabul
Mobile: +93-799820548
Email: ahmadi_ghafar@yahoo.com

INDIA S.P. Gupta
Deputy Director (Entomology)
Directorate of Plant Protection, Quarantine and Storage
Jodhpur
Tel: +91-129-212671749
Mobile: +91-9460860626
Email: lwo-jod-rj@nic.in

I. R. IRAN Mehdi Ghaemian
Assistant Director for Controlling General Pests
Plant Protection Organization
No. 2, Yemen Avenue, Evin, Tehran
Tel: +98-21-22403198
Mobile: +98-9121028930
Email: mehdi.ghaemian@gmail.com

PAKISTAN Tasneem Ahmad
Director-General
Department of Plant Protection
Ministry of Food, Agriculture & Livestock
Jinnah Avenue, Malir Halt, Karachi-27
Tel: +92-21-99248607
Mobile: +92-300-9215560
Email: dg1@plantprotection.gov.pk

FAO Keith Cressman
Senior Locust Forecast Officer / Secretary, SWAC
Locust and Other Migratory Pests Group, AGP
Rome, Italy
Tel: +39-06-57052420
Email: keith.cressman@fao.org
Email: eclo@fao.org (reporting)
Web: www.fao.org/ag/locusts

Munir Butrous
Secretary, Central Region Commission (CRC)
Cairo, Egypt
Tel: +20-2-33316018
Mobile: +20-10-1590590
Email: munir.butrous@fao.org
Web: www.crc-empres.org

Other participants from Department of Plant Protection, Pakistan

Muhammad Akbar Zardari
Director Technical
Karachi

Muhammad Azam Khan
Deputy Director
Karachi

Shahid Abdullah
Entomologist
Islamabad

Dr. Muhammad Ishfaque
Entomologist
Lahore

Fakhar-Ul-Zaman
Entomologist
Bahawalpur

Ghulam Qadir Lund
Entomologist
Karachi

Sundas Rana Qureshi
Entomologist
Islamabad

Shahbaz
Assistant Entomologist
Karachi

Muhammad Rafique
Lower Division Clerk
Islamabad

Shakeel-Ur-Rehman
Photographer
Karachi

Annex 2. Agenda

Opening

1. Welcome
2. Election of the Chairman and Vice-Chairman of the Commission
3. Adoption of the agenda
4. Election of the Drafting Committee

Technical issues

5. Desert Locust situation (December 2008 – December 2010) and forecast to spring 2011
   Discussion: implications for planning operations

6. Report on Joint-Border Surveys during the spring of 2009 and 2010
   Discussion: the impact of continued insecurity on future surveys

7. Information and reporting
   Discussion: improving national reporting and intra-regional collaboration

8. Training
   Discussion: status and improvement of national training programmes

9. Review of recommendations of the Twenty-sixth Session and progress made
   Discussion: follow-up of outstanding recommendations

10. Biopesticides
    Discussion: improving the safety of control operations

Financial issues

11. Accounts for 2008-2010 and work plan for 2011-2012
    Discussion: managing arrears and identifying activities for 2011-2012

Closing

12. Any other business
    Discussion: DLCC participation, updating the SWAC treaty

13. Date and place of the next session
14. Adoption of the report

Annex 3. Desert Locust Situation for December 2008 – December 2010 and forecast to spring 2011

1. Overview

In 2009, the Desert Locust situation remained calm due to poor monsoon rains. In June, the region was threatened by a potential swarm invasion from the Horn of Africa that fortunately did not materialize. In I.R. Iran, ground teams treated 5,500 ha of hopper groups that arise from local breeding.

In 2010, heavy rains associated with Cyclone Phet fell in June from Baluchistan, Pakistan to the summer breeding areas along both sides of the Indo-Pakistan border. Local breeding during the summer caused locust populations to increase and gregarize. Ground control operations commenced in mid-September against a few swarms and adult groups in Pakistan. Operations continued until mid-December against hopper bands and adult groups, treating more than 14,000 ha in Pakistan and nearly 5,000 ha in India.

2. Locust situation from December 2008 to December 2010

Using the SWARMS geographic information system at FAO Rome, DLIS summarizes the locust situation based on an in-depth analysis of reports and data received from Member Countries, combined with remote sensing imagery of estimated rainfall and green vegetation, the use of egg and hopper development and trajectory models, and comparison with historical data. A diagrammatic view of the situation is presented in Figure 1. Control operation totals are provided in Figure 2.

Spring 2009

No locusts were reported in the Region from December 2008 to February 2009. In March, low numbers of mature solitarious adults appeared in coastal (Uthal) and interior (Kharan) areas of Baluchistan, Pakistan. During April, scattered immature adults were present in Baluchistan (Kharan, Panjgur) where small-scale breeding occurred and ground teams treated 10 ha. In Iran, mature adults were seen in the Jaz Murian Basin. During May, adults matured near Kharan and on the coast near Gwadar and Pasni, while small-scale breeding occurred in the western Jaz Murian that continued into June when hoppers formed a few small groups at densities of 15 hoppers/m^2. Ground teams treated 5,500 ha in I.R. Iran during June.

Summer 2009

In July, isolated mature solitarious adults appeared in the summer breeding areas of Pakistan from Tharparkar to Cholistan. The adults in Cholistan persisted until October. A few mature adults were seen in Rajasthan, India on the Pakistani border west of Barmer in August. No locusts were seen in the summer breeding areas after September due to poor monsoon rains.

Spring 2010

In February, isolated solitarious mature adults were seen in coastal areas of Baluchistan near Pasni and Uthal. The adults in Uthal persisted during March while other solitarious adults were found in the Shooli Valley. No locusts were seen in the spring breeding areas of Pakistan and Iran after March due to unusually dry conditions.

Summer 2010

During the last week of June, isolated mature solitarious adults were seen at two places in Cholistan near the Indian border. Detailed data was not received from Pakistan during June and July, which did

not allow FAO DLIS to provide sufficient warning to India and Pakistan about an increase in locust activity that could lead to gregarization and the formation of hopper bands and swarms. Good monsoon rains fell during from July to mid-September along both sides of the border, causing ecological conditions to become favourable for breeding. Mature adults were present in Cholistan, Pakistan in July. During August, low numbers of solitarious adults were present along the Indian border in Cholistan and Khairpur and, to a lesser extent in Sukkur and Tharparkar. Small-scale breeding occurred in Cholistan in early August. In India, only isolated immature adults were seen near the border west of Barmer.

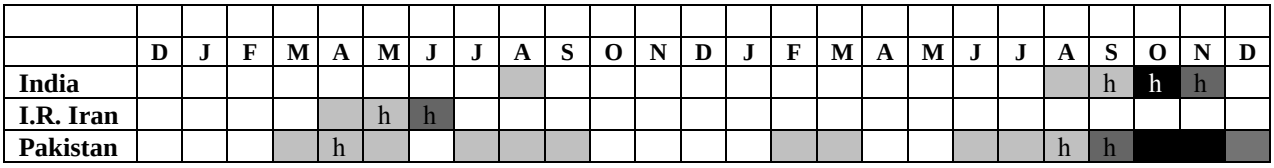
During September, locust numbers increased in Cholistan as more locusts were seen in a greater number of places. On 15-19 September, a few small groups of mature adults appeared just inside Pakistani territory and laid eggs in Ghotki district. Ground teams treated 900 ha. In India, small-scale breeding occurred in parts of Rajasthan. Although scattered solitarious hoppers and adults were reported from several places, most of the infestations were concentrated along the Pakistani border north of Jaisalmer where adults were laying eggs.

During October, locust numbers suddenly increased along both sides of the border as eggs hatched in Ghotki and, to a lesser extent, in Bahawalpur districts in Pakistan, and Jaisalmer and Bikaner districts in India (CHECK). As vegetation dried out, hoppers concentrated and formed small groups and bands, and adults formed groups. During the last decade of the month, there were several reports of medium to high-density immature swarms of 1-9 km^2 in size near Ghotki. Both countries mobilized ground teams, treating 8,544 ha in Pakistan and 4,330 ha in India.

During November, groups of late instar hoppers were present along the Indian border south of Rahimyar Khan, Pakistan. Groups of immature solitarious, transiens and gregarious adults were present near Ghotki, and low numbers of solitarious adults were seen in Bahawalpur district of Cholistan. In India, immature solitarious and transiens adults were present near the border north of Jaisalmer and late instar solitarious hoppers were seen at one place nearby. As a result of continuing ground control operations (4,160 ha in Pakistan, 370 ha in India) and drying conditions in both countries, locust numbers had declined by the end of the month.

In early December, control operations (600 ha) continued against a few groups of late instar hopper and maturing adults that persisted in Pakistan along the border south of Rahimyar Khan.

Figure 1. Desert Locust infestations and breeding from December 2009 to December 2010



shading: solitarious (light), groups (medium), gregarious (dark) adults
h = hoppers

Figure 2. Desert Locust control operations from December 2009 to December 2010

	Apr-09	Jun-09	Sep-10	Oct-10	Nov-10	Dec-10	total
India	0	0	0	4,330	370	0	**4,700**
I.R. Iran	0	5,500	0	0	0	0	**5,500**
Pakistan	10	0	900	8,544	4,160	600	**14,204**
total	**10**	**5,500**	**900**	**12,874**	**4,530**	**600**	**25,404**

3. Outlook until summer 2011

The locust situation during the next six months will depend on the timing, location and scale of rainfall in the spring breeding areas of western Pakistan and southeast I.R. Iran. Source populations this year are expected to be larger than in most years because of the extent of breeding that occurred along both sides of the Indo-Pakistan border during the summer of 2010. Despite good survey and control operations, there is always a possibility that some infestations were not detected or controlled. Consequently, there is a chance that adults, groups of adults and perhaps a few small swarms will have moved west to the spring breeding areas during December, appearing mainly in coastal areas. If the region is extremely dry, then the adults, especially if they are gregarious, are likely to continue further west and southwest to the Central Region.

The results of surveys conducted during December in the spring breeding areas should clarify the situation. If adults do indeed reach the spring breeding areas, then one generation of breeding can be expected if and when rains fall and temperatures warm up (usually about March). If summer-bred adults do not reach the spring breeding areas or if rains are unusually poor, then only low numbers of locusts are likely to persist and no significant developments are likely. The Iran/Pakistan joint survey should be able to confirm the actual situation in April from which plans can be drawn up for the scale and timing of operations in the summer breeding areas.

At this point, there is no risk of an invasion from the Central Region.

4. Discussion points

Survey results from Pakistan and India indicated that the situation was calm until mid-September when suddenly groups of locusts appeared near the border in Pakistan. Initially, it was difficult to believe that groups could form from the few scattered locusts seen by survey teams. Two weeks later, there was an even more dramatic shift as locust numbers suddenly increased when eggs began to hatch in Ghotki and Bahawalpur districts in Pakistan and Jaisalmer district in India. It was clear that the teams did not detect all of the areas of breeding and it was not evident from the survey results that locust populations were increasing. **The Session should examine reasons for the sudden and undetected increase in locusts and identify ways to reduce such occurrences in the future.**

Annex 4. Report on Joint-Border Surveys during the spring of 2009 and 2010

1. Introduction

The nineteenth session of the FAO Commission for Controlling the Desert Locust in Southwest Asia (SWAC) recommended that the *Desert Locust Joint Survey in the Spring Breeding Areas of the I.R. Iran and Pakistan* be re-established and undertaken on an annual basis. Since 1995, the survey has been carried out every year during April for about 30 days by a joint I.R. Iran / Pakistan team. In the early years, the SWAC Secretary assisted in the organization of the survey and participated in it in the field. These responsibilities were transferred gradually to the national locust units in each country. The Secretary participates in only a portion of the survey when it is deemed necessary from a technical viewpoint as a means of improving survey methodology and reporting.

More recently, insecurity has disrupted the portion of the joint survey that is carried out in Pakistan. There also has been somewhat a decline in the quality of the final report. In order to guarantee the sustainability and effectiveness of future joint surveys, these issues should be addressed by this Session.

2. Survey results

In 2009 and 2010, the Iranian team could not participate in the first half of the survey in Baluchistan, Pakistan because they did not receive security clearance from the Ministry of Interior in Pakistan. Consequently, the first half of the survey was only carried out by the Pakistani team while the second half in I.R. Iran was carried out by both teams. In both years, the survey was carried out of a period of 34 days from 1 April to 4 May. The team used eLocust2 for recording their observation and transmitting them to the respective national locust centre. Data was also entered on the *FAO Desert Locust Survey & Control Form* and into the Joint Survey Database which was installed on the Iranian team's Flybook laptop. A GPS version of the dynamic greenness map was prepared by M. Ghaemain for the joint team. Both new tools were found to be useful. At the end of the survey, the team met with National Locust Unit Heads of the two countries in Zahedan to discuss the results. In 2010, the meeting was held at the end of the Inter-regional Master Trainers workshop in Ramsar, I.R. Iran and was attended by the Secretary of the Commission.

2009. The Pakistani team made 66 stops and covered a distance of 6,880 km during the first half of the survey in Pakistan. The joint team made 65 stops in I.R. Iran and covered 5,880 km during the second half of the survey. Only low numbers of solitarious adults were seen in the interior of western Pakistan and, to a lesser extent, in the interior of southeast Iran and at one place on the coast. The joint team traveled as a single team for security purposes but then split up into two at each survey site so that their sample covered a large area.

2010. The Pakistani team made 74 stops and covered a distance of 6,500 km during the first half of the survey in Pakistan. The joint team made 80 stops in I.R. Iran and covered 6,150 km during the second half of the survey. No locusts were seen in either country because of poor rainfall, low soil moisture and dry vegetation. Consequently, a few more stops could be made in the same period of time.

	2009	2010
Distance covered in Pakistan	6,880	6,500
Distance covered in I.R. Iran	5,880	6,150
Total distance (km)	12,760	12,650
Number of stops in Pakistan	66	74
Number of stops in I.R. Iran	65	80
Total stops	131	154
Number of days in Pakistan	17	17
Number of days in I.R. Iran	17	17
Total days	34	34

It should be noted that FAO DLIS did not receive the survey results as a RAMSES export file (Excel spreadsheet) from the Joint Survey carried out in 2010. It was also unclear if eLocust2 was used throughout the first half of the survey carried out in Baluchistan, Pakistan.

3. Future improvements and concerns

The status of the recommendations made at the 26th Session (see Appendix 1) pertaining to the joint survey should be reviewed by the 27th Session in order to determine if the two countries and FAO were able to implement them successfully and, if not, to identify the cause and further need for the recommendation.

In both years, the joint survey team provided a short list of suggestions for improving future joint surveys (see Appendix 2). These suggestions should be reviewed by the Session in order to recommend which ones to adopt and implement.

For future sustainability, the primary concern of the joint survey is the security situation in Baluchistan, Pakistan. For the past two years, the Iranian team has not been able to participate in the first half of the survey. Although it is hoped that the security situation will improve, several decisions will need to be taken by the Session:

a) Is it worthwhile technically and politically to continue the annual joint surveys, or should they be replaced by national surveys funded under national programmes?
b) If the joint survey is to continue but the security situation does not improve in Pakistan, should the Commission Trust Funds support the entire survey or only the portion that is jointly carried out?
c) What can Member Countries do so that the Pakistani side can be surveyed jointly?

Appendix 1. Joint survey recommendations from the 26th Session

In order to improve the annual I.R. Iran/Pakistan Joint Survey in the spring breeding areas:

(a) the experts participating in the joint survey must be experienced and well informed of survey procedures as indicated in the *FAO Desert Locust Guidelines*;
(b) drivers from both countries must be familiar with driving in desert areas and off-road conditions;
(c) three drivers and one mechanic-driver should be nominated by Pakistan, and the latter person should carry an essential tool kit for immediate repair of vehicles to avoid interruption of the survey;
(d) two days of survey are added to allow an extra day of survey each in the Kharan Valley (Pakistan) and in the Jaz Murian Basin near Kanoj (I.R. Iran);
(e) the border meeting on the last day of the survey in Zahedan should be extended by an extra day to allow sufficient time for discussion between the two Locust Heads and the team, and for the Pakistanis to cross the border before it closes;
(f) custom maps showing place names and vegetation in Pakistan and I.R. Iran are prepared by Mehdi Ghaemian for use on a laptop computer during the survey;
(g) all of the survey equipment, including eLocust2, should be checked before the survey to ensure that they are in good working condition;
(h) FAO should prepare guidelines in the form of *Standard Operating Procedures (SOP) for the Desert Locust Joint Survey in the Spring Breeding Areas of the I.R. Iran and Pakistan* to be used for training prior to the survey and for reference during the survey;
(i) the team should not be required to use RAMSES during the survey; instead, they should record data in eLocust2 as well as in a database (to be developed by Mehdi Ghaemian) on the Flybook laptop;
(j) appropriate spare parts are purchased prior to the survey and carried with the team to be used for any repairs as necessary during the survey;
(k) maintain the current DSA rates but increase the GOE for each country to account for increases in fuel prices and the need for spare parts.

Furthermore, FAO should implement the following recommendations:

(a) The FAO Representation in I.R. Iran should provide the Plant Protection Organization with the full amount of the general operating expenses earmarked for the annual Joint Survey no later than 1 March of every year.
(b) The annual general operating expenses for the I.R. Iran/Pakistan Joint Survey should be increased by US$ 1,000 for each country.
(c) A laptop computer should be procured for Pakistan to be used during the annual Joint Survey and at the monthly Border Meetings with India in the summer, and an extra battery for the existing Flybook laptop in Pakistan.

Appendix 2. Suggestions for joint survey improvements from the 2009 and 2010 team

2009	2010
1. The survey should be continued in the coming years to assess the locust situation and any possible migration from across the Persian Gulf.	1. The joint survey should be continued in the coming years to monitor Desert Locust activity on both sides of the border and to watch for any possible migration of locust populations from across the Persian Gulf
2. Training at regional level should be organized and assisted by FAO for staff of plant protection organization of both countries to meet any emergency and to become familiar with locust survey and control methods and on the use of GPS, eLocust2, laptop computer and other equipment provided by FAO.	2. Whenever new technologies become available, FAO should organize workshops to train the joint survey officers of both countries
3. Mr. Ghaemian should prepare custom maps for the laptop and GPS that cover the Pakistani side.	3. Mr. Ghaemian should prepare custom maps for the laptop and GPS that cover the Pakistani side.
4. Keeping in the view of the tough desert job and the high inflation rate, the DSA may be enhanced by 50%.	4. Keeping in the view of the tough desert job and the high inflation rate, the DSA may be enhanced by 50%.
5. Whenever locust control operations occur in either country, the locust officers of DPP and PPO should be invited to participate in order to gain more experience. This activity should be sponsored by FAO.	5. Whenever locust control operations occur in either country, a team of locust officers of the DPP and PPO should be invited to participate in order to gain more practical experience. The activity should be sponsored by SWAC.
A. Regular national surveys of winter/spring breeding areas of southern Baluchistan should be carried out in both countries from at least 1 February to 31 May every year to check the activity and movement of locusts from across the Persian Gulf.	A. GPS units previously provided to Pakistan are now obsolete because their memory batteries have been exhausted. FAO should provide at least two new GPS units to be used during the routine national locust survey as well as the joint survey.
B. At least one of the two locust experts from each country should be the nationally designated locust information officer. This person would be useful because he knows the latest situation, data recording, reporting, computers, GPS, eLocust2, new technologies and preparing the final report.	B. If possible, the Flybook in I.R. Iran should be repaired; otherwise, it should be replaced with a Netbook laptop PC. An external drive and extra battery should be ordered for the new Flybook provided to Pakistan by SWAC.
C. At least one of the four drivers should be a mechanic who will also be responsible for emergency repair of vehicles during the survey. He should be well equipped with the necessary tool kit and emergency spare parts.	C. If possible, a replacement pre-paid SIM card should be procured by SWAC for the Thuraya satellite phone in Pakistan and I.R. Iran so that they can be used during the joint survey.
D. FAO is requested to provide walkie-talkies of high range for making better communications during the survey.	D. Walkie-talkies provided by FAO are of limited range. FAO is requested to provide four high range sets to each country if possible.
E. The route of Bandar Abbas to Kahnuj should be slightly modified to include Ghale Ganj and Sowlan. Three overnights should be continued in Kharan (Pakistan) in order to survey the vast and deep desert of Kharan, Naru, Shamsi and Ormage.	E. The team hopes that security situation in Baluchistan, Pakistan will return to normal and both the countries will undertake regular joint survey activities in 2011 and thereafter.
F. Pakistan should arrange, manage and improve guesthouse accommodations and the Locust Officer in-Charge of the respective outposts in Pakistan should coordinate and help the survey team.	

Annex 5. Reporting and information

1. Introduction

As part of the Desert Locust early warning system within the framework of preventive control adopted by Member Countries, the Desert Locust Information Service (DLIS) at FAO Headquarters monitors the ecological and meteorological conditions and the locust situation in all locust-affected countries throughout the recession area on a daily basis. This is accomplished by combining the results of locust survey and control operations carried out by national teams in affected-countries with rainfall estimates, remote sensing imagery of green vegetation, historical data, models estimating locust development rates, and trajectory models of wind. National teams enter geo-referenced field observations on habitat conditions, locust details and control operations into eLocust2, a handheld data logger[1], which are then transmitted via satellite to the national locust centre in the country where the field operations are being carried out. A nationally designated Locust Information Officer is responsible for downloading this data from a dedicated secure server on the Internet[2], checking the data with a custom application, eLocust2Mapper[3], importing the corrected data into a custom geographic information system, RAMSES, for analysis, exporting the data from RAMSES and sending the resulting MS Excel spreadsheet to FAO DLIS so that it can be imported into their SWARMS GIS for global analysis and forecasting.

The system of data collection, transmission, management and analysis has been standardized since all locust-affected countries use the same version of eLocust2, eLocust2Mapper and RAMSES. This is critical in order to reduce maintenance and training costs and to ensure harmonized analysis of the situation. Therefore, it is critical that all countries use these tools that have replaced the previous methods of completing forms and sending data in tables using MS Word.

It is also essential that countries send RAMSES data and national bulletins (whether decadal, fortnightly or monthly) to FAO DLIS in a timely manner on a regular basis. During calm (green) periods, countries should report at least once per month and send RAMSES data with a brief interpretation. During periods of increased locust activity, especially when control operations are in progress or during locust outbreaks, upsurges and plagues, RAMSES export files with a brief interpretation should be sent at least twice/week within 48 hours of the latest survey[4]. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. Every front-line country should send at least one report every month to FAO DLIS, even if no surveys have been carried out or no locusts have been reported.

For more than ten years, FAO DLIS has been evaluating every report and piece of information it receives in terms of quality and timeliness as well as frequency of reporting. In this way, countries can be appraised of reporting strengths and weaknesses.

[1] eLocust2 consists of a handheld touch screen data logger in English and French that is connected to the vehicle cigarette lighter for power and a small antenna on top of the vehicle for obtaining GPS coordinators and transmitting data via Inmarsat satellite in real time (about ten minutes from anywhere in the field to the nationa locust centre)

[2] Novacom: http://platform.novacom-services.com/novaserv/jsp/novacom/login.jsp

[3] developed and maintained by Mehdi Ghaemian (Plant Protection Organization, I.R. Iran)

[4] FAO DLIS uses a colour-coded scheme to indicate calm periods (green), and periods of increased locust activity from caution (yellow) to threat (orange) to danger (red). These colours are found in the header of the monthly FAO Desert Locust Bulletin and the Locust Watch web pages (http://www.fao.org/ag/locusts)

2. National reporting evaluation

The results of FAO DLIS's evaluation of national reporting for India, I.R. Iran and Pakistan are presented in Appendix 1. The following conclusions can be drawn from the results:

India. Reporting quality continued to get better with significant improvements in 2010; however, timeliness declined in 2010 and was below 2007 levels. Reports were received regularly every month and good use was made of eLocust2 and RAMSES.

I.R. Iran. Both reporting quality and timeliness continued to improve in 2009 and 2010 with perfect scores received in 2010. Each report was sent with RAMSES data. However, no reports were received in November 2010. Good use of eLocust2 and RAMSES continued.

Pakistan. Reporting quality improved in 2009 but declined in 2010. There was a significant decline in timeliness in 2009 (the lowest in the past ten years) that improved slightly in 2010 but remained below pre-2002 levels. For example, July 2010 reports were received at the end of the first week in August after FAO had issued its monthly locust bulletin. Although eLocust2 and RAMSES continued to be used, there were significant issues concerning data quality in both systems (see below). RAMSES data was not received in June and July 2010.

Several additional observations are noteworthy regarding the data and reports received from India and Pakistan. In India, there remain consistent gaps in survey coverage in Rajasthan that may lead to inaccurate assessments of the current locust situation. This was most clearly demonstrated in the summer of 2010 when few locusts were reported and then quite suddenly significant infestations appeared even though they were the result of local breeding rather than invasion. It was also noticed that few surveys were conducted near the Pakistani border. When surveys were undertaken in these areas, few if any locusts were found even though scattered adults were present in adjacent areas nearby on the Pakistani side. This is quite unusual and locusts rarely respect international frontiers. During control operations, control data was not entered into eLocust2, which made it difficult for FAO DLIS to assess the impact of control operations on expected locust developments. There was also a lag in reporting in the autumn of 2010 when locust activity increased.

In Pakistan, there is significant room for improving national locust monitoring and reporting. Although Pakistan has one of the highest number of eLocust2 units activated in any country, only about 15% (3 out of 20) are actively engaged in the field. Sometimes unrealistic data is entered into eLocust2 by a national survey team, for example immature adults laying eggs in dry soil. Such data causes confusion and takes time to correct. Field teams should receive regular training on eLocust2 to overcome this problem. It appears that eLocust2 data are not downloaded, checked with eLocust2Mapper and imported into RAMSES; instead, the data are entered manually. It takes much time to do this and it can also introduce many new errors. This suggests that the tools developed by FAO to make the Locust Information Officer's job easier are not being used for one reason or another. It was noticed that the eLocust2 data was quite different than the RAMSES data whereas they both should be identical. This causes substantial confusion and errors between the field, national locust centre and DLIS. Control operations are not included in the data and are, instead, presented in a long table in MS Word. Again, it is very time consuming to enter data in this format into a GIS. Given the aforementioned issues, it is not surprising that RAMSES data are often late or not forthcoming, especially during control campaigns. Despite substantial training and technical backstopping provided by FAO, Pakistan remains the only front-line country that continues to suffer from these problems.

During the summer breeding period, monthly meetings are held on the Indo-Pakistan border, attended by locust officers from both countries to discuss the current situation and exchange information. Unfortunately, FAO DLIS only received four out of six reports in 2009 and only two in 2010 (Annex 1). Reports were usually received several weeks after the meeting. Even though the nationally designated information officer attends most meetings, the report does not contain any RAMSES maps

indicating where surveys have been conducted, where locusts are present and the location of control operations.

3. eLocust2 usage

The distribution, usage and expenditures for eLocust2 in the three front-line countries of the SWAC region are presented in Appendix 2.

Within the SWAC region, 50 eLocust2 units are presently activated out of a total of 53 units. The usage of eLocust2 units varies according to the season, environmental conditions and the Desert Locust situation. Not surprisingly, the usage is greater during the summer breeding period along both sides of the Indo-Pakistan border compared to the spring in the breeding areas of western Pakistan and southeast Iran. The Commission's Trust Fund pays for the monthly subscription costs, activation fees, and data transmission expenses. The current expenditure is within the estimated budget.

From the data in Annex 2, it can be readily seen that India is making good use of eLocust2. Some 15 out 21 activated units are in use by field teams. This has improved significantly the timely and accurate management of large volumes of field data. The I.R. Iran also makes good use of eLocust2 with nearly half of its activated units being used in the field. In Pakistan, however, not all field teams are using eLocust2. For example, only up to five of the 20 activated units were used in the field during survey and control operations in November 2010.

All countries are reminded to inform FAO DLIS immediately if any eLocust2 unit becomes inoperable so that steps can be taken to replace the faulty unit, cable or antenna.

4. The challenge ahead

Improvements in Desert Locust reporting have continued in all front-line countries during the past two years. Nevertheless, countries must not become complacent. **The Session should examine what areas that require attention, further refinement and improvement**.

Accordingly, **the Commission should address gaps and weaknesses in the progress made in national locust reporting as indicated above and in the annual evaluations** (Appendix 1).

The 26th Session made two recommendations regarding the monthly Indo-Pakistan border meetings:

(a) *India and Pakistan should make sure that their Information Officers should continue to attend the monthly Border Meeting during the summer period in order to exchange detailed information including RAMSES maps*.
(b) The delegate from Pakistan should send the monthly India/Pakistan Border Meeting Report to FAO DLIS once each meeting has concluded.

Although information officers are now usually included in the meetings, there is no evidence that RAMSES maps are being used. Furthermore, there remain problems with the timely transmission of the monthly border meeting reports to FAO DLIS on a regular basis. **The Session should examine ways to improve the effectiveness of the meetings, the quality of the reports and their regular and timely distribution to all concerned parties**.

Regarding the usage of eLocust2, one recommendation was made at the 26th session for FAO to procure *eLocust2 units that should have been procured in 2007-08 for Afghanistan (1), India (12) and I.R. Iran (5) and additional units for I.R. Iran (1) and Pakistan (6) to ensure that every survey and control team is properly equipped and uses eLocust2 to record and transmit data to their national locust centre. The operating and repair costs of eLocust2 will be covered by the Trust Fund*. These units have been procured and will be dispatched by FAO DLIS when the need arises in each country.

FAO continues to encourage all countries to ensure that each survey and control team is equipped with an eLocust2 unit, properly trained in its use, and that it is actually used during every field operation, including control. All eLocust2 data should be automatically imported into the RAMSES system for analysis and forwarding to FAO DLIS. Unfortunately, this is not always the case in India and Pakistan, and this can have severe consequences. For example, the absence of RAMSES data from Pakistan in June and July 2010 did not allow FAO to alert India and Pakistan in time about a likely increase in locust populations and the risk of gregarization leading to the formation of hopper bands and swarms. **The Session should provide useful suggestions and recommendations to address these gaps**.

Data transmission costs incurred in 2009-2010 total some US$29,000. This exceeds the amount approved at the 26th Session by more than US$7,000. The difference should be paid from the next biennium budget. **The Session should approve this**.

Appendix 1. Evaluation of national locust reporting in 2009-2010

Every message received from locust-affected countries pertaining to the Desert Locust situation, including survey and control results, bulletins and other information, is evaluated for quality and timeliness using a three-point scale[5]. The frequency of reporting is measured by determining if at least one report was received each month.

Annual evaluations are undertaken in order to monitor progress in national locust reporting and identify any gaps and weaknesses to be addressed.

(a) 2002 – 2010: Quality (3 is high, 1 is low)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
India	1.98	2.00	2.14	2.10	2.22	2.62	2.45	2.48	2.98
I.R. Iran	2.80	2.80	2.41	2.40	2.50	2.55	2.16	2.88	3.00
Pakistan	1.97	2.67	2.07	2.20	2.21	2.59	2.13	2.68	2.66

(b) 2002 – 2010: Timeliness (3 is high, 1 is low)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
India	2.11	2.34	2.40	2.50	2.14	2.70	2.75	2.79	2.22
I.R. Iran	2.90	2.70	3.00	3.00	2.80	2.36	2.22	2.96	3.00
Pakistan	2.80	2.52	2.39	2.30	2.55	2.74	2.38	2.04	2.22

(c) 2002 – 2010: Number of reports

	2002	2003	2004	2005	2006	2007	2008	2009	2010
India	124	204	63	81	59	94	56	48	48
I.R. Iran	10	10	17	14	10	11	32	24	13
Pakistan	30	33	28	39	33	34	24	28	32

(d) 2002 – 2010: Frequency (out of 12 months)

	2002	2003	2004	2005	2006	2007	2008	2009	2010
India	12	12	12	12	12	12	12	12	12
I.R. Iran	9	8	12	12	8	9	10	12	11
Pakistan	12	12	12	12	12	12	10	12	12

(e) 2002 – 2010: RAMSES data (the number of RAMSES export files received by DLIS)

	2004	2005	2006	2007	2008	2009	2010
India	35	38	23	73	30	25	19
I.R. Iran	10	12	5	11	33	22	13
Pakistan	3	19	11	17	15	15	18

(f) 2009 – 2010: monthly border meetings attended by locust information officers (date of meeting and date report was received by FAO)

	Jun	Jul	Aug	Sep	Oct	Nov
2009	both (10, 22)	both (7, 23)			(1, 15) both (22, 5/11)	PAK (25, 17/12)
2010		PAK (7, 20)	both (10, 24)			

[5] each report is scored on a scale of 3 (high) to 1 (low):
quality: 3 (data and assessment), 2 (either), 1 (neither)
timeliness: 3 (<6 days of last data date), 2 (6-14 days), 1 (>14 days)

Appendix 2. eLocust2 usage

(a) eLocust2 distribution – the number of eLocust2 units in each country that are activated and of those how many are actually being used in the field.

	Activated (in use)	Non-activated	Total
India	21 (15)	0	21
I.R. Iran	9 (4)	3	12
Pakistan	20 (3)	0	20

(b) eLocust2 usage – the number of stops in which eLocust2 was used to record and transmit data, compared to the most active countries in the Central and Western regions.

	Sep	Oct	Nov	Dec	Total
India	556	414	365	244	1,579
I.R. Iran	14	15	46	53	128
Pakistan	266	167	164	97	694
Sudan	16	173	181	353	723
Mauritania	584	983	799	652	3,018

(c) eLocust2 expenditures – the costs of eLocust2 usage consists of the fees for the monthly subscription ($21/unit), activation ($40/unit), and data transmission ($1.35/stop)[6]. The majority of the expenditures is attributed to monthly subscription costs and very little is for data. Therefore, it is important not to let activated units sit idle for long periods of time. The total 2009-2010 expenditures were $30,890, which exceeded the $21,000 approved at the 26th session.

	India	I.R. Iran	Pakistan	Total
Subscription (%)	4,315 (71)	2,211 (74)	5,038 (95)	11,564 (80)
Activation (%)	241 (4)	483 (16)	0 (0)	724 (5)
Data (%)	1,552 (25)	296 (10)	256 (5)	2,104 (15)
2009 total	**$6,108**	**$2,990**	**$5,294**	**$14,392**
Subscription (%)	5,471 (73)	2,510 (91)	5,578 (89)	13,559 (82)
Activation (%)	241 (3)	0	0	241 (2)
Data (%)	1,793 (24)	234 (9)	670 (11)	2,698 (16)
2010 total	**$7,505**	**$2,744**	**$6,248**	**$16,498**
2009-2010 total	**$13,052**	**$5,515**	**$11,055**	**$30,890**

[6] US$ figures are approximate, equivalent at the current exchange rate (1.35) to the original costs for subscription (16 euro/unit), activation (30 euro/unit) and data transmission (1 euro/stop). There is no cost for unit deactivation.

Annex 6. Accounts for 2008-2010

1. Introduction

The FAO Commission for Controlling the Desert Locust in South-West Asia (SWAC) is funded entirely by contributions from the four member countries. The total annual contribution of all members is US$ 71,450. This amount has remained constant since the establishment of the Commission in 1964. If countries pay their contributions, then there is US$ 142,900 available to fund activities indicated in the biannual work plan.

The 26th Session approved expenditures for 2009-2010 in the amount of US$ 267,750 that consisted of the biannual member contributions and an allocated balance of previous funds in the amount of US$ 125,000.

The overall financial position of Commission's Trust Fund is shown in Table 1. The final accounts for 2008-2010 are presented in Table 2. The current status of contributions from the Member Countries is given in Table 3.

2. Overall situation

The final financial expenditures for 2008 were US$63,511 compared to US$56,609 reported at the 26th session up to 25 November 2008 (see Table 2). The 26th Session approved a budget of US$ 267,750 for 2009-2010, including standard support costs. The expenditures for 2009 were US$ 119,040 and the expenditures for 2010 were US$ 48,690. Therefore, the total expenditures for 2009-2010 were US$ 167,730, which is well short of the approved budget. Considering the contributions that were made by Member Countries in 2008-2010, the current balance of the Trust Fund is US$ 135,856, which is nearly the same as the balance reported at the 26th Session (Table 1).

The expected level of contributions, including the settling of any arrears, over the next two-year period should be taken into account when preparing the work plan for 2011-2012.

3. Expenditures in 2009-2010

The following expenditures were incurred from the Trust Fund in 2009-2010 (see Table 2):

- eLocust2 data – subscription, activation and transmission costs
- participation of locust information officers at annual SWAC/CRC inter-regional workshop in Cairo (April 2009 and 2010)
- organizational costs and participation of Master Trainers in SWAC/CRC inter-regional Training of Trainers workshop in Ramsar, Iran (May 2010)
- Iran/Pakistan joint border survey (April 2009 and 2010)
- Tata Safari VX 4WD vehicle for India in 2009
- Flybook V5 laptop PC for Pakistan in 2010
- DLMTM kit equipment, reproduction and distribution

4. Contributions in 2008-2010

Details of the contributions to the Commission's Trust Fund by Member Countries are presented in Table 3. At the beginning of 2008, there was US$ 454,260 of arrears to the Commission's Trust Fund. This is nearly US$ 13,000 higher than at the beginning of the previous biennium. In addition, the annual contributions for 2008-2010 amounted to US$ 214,350. Thus, US$ 668,610 was due to the Trust Fund. From 1 January 2008 to 31 October 2010, US$ 267,002 was received from Member Countries, which is about US$ 40,000 more than in the previous biennium. This is only slightly more

than the annual assessment during the period. Finally, the current outstanding balance is US$ 401,607, down from US$ 428,679, at the end of the previous biennium.

No progress has been made on the substantial arrears of I.R. Iran (US$ 320,002) and Pakistan (US$ 85,776).

5. Recommendations from the 26th Session

The last session of the Commission made a few specific recommendations pertaining to the finances.

(a) In order to improve financial accountability of the Commission, each country should provide evidence of annual contributions to the Trust Fund that has been made up to now.
(b) If for some reason some of the arrears of I.R. Iran are not forthcoming in 2009, the Chairman and Secretary of the Commission should make a visit to Tehran and discuss the payment of arrears with the Director of the Plant Protection Organization and other relevant officials.
(c) Any future expenditure by the FAO Representation in I.R. Iran related to the support of the Commission should not be paid from the Commission's Trust Fund.

The Session should review the status and progress made for each of these recommendations.

6. Work plan for 2011-2012

When preparing the biannual work plan, it is necessary to keep in mind that the total annual contribution of the Member Countries US$ 71,450. If countries pay their contributions, then US$ 142,900 should be available for the biannual work plan of 2011-2012. Combined with the current balance of US$ 135,856, then up to a maximum of US$ 278,756 could be allocated for activities in 2011-2012.

It is proposed that the work plan for the next biennium carry forward any activities or issues that were not completed previously but are still thought to be relevant and important, and include any new activities agreed upon by the Commission.

7. Decisions required

The Session should:

(a) develop an effective work plan of activities to be implemented in 2011-2012 that would strengthen the national capacities in survey, reporting, control and planning;
(b) reiterate the need for contributions to be made to the Trust Fund on a regular basis in order to support the activities envisaged under the work plan;
(c) review the large amount of arrears of I.R. Iran and Pakistan.

Table 1. Trust Fund (MTF/RAS/001/MUL) financial position as at 31/12/10 (US$)

Receipts		**Prior Years**	**2008**	**2009**	**2010**	**Total**
	Contributions	2,673,566	97,030	94,074	75,898	**2,940,568**
	Interest earned	187,780	750	423	201	**189,154**
	Total	**2,861,346**	**97,780**	**94,497**	**76,099**	**3,129,722**
Expenditures		**Prior Years**	**2008**	**2009**	**2010** (prov)	**Total**
Account						
5011	Salaries Professional	63	0	0	0	**63**
5012	General Service	20,816	0	0	0	**20,816**
5013	Consultants	45,414	0	0	0	**45,414**
5014	Contracts	59,943	608	28,984	-1,926	**87,609**
5021	Travel	475,379	29,552	17,272	28,089	**550,292**
5023	Training	60,658	2,000	5,830	0	**68,488**
5024	Expendable equipment	111,007	0	14,471	0	**125,478**
5025	Non-expendable equipment	690,533	5,939	24,683	2,652	**723,807**
5026	Hospitality	761	0	0	0	**761**
5028	General operating expenses	1,127,295	18,035	12,756	14,844	**1,172,930**
5040	General overhead expenses	799	71	1,349	2	**2,221**
5050	Chargeback	13,409	0	0	0	**13,409**
	Subtotal	**2,606,077**	**56,205**	**105,345**	**43,661**	**2,811,288**
5029	5% on accounts 5024 and 5025; 13% on all other accounts	156,547	7,307	13,695	5,029	**182,578**
	Total	**2,762,624**	**63,512**	**119,040**	**48,690**	**2,993,866**
Balance						**135,856**

N.B. prior years expenses (up to 31/12/1981) are included in account 5028 (US$ 917,052)

Table 2a. Statement of Accounts 2008 (MTF/RAS/001/MUL)

Account	Description	Cost US$
5014	**Contracts**	
	Novacom: eLocust2 activation + traffic (PO 202788)	608
	subtotal	**608**
5021	**Travel**	
	Inter-regional Workshop on RAMSES and eLocust2, Cairo (22-24/4/08)	
	• Zafar Ali Khan (Pakistan)	3,231
	• Ghulam Qadir Lund (Pakistan)	1,532
	• Hirbod Abbasali (Iran)	1,592
	• Mehdi Ghaemian (Iran)	2,850
	• Pramod Gour (India)	2,662
	• Sethi Khushwant Singh (India)	1,702
	Other	
	• N. Al-Harthy: training for locust information officers, Karachi (4-10/5/08)	2,818
	• Iran: Joint border survey Iran/Pakistan (4/08)	5,880
	• Pakistan: Joint border survey Iran/Pakistan (4/08)	5,880
	• P. Gour: RAMSES training, Karachi (2-8/3/08) - postponed	1,405
	subtotal	**29,552**
5023	**Training**	
	Pakistan: RAMSES training by P. Gour, Karachi (2-8/3/08) - postponed	2,000
	subtotal	**2,000**
5024	**Expendable Equipment**	
	DLMTM kit (from CRC, PR 40192): 36 Dwyer hand-held wind meter; 36 sling psychrometer; 36 Vibratak tachometers; 36 droplet counting templates; 9 water sensitive paper cards; 9 oil sensitive paper cards; 36 magic pens; 36 folding pocket magnified-double lens 5x -10x; 9 tape measure 100m; 9 whiteboard pens/erasers; 36 siva compass; 9 red laser pointers; 36 1:500 00 scale TPC map J6C; 9 sticks for sample mounting (postponed to 2009)	0
	subtotal	**0**
5025	**Non Expendable Equipment**	
	Iran: one Toshiba Portage M700-s7004V laptop for M. Ghaemian	1,858
	Pakistan: 2 desktop PCs, printers and scanners for Locust Unit, Karachi	2,799
	India: one Toshiba Portable computer	1,281
	subtotal	**5,939**
5028	**General Operating Expenses**	
	United for Foreign Trade (Cairo): DLMTM reproduction (PO 223840)	3,600
	United for Foreign Trade (Cairo): DLMTM for SWAD (PO 227188)	2,700
	Iran: Joint border survey Iran/Pakistan (4/08)	4,626
	Iran: SWAC support provided by FAOR (S. Behrad)	735
	Afghanistan: SWAC Meeting Expenses 15-17 Dec 2008	1,320
	Pakistan: Joint border survey Iran/Pakistan (4/08)	5,000
	subtotal	**17,981**
5040	**General Overhead Expenses**	
	FAO Pouch services	125
	subtotal	**125**
5029	**Support Costs**	
	5% on accounts 5024 and 5025; 13% on all other accounts	7,307
	subtotal	**7,307**
	Total expenditures in 2008	**63,511**

Table 2b. Statement of Accounts 2009 (MTF/RAS/001/MUL)

Account	Description		Cost US$
5014	**Contracts**		
	Novacom: eLocust2 activation + traffic up to 2/08 (PO 182066)		28,984
		subtotal	**28,984**
5021	**Travel**		
	SWAC/CRC interregional workshop for national locust info officers (Cairo, 27-28 May)		
	• Pramod Gour (India)		2,071
	• Mehdi Ghaemian (Iran)		1,901
	• Chalakizbardest Mahmoud (Iran)		1,901
	Other		
	• Iran: Joint border survey Iran/Pakistan (3/06)		5,042
	• Pakistan: Joint border survey Iran/Pakistan (3/06)		6,356
		subtotal	**17,272**
5023	**Training**		
	India: Workshop expenses		3,401
	Iran: Workshop expenses		2,429
		subtotal	**5,830**
	Expendable Equipment		
5024	DLMTM kit: Micron Sprayers - equipment (PO 230869)		14,471
		subtotal	**14,471**
	Non Expendable Equipment		
5025	India: TATA Safari Vehicle 4x4 VX Diesel		24,683
		subtotal	**24,683**
5028	**General Operating Expenses**		
	Egypt: Micron Sprayers - Meteorological instruments - Freight charges (PO 230869)		372
	Egypt: insurance charges for Meteorological equipment (PO 230869)		32
	India: insurance for vehicle as per PO		1,010
	India: Courier charges		40
	Iran: Joint border survey Iran/Pakistan 2009		5,302
	Pakistan: Joint border survey Iran/Pakistan 2009		6,000
		subtotal	**12,756**
5040	**General Overhead Expenses**		
	Pouch charges		1,349
		subtotal	**1,349**
	Support Costs		
5029	5% on accounts 5024 and 5025; 13% on all other accounts		13,695
		subtotal	**13,695**
	Total expenditures in 2009		**119,040**

Table 2c. Statement of Accounts 2010 (MTF/RAS/001/MUL) as of 31 December 2010

Account	Description		Cost US$
5014	**Contracts**		
	Novacom: eLocust2 activation + traffic (PO 237457) carry-forward 2009		-1,926
		subtotal	**-1,926**
5021	**Travel**		
	Iran: Joint border survey Iran/Pakistan (3/10)		4,320
	Pakistan: Joint border survey Iran/Pakistan (3/10)		4,596
	Iran: Inter-regional Workshop Desert Locust Master Trainers Training (8-13 May 2010)		
	• Egypt: Mr. Nasser Al-Harhy		1,439
	• India: Mr. Anil Sharma		1,851
	• Iran: Mr. Khan Azam (includes course expenses)		7,031
	• Pakistan: Safdar Ali		1,393
	Egypt: Inter-regional Workshop for Locust Information Officers (April 2010)		
	• Pakistan: Mr. Shahbaz Masih		1,483
	• Pakistan: Mr. Ghulam Qadir Balouch		1,483
	• Iran: Mr. Ghaemian Mehdi		2,400
	• Afghanistan: Abdul Shokor and Hemat (cancelled - $930 each reimbursed)		0
	• India: Mr. Gour Pramod		2,094
		subtotal	**28,089**
5025	**Non Expendable Equipment**		
	Pakistan: Flybook V5 Spotlight		2,652
		subtotal	**2,652**
5028	**General Operating Expenses**		
	Insurance Flybook for Pakistan		6
	Iran: Cost of regional workshop		1,491
	Afghanistan: Visa travel exp. Hemat		476
	Iran: Joint border survey Iran/Pakistan 2010 (3/10)		6,000
	Pakistan: Joint border survey Iran/Pakistan 2010 (3/10)		6,000
	Afghanistan: Reimbursement of expenses for visa and travel costs Abdul Shokor		867
	India: Courier charges (9/10)		4.31
		subtotal	**14,844**
5040	**General Overhead Expenses**		
	Pouch chargebacks (12/10)		2
		subtotal	**2**
5029	**Support Costs**		
	5% on accounts 5024 and 5025; 13% on all other accounts		5,029
		subtotal	**5,029**
	Total expenditures in 2010		**48,690**

Table 3. Status of contributions (MTF/RAS/001/MUL) for 2008-10 *(as of 31 October 2010)*

	Afghanistan	India *	I.R. Iran	Pakistan *	Total
2008					
outstanding 31/12/07	38,500.00	26,956.76	319,979.56	68,823.32	**454,259.64**
contribution for 2008	2,750.00	27,000.00	25,000.00	16,700.00	**71,450.00**
received up to 31/12/08	*38,400.00*	*33,653.05*	*24,977.12*	*0.00*	***97,030.17***
2009					
outstanding 31/12/08	2,850.00	20,303.71	320,002.44	85,523.32	**428,679.47**
contribution for 2009	2,750.00	27,000.00	25,000.00	16,700.00	**71,450.00**
received up to 31/12/09	*5,550.00*	*47,023.39*	*25,000.00*	*16,500.84*	***94,074.23***
2010					
outstanding 31/12/09	50.00	280.32	320,002.44	85,722.48	**406,055.24**
contribution for 2010	2,750.00	27,000.00	25,000.00	16,700.00	**71,450.00**
received up to 31/10/10	*0.00*	*34,251.73*	*25,000.00*	*16,646.20*	***75,897.93***
2008-10 summary					
Outstanding as of 31/12/07	38,500.00	26,956.76	319,979.56	68,823.32	**454,259.64**
2008-10 annual assessment	8,250.00	81,000.00	75,000.00	50,100.00	**214,350.00**
2008-10 received	*43,950.00*	*114,928.17*	*74,977.12*	*33,147.04*	***267,002.33***
Balance due (US$)	**2,800.00**	**-6,971.41**	**320,002.44**	**85,776.28**	**401,607.31**

* 25% paid in local currency through Imprest Account

Annex 7. Approved Expenditures for 2011-2012

TF912300 - MTF/RAS/001/MUL

Available funds		**AFG**	**IND**	**IRN**	**PAK**	**$AFG**	**$IND**	**$IRN**	**$PAK**	**Total**	***Available***
Member annual contributions		2	2	2	2	5,500	54,000	50,000	33,400	**142,900**	***142,900***
current unallocated funds										**135,856**	***135,856***
subtotal										***278,756***	***278,756***
	Unit cost	**AFG**	**IND**	**IRN**	**PAK**	**$AFG**	**$IND**	**$IRN**	**$PAK**	**Total**	
Standard expenditures											
IRN/PAK Joint survey	11,000			2	2	0	0	22,000	22,000	**44,000**	***234,756***
28th Session travel/op costs	3,500	1	1	1	1	3,500	3,500	3,500	3,500	**14,000**	***220,756***
eLocust2 transmission	6,000		2	2	2	0	12,000	12,000	12,000	**36,000**	***184,756***
National training (1)	4,000	1	1	1	1	4,000	4,000	4,000	4,000	**16,000**	***168,756***
RAMSES/eLocust2 wkshop (2)	4,000		2	2	2	0	8,000	8,000	8,000	**24,000**	***144,756***
New technology support (3)	3,000		1	1	1	0	3,000	3,000	3,000	**9,000**	***135,756***
subtotal						***7,500***	***30,500***	***52,500***	***52,500***	***143,000***	
Unimplemented expenditures											
MSc training (4)	25,000	1				25,000	0	0	0	**25,000**	***110,756***
DLMTM translation	2,500	1	1		1	2,500	2,500	0	2,500	**7,500**	***103,256***
SOP translation	1,000	1	1		1	1,000	1,000	0	1,000	**3,000**	***100,256***
Desktop PC & printer (5)	2,500	1				2,500	0	0	0	**2,500**	***97,756***
HF radio installation	2,500		1			0	2,500	0	0	**2,500**	***95,256***
Vehicles (6)	36,000			1		0	0	36,000	0	**36,000**	***59,256***
DLMT AFG training in Iran (7)	10,000	1				10,000	0	0	0	**10,000**	***49,256***
New expenditures											
Computers – laptop (5)	1,500		1		1	0	1,500	0	1,500	**3,000**	***46,256***
Computers – laptop (8)	1,200			1		0	0	1,200	0	**1,200**	***45,056***
DLCC participation (9)	3,000	1	1	1	1	3,000	3,000	3,000	3,000	**12,000**	***33,056***
CRC survey participation (10)	1,200			1		0	0	1,200	0	**1,200**	***31,856***
SWAC web site (11)	500	1	1	1	1	500	500	500	500	**2,000**	***29,856***
Online training / self learning	2,400	1	1	1	1	2,400	2,400	2,400	2,400	**9,600**	***20,256***
National ToT	5,000		1		1	0	5,000	0	5,000	**10,000**	***10,256***
subtotal						***46,900***	***18,400***	***44,300***	***15,900***	***125,500***	
totals						**54,400**	**48,900**	**96,800**	**68,400**	**268,500**	

Notes:
(1) cost-sharing with national budget to support national training
(2) two designated locust information officers per country to attend annual workshop
(3) GIS and RAMSES v4 support
(4) two year MSc programme at University of Faisalabad, Pakistan
(5) local purchase
(6) local purchase of Nissan 4x4
(7) two DLMTs to Tehran for 10 days in June or July 2011; includes costs of two Iranian DLMTs
(8) Apple Mac laptop to purchase locally or in Rome
(9) 40th session, Cairo 6-10 Mar 2011
(10) one Iranian survey officer for a survey on the Omani coast (spring 2011)
(11) development and maintenance costs, hosted at FAO HQ
(12) development costs
(13) to be carried out by DLMT and SWAC Secretary

Annex 8. Trust Fund Budget for 2011-2012

TF912300 – MTF/RAS/001/MUL

Code	Item	2011 (US$)	2012 (US$)	TOTAL
5013	Consultants	14,000	14,873	**28,873**
5014	Contracts	1,000	0	**1,000**
5021	Travel	50,000	60,000	**110,000**
5023	Training	10,000	10,000	**20,000**
5024	Expendable equipment	0	0	**0**
5025	Non-expendable equipment	20,000	25,000	**45,000**
5028	General operating expenses	20,000	25,000	**45,000**
5050	Chargeback	0	0	**0**
	Sub-Total	**115,000**	**134,873**	**249,873**
5029	Support cost			
	5% (on 5024 and 5025)	1,000	1,250	**2,250**
	13% (on remainder)	12,350	14,283	**26,633**
	Sub-Total	**13,350**	**15,533**	**28,883**
	GRAND TOTAL	**128,350**	**150,406**	**278,756**