

# REPORT

## **Technical Workshop on Locusts in Caucasus and Central Asia (CCA)**

Pushkin, Russian Federation

26-30 October 2015



**Food and Agriculture Organization  
of the United Nations**

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned. The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

© FAO 2015



Participants in the “Technical Workshop on Locusts in Caucasus and Central Asia”

Pushkin, Russian Federation, 26-30 October 2015

## TABLE OF CONTENTS

<b>LIST OF ACRONYMS AND ABBREVIATIONS.....</b>	<b>v</b>
<b>INTRODUCTION.....</b>	<b>1</b>
<b>OFFICERS OF THE SESSION.....</b>	<b>1</b>
<b>SESSION 1: NATIONAL LOCUST CAMPAIGNS IN 2015 AND FORECASTS FOR 2016... 2</b>	
National locust campaigns in 2015 (countries' presentations) (Item 4 of the Agenda) 2	
Locust forecast for 2016 and preparation of the next campaign (Item 5) .....	4
<b>SESSION 2: IMPLEMENTATION OF THE PROGRAMME TO IMPROVE LOCUST MANAGEMENT IN CAUCASUS AND CENTRAL ASIA.....</b>	<b>5</b>
Programme in 2015: overview on implementation and funding situation (Item 6).....	5
Regional cooperation in 2015 (Item 7).....	8
Regular Information Sharing (Item 7a).....	8
Cross-border or joint surveys (Item 7b).....	9
National capacities' development (Item 8 of the Agenda).....	11
Presentation of the monographs on the three locust pests (Item 8c).....	13
Workshop on locust contingency plans in CCA: main outcomes (Item 9) .....	14
Presentation of the newly-approved Japanese project for Afghanistan, Kyrgyzstan and Tajikistan (and synergies with other projects within the Programme) (Item 10). 14	
Programme of work during Year 5 (2016) and in the coming years: what's next? (Item 11).....	15
<b>SESSION 3: DEVELOPING MONITORING AND ANALYSING SYSTEMS (GEOGRAPHICAL INFORMATION SYSTEM).....</b>	<b>23</b>
Testing the Automated System of Data Collection (ASDC): lessons learnt and recommendations (pilot countries' presentations: Georgia, Russia and Uzbekistan) (Item 12).....	23
Update of fields in ASDC (Item 13) .....	24
Update on the development of the regional Geographical Information System (GIS) in CCA (Item 14).....	25
<b>SESSION 4: LOCUST CONTROL.....</b>	<b>26</b>
Presentation of the latest Pesticide Referee Group Report (December 2014) and of the Stakeholder Workshop on procurement and supply of pesticides for locust control (September 2015) (Item 15). .....	26
Progress made on spraying technologies, products and biopesticides (countries' feedback) (Item 16) .....	28

<b>Presentation of the video on the use of Ultra-low Volume technology in locust control (Item 17)</b> .....	<b>29</b>
<b>Presentation of the advocacy and tutorial videos on the use of biopesticides against locusts (Item 18)</b> .....	<b>30</b>
<b>SESSION 5: RISK REDUCTION FOR HUMAN HEALTH AND THE ENVIRONMENT</b> .....	<b>30</b>
<b>Mitigating impact of locust control operations (Item 19)</b> .....	<b>30</b>
E-Committee on empty pesticide container management (Item 19a).....	30
<b>Monitoring impact of locust control operations (Item 20)</b> .....	<b>32</b>
Activities carried out by the newly-created Human Health and Environment Monitoring Team in Tajikistan, lessons learnt and recommendations (country's presentation) (Item 20a).....	32
Pilot activity to develop a monitoring system on quality control and efficacy of locust treatments in Kyrgyzstan (country's presentation) (Item 20b).....	33
Conclusions of the Study on the fate of insecticides used for locust control on pasture in Kyrgyzstan - residue analysis (country's presentation) (Item 20c).....	34
<b>Progress made on safety and environmental precautions (countries' feedback) (Item 21)</b> .....	<b>34</b>
<b>ANY OTHER BUSINESS</b> .....	<b>36</b>
<b>ADOPTION OF THE REPORT</b> .....	<b>36</b>
<b>CLOSING REMARKS</b> .....	<b>36</b>
<b><u>ANNEXES</u></b> .....	<b>37</b>
<b>Annex I – List of participants</b> .....	<b>38</b>
<b>Annex II – Approved Agenda</b> .....	<b>43</b>
<b>Annex III – Implementation of the Programme during Year 4 (budget and estimate expenditures)</b> .....	<b>45</b>
<b>Annex IV – Approved fields for the Automated System of Data Collection (ASDC) ..</b>	<b>47</b>
<b>Annex V – National locust situation in 2015 and forecast for 2016</b> .....	<b>59</b>
<b>Annex VI – Maps of treated areas in 2014 and 2015 and forecast for 2016 in CCA countries</b> .....	<b>61</b>
<b>LIST OF TABLES</b>	
Table N.1 - Surveyed, infested and treated areas in 2015 in CCA.....	4
Table N.2 - Forecasted treated areas for 2016 in CCA.....	4
Table N.3 - Workplan and budget - Project GCP/INT/134/USA, GCP/SEC/004/TUR and FAO Regular Programme.....	17
Table N.4 - Tentative workplan and budget for Project GCP/INT/238/JPN.....	20

## LIST OF ACRONYMS AND ABBREVIATIONS

AGP	Plant Production and Protection Division (FAO)
AGPMM	“Locusts and Other Transboundary Plant Pests and Diseases” Team (FAO)
a.i.	Active ingredient
ASDC	Automated System of Data Collection (FAO)
CBS	Cross-border surveys
CCA	Caucasus and Central Asia
CCALM	Caucasus and Central Asia Locust Management system (GIS, FAO)
CEI	Call of expression of interest
CIT	<i>Calliptamus italicus</i> (Linnaeus 1758), Italian Locust
DB	Database
DEM	Digital Elevation Module
DMA	<i>Dociostaurus maroccanus</i> (Thunberg 1815), Moroccan Locust
EC	Emulsifiable concentrate
FAO	Food and Agriculture Organization of the United Nations
FTPP	FAO-Turkey Partnership Programme
GIS	Geographic Information System
GPS	Global Positioning System
ha	hectare
IGR	Insect Growth Regulator
KazNIIZR	Kazakh Institute for Plant Protection
LMI	<i>Locusta migratoria migratoria</i> Linnaeus 1758, Asian Migratory Locust
LV	Low Volume
MKI	Milieukontakt International
PPE	Personal Protective Equipment
PRG	Pesticide Referee Group (FAO)
RP	Regular Programme (FAO)
SRUE	State Republican Unitary Enterprise “Locust Control” (Tajikistan)
TCP	Technical Cooperation Programme (FAO)
ToT	Training-of-Trainers
UzNIIZR	Uzbek Institute for Plant Protection
ULV	Ultra-Low Volume
UNDP	United Nations Development Programme
USA	United States of America
USAID	United States Agency for International Development
USD	US Dollars
VIZR	All-Russian Institute for Plant Protection

## INTRODUCTION

1. The Technical Workshop on Locusts in Caucasus and Central Asia (CCA) took place in Pushkin, Russian Federation, on 26-30 October 2015. It was organized by the Food and Agriculture Organization of the United Nations (FAO) in the framework of the “Programme to improve national and regional locust management in Caucasus and Central Asia”.
2. The following ten countries participated in the Technical Workshop: Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan. The total number of participants, including countries representatives, FAO staff, resources persons and observers, was 35. The List of Participants is given in Annex I.
3. The Technical Workshop started with an opening speech of Mr. Alexander Malko, Director of the Federal State Organization “Russian Agricultural Center” (Russian Agrocenter) of the Ministry of Agriculture, Russian Federation. He welcomed all the attendees and noted that the FAO’s Programme on locust management in CCA yielded tangible results in strengthening national anti-locust capacities and facilitating regional information exchanges between the ten CCA countries. He indicated that although many areas of Russia are situated in the zone of high-risk agriculture, the agriculture professionals work hard and achieve great results in crop production and protection. He informed that the phytosanitary monitoring against pests including locusts is performed by Russian Agrocenter which has 13 000 staff and representations in 78 administrative regions of Russia. He emphasized that Russia established great working relations with neighbouring countries, particularly Kazakhstan, on locust problems. Such cooperation is the key when dealing with such transboundary migratory pests as locusts.
4. Ms Annie Monard, Senior Officer, Team Leader, “Locusts and Other Transboundary Plant Pests and Diseases” (AGPMM), welcomed the participants to the seventh annual meeting on locusts in Caucasus and Central Asia. She thanked the Russian Federation for hosting the workshop and expressed her pleasure to meet again the delegates from the all ten countries. Since its inception in 2011 the Programme on locusts in CCA has contributed to strengthening national and regional management. This workshop would offer opportunity to report on activities and achievements during Year 4 of its implementation, discuss a number of technical issues as well as activities for the next year (Workplan for Year 5). The structure of the workshop would be similar to the ones of the previous years with the contribution of various resource persons, directly or during video conference. She indicated that this workshop was organized thanks to the project funded by United States Agency for International Development (USAID) (GCP/INT/134/USA) and the FAO Regular Programme. She concluded, wishing an interesting and fruitful workshop to everybody.

## OFFICERS OF THE SESSION

5. The following officers were elected:

Chairperson: Mr Alexander Malko (Russian Federation)

Vice-Chairperson: Mr Abdul Wadood Ghorbandi (Afghanistan)

Drafting Committee: Mr Dmitri Govorov (Russian Federation)

Ms Annie Monard, Senior Officer, Team Leader, AGPMM  
(FAO)

Ms Marion Chiris, Locust Programme Officer, AGPMM (FAO)

Mr Alexandre Latchininsky, Senior Locust Expert, International Consultant (FAO)

Ms Greta Graviglia, Operations Expert, International Consultant (FAO)

## AGENDA

6. The Agenda, as adopted, is given in Annex II.

## SESSION 1: NATIONAL LOCUST CAMPAIGNS IN 2015 AND FORECASTS FOR 2016

### National locust campaigns in 2015 (countries' presentations) (Item 4 of the Agenda)

7. The delegate from **Afghanistan** explained that the Moroccan Locust *Dociostaurus maroccanus* (DMA) followed by the Italian locust *Calliptamus italicus* (CIT) are the two important locust species in the country. They affect 19 provinces of Afghanistan. Chemical control was implemented in 11 out of these 19 regions by the Plant Protection and Quarantine Directorate of the Ministry of Agriculture, irrigation and livestock. The Directorate is staffed with 55 technical specialists in the capital and 272 in the provinces. Three pyrethroid and one Insect Growth Regulator (IGR) pesticides, both in water-based Emulsifiable Concentrate (EC) and Ultra-low Volume (ULV) formulations, were used in 2015. They were applied by hand-held, back-pack and vehicle-mounted sprayers. In general, the year 2015 experienced some decline in locust-treated areas in Afghanistan compared to 2014.
8. The delegate of **Kazakhstan** reported that monitoring of pests which fall under the category of "especially dangerous" is executed by State Enterprise "Republican Methodical Center of Phytosanitary Diagnostics and Forecasts" which has representations in 14 regions and 160 districts and a staff of 1 143 full-time and 437 seasonal workers. Locust control is funded entirely by the central government while grasshopper control is funded from local budgets. He presented a comprehensive overview on locust management in 2015, including human permanent and temporary resources, vehicles, etc. Infested areas by the three locust species (CIT, DMA and Asian Migratory locust *Locusta migratoria migratoria*, LMI) are divided in the proportion of eighty-four, five and eleven per cent, respectively. In 2015, all three locust species continued to decline. High proportion of parasitized egg-pods (up to 50% in some areas) is one indicator of such decline.
9. The delegate of **Kyrgyzstan** indicated that the total surveyed, infested and treated areas in 2015 were close to those in 2014. The bulk of the treatments was done against DMA. High infestations of DMA continued for several years in a row, which appears unusual for this pest. Some areas were difficult to access from ground and had to be treated aerially with two different types of aircraft. Aerial treatments were applied to almost 50% of all locust infestations. The delegate produced cost comparisons of using different spraying platforms which showed that the cheapest treatments were done from vehicle-mounted ULV sprayers (1.40 USD/hectare) while the most expensive ones were from AN-2 aircraft (3.30 USD/hectare). However, high costs of ULV pesticide formulations limit the use of this technology. Several pesticides from different chemical classes were used in 2015 and the total cost of the anti-locust campaign from national budget was of USD 326 300.

10. In **Tajikistan**, areas of locust infestations in 2015 were slightly higher than in 2014. Locust control in the Republic is thoroughly planned and well organized and implemented by the State Republican Unitary Enterprise (SRUE) “Locust Control” which has teams in three regions of the country. About 80% of all treatments are applied to DMA while remaining 20% to CIT. Pesticides used included pyrethroid and organophosphate formulations. Answering the question of the Kyrgyz delegate about the high costs of ULV pesticides, the delegate from Tajikistan explained that in most cases, ULV sprayers use water-based insecticide formulations in his country.
11. The delegate from **Turkmenistan** explained that DMA is the most important economic locust species in the country. In 2015 locust infested areas exhibited a sharp decline compared to previous years. All treatments were done using pyrethroid pesticides. Vehicle-mounted ULV sprayers showed good efficacy. The delegate also described mechanical methods of egg-pod control (harrowing and chiseling) although other delegates called into question this method as ecologically unsustainable for fragile semi-arid grassland habitats.
12. The delegate of **Uzbekistan** reported that in 2015, locust-infested areas were slightly higher than in 2014. DMA was the predominant economic pest followed by LMI and CIT. The delegate reiterated that in the recent years DMA breeding areas were found at higher altitudes than before, which complicated the control. Particularly serious situation was observed in the Aral Sea zone where LMI produced late-season hatching. The delegate requested technical assistance from FAO in the form of 4X4 vehicles and expert situation assessment to deal with this LMI emergency. Half of all treatments were done using 30 ULV vehicle-mounted sprayers, which showed high efficacy. The Republic uses domestically manufactured pesticides for locust control.
13. Delegate of **Armenia** said that in 2015 the locust situation in the country remained calm. The main locust pest –CIT– was observed at very low densities, and no state-funded locust control was implemented.
14. Delegate from **Azerbaijan** indicated that DMA is the most important economic locust pest in the country. It belongs to the list of “particularly dangerous pests” which are controlled through state funds. In 2015 DMA infested areas exhibited a sharp, more than 50% decline compared to 2014. Anti-locust treatments were done with pyrethroid insecticides. ULV sprayers AU8115 mounted on a pick-up truck proved highly efficient and Azerbaijan. The delegate also mentioned the unexpected arrival in July of LMI groups from North Caucasus that flew over the sea and that the issue was discussed with his Russian counterpart.
15. The delegate of **Georgia** reported that CIT was the dominant locust species. Its infested areas were slightly down compared to 2014. Yet the treated area was one of the highest in the past several years, second after 2014. Cool and very humid weather in the spring of 2015 resulted in very high and dense vegetation cover, which in some cases decreased the efficacy of locust control. Anti-locust treatments were implemented with ground sprayers and helicopters. ULV and Low Volume (LV) technology is increasingly used, particularly using vehicle-mounted sprayers.
16. The delegate of the **Russian Federation** reported that the total areas of locust infestation and control in 2015 continued to decline. Yet in some areas such as Orenburg region emergency situation was declared because of high CIT infestations. LMI produced localized outbreaks in Lower Volga area. DMA was observed on limited territories in Southern Russia. Although most of the treatments were done against nymphs, significant areas were also treated against adults. More than 40 different pesticides were used for anti-locust treatments in 2015. A new bio-insecticide based on the Russian strains of *Beauveria bassiana* fungus was registered for locust control in 2015. Bilateral collaboration with Kazakhstan was instrumental for both countries and a total of 286 711 hectares (ha) were jointly surveyed in 2015.

**Table N.1 - Surveyed, infested and treated areas in 2015 in CCA**

Country	Area (ha) – 2015		
	Surveyed	Infested	Treated
Afghanistan	156 500	> 160 000	136 313
Armenia	57 000	36 000	3 000
Azerbaijan	662 380	73 426	21 040
Georgia	110 000	50 000	33 400
Kazakhstan	18 349 403	4 837 499	3 287 750
Kyrgyzstan	82 163	62 359	59 584
Russian Federation*	13 709 990	2 533 170	797 380
Tajikistan	460 000	106 500	88 300
Turkmenistan	760 000	190 300	190 300
Uzbekistan	410 000	397 000	390 000

**Locust forecast for 2016 and preparation of the next campaign (Item 5)**

17. The countries provided locust forecast for 2016 in terms of the areas subject to treatment as follows (in ha):

**Table N.2 - Forecasted treated areas for 2016 in CCA**

Country	Area (ha) - subject to treatment
Afghanistan	> 160 000
Armenia	> 1 500
Azerbaijan	> 50 000
Georgia	> 40 000
Kazakhstan	1 781 989
Kyrgyzstan	59 584
Russia Federation*	173 300
Tajikistan	84 000 ± 10%
Turkmenistan	> 100 000
Uzbekistan	430 000

\* Russian Federation: information as of 25/10/2015; a more precise figure will be provided after mid-November 2015.

## SESSION 2: IMPLEMENTATION OF THE PROGRAMME TO IMPROVE LOCUST MANAGEMENT IN CAUCASUS AND CENTRAL ASIA

### Programme in 2015: overview on implementation and funding situation (Item 6)

18. The Locust Programme Officer, AGPMM, provided an overview of the implementation of the “Programme to improve national and regional locust management in Caucasus and Central Asia (CCA)” during Year 4 of the Programme, from 1<sup>st</sup> October 2014 to 30<sup>th</sup> September 2015. The main achievements for Year 4 were summarized as follows:

- **Result 1 – Regional cooperation developed.** National and regional bulletins on locust situations and management issued on a monthly basis from April to October 2015; Technical Workshop on Locusts in CCA held in November 2015 in Tbilisi, Georgia, allowing information and experience exchanges between the concerned countries; Study on possible mechanisms for long-term regional cooperation in CCA presented and discussed during the 2014 Technical Workshop, with related communications in 2015.
- **Result 2 - National capacities strengthened.** Monograph on the Italian Locust (CIT) sub-finalized and two other monographs on the Moroccan Locust (DMA) and the Asian Migratory Locust (LMI) under finalization; Fellowships: calls for interest for students and hosting institutions published, selection ensured by the *ad hoc* E-Committee and FAO and arrangements taken with hosting institutions in view of the organization of three post-graduate fellowships from academic year 2015/2016.
- **Result 3 - Locust issues better anticipated.** Training on locust monitoring and information management delivered to the benefit of 12 Locust/Plant protection Experts from Armenia, Azerbaijan and Georgia in Kakheti, Georgia, in May 2015; One joint survey and three cross-border surveys organized in May 2015 for a total of 42 Locust Experts as follows: Armenia/Azerbaijan/Georgia/Russia (joint survey in Georgia), Kyrgyzstan and Tajikistan, Kyrgyzstan and Uzbekistan, and Tajikistan and Uzbekistan, in the latter case in presence of a FAO International Consultant, Senior Locust Expert; Preparatory work ensured for the regional Workshop on Locust Contingency Planning in CCA, scheduled on 21-23 October 2015.

Concerning the development of the Automated System for Data Collection (ASDC) and Locust Geographical Information System (GIS) in CCA: further testing of the ASDC during the 2015 locust campaign by three pilot countries, Georgia, the Russian Federation and Uzbekistan; Recommendations for ASDC improvement formulated by the pilot countries and FAO experts; Finalization of the technical specifications for a single, unified database at regional and national levels for the locust GIS in CCA; Preparation of the Letter of Agreement/Contract with the "Institute of Space Technics and Technologies" in Almaty, Kazakhstan, with the double-objective to update ASDC after two years of testing and develop the database and its management system for the locust GIS.

- **Result 4 - Response mechanisms to locust outbreaks improved.** Video tutorial on ULV spraying against locusts prepared in English and Russian (including new shootings of images in Morocco); Advocacy and tutorial videos on the use of biopesticides in locust control prepared in English and Russian; Participation of one Locust Expert from CCA in the 10<sup>th</sup> meeting of the Pesticide Referee Group (PRG) held in December 2014 in Tunis, Tunisia; Participation of two Locust Experts from CCA in the “Stakeholder Workshop on procurement and supply of pesticides for locust control,” held in September 2015 in FAO-Headquarters, Rome, Italy.

- **Result 5 - Impact on human health and the environment mitigated.** Training session on mitigating and monitoring the impact of locust control operations on human health and the environment delivered to 14 Locust Experts in Uzbekistan in August 2015; Technical and operational support provided to the newly-created Human Health and Environmental Monitoring Team in Tajikistan, including delivery of cholinesterase kits as well as environmental monitoring and sampling material; Pilot activity to develop a comprehensive system for environmental and health monitoring of locust control carried out in June 2015 in Kyrgyzstan –at this occasion, on-the-job training delivered by the Environmental Expert to four Locust Experts in Naryn and Chuy regions and cholinesterase kits delivered; Study on the "Fate of insecticides used for locust control on pasture in Kyrgyzstan" finalized by two FAO Consultants, Toxicologist and Locust Expert, and reviewed by a third FAO Consultant, Environmental Expert; E-Committee on empty container management of pesticides used for locust control: Terms of Reference developed, main responsible identified and Letter of Agreement prepared.
  - **Result 6 - Public information and awareness increased.** FAO Website "Locust Watch in CCA" regularly updated with monthly bulletins; Leaflets produced for advocacy purpose; Negotiation, finalization and follow-up of the approval process of the three-year project, of USD 5 million, to the benefit of Afghanistan, Kyrgyzstan and Tajikistan (GCP/INT/238/JPN).
19. According to the Workplan for Year 4, a few activities were not implemented in 2015. They included: the preparation of Practical Guidelines for the management of the three locust pests in CCA" (Activity 2.2.2 c), subject to the finalization of the three monographs on locust pests in CCA (postponed to Year 5); The development of a national GIS for Georgia: it was agreed to have a single, unified database both for the regional and national GIS and there was therefore no point in developing a specific national GIS (Activity 3.3.1 d); The participation of Afghanistan in the training session on mitigating and monitoring the impact of locust control operations on human health and the environment, held in Uzbekistan in August 2015, due to administrative difficulties expressed by the Uzbek counterpart (Activity 5.1.1 & 5.2.1); The update of the FAO website "Locust Watch in CCA" due to lack of time. In addition, the organization of the fellowships proved to be difficult: two of the three selected candidates renounced to pursue the post-graduate study, with late notice (meaning that a new call for interest will need to be launched).
  20. Afterwards, the Locust Programme Officer highlighted the following: in March 2015, Uzbekistan signed project GCP/SEC/004/TUR, funded against the FAO-Turkey Partnership Programme (FTPP); this allows this country to benefit from activities funded against this project. Following the signature ceremony of project GCP/INT/238/JPN, which took place two days before this workshop, on 24 October 2015, between the Tajik, FAO and Japanese counterparts, delegates of Kyrgyzstan and Afghanistan were encouraged to follow-up on the official signature of the project to allow it to be operational.
  21. It was indicated that only a bit more than one year was left before the end of project GCP/INT/134/USA, funded by USAID, which covers a number of Programme core activities to the benefit of the ten countries and had been recently extended up to April 2017 (with no additional funding). A brainstorming should therefore be made by all countries and FAO on the progresses made as well as on needs during Year 5 of the Programme and beyond.
  22. In this context, it was recommended that countries and FAO pursue joint efforts to mobilize additional funds for the Programme. The example of project GCP/INT/238/JPN, following an initiative of Tajikistan, to its own benefit and to the benefit of two other CCA countries, was an excellent example of common resource mobilization by a country and FAO, working hand in hand to the benefit of the region and should be replicated for further resource mobilization. It was also reminded that countries which have the capacity to do so can act both as

beneficiary and donor for the Programme.

23. Last but not least, at institutional level, following the presentation and discussion of the study on possible mechanisms for long-term regional cooperation on locusts in CCA during the 2014 Technical Workshop, the FAO official letter sent to countries in December 2014 and the seven responses received (but only two in official format), countries were invited to pursue the reflection on which type of regional cooperation would be possible and sustainable in the long-run.
24. The Locust Programme Officer then presented the expenditures for Year 4 (estimates only, subject to accountability adjustments during project implementation and at their closure). The workplan had been prepared and approved on the basis of two main available funding sources: the USAID-funded project (GPC/INT/134/USA) and the project funded by the FAO-Turkish Partnership Programme, FTTP (GCP/SEC/004/TUR); there was also a small envelop against the national project funded by the FAO Technical Cooperation Programme (TCP) for Tajikistan (TCP/TAJ/3401) as well as a contribution of the FAO Regular Programme. In total, the expenditures for Year 4 of the Programme were of USD 380 193, representing 68,8 per cent of the planned budget of USD 552 000 (See Table in Annex 3). Details were given on each funding source.
25. Concerning the USAID project (GCP/INT/134/USA), USD 301 838 were spent, representing 86 per cent of the initial budget of USD 352 000 for Year 4. The main reasons was as follows: the preparation of the Practical Guidelines for the management of the three locust pests in CCA was postponed to Year 5 (Activity 2.2.c); The Technical Support Service (TSS) will be claimed during Year 5, and not Year 4. It was also noted that: due to an unexpected contribution of the FAO Regular Programme concerning the preparation of the videos on biopesticides, less funds that initially planned were used against the USAID project, allowing some savings for other activities. Two unplanned activities/expenditures occurred during Year 4 (Activity 4.2.3), namely the participation of CCA Locust Experts in two meetings: the Pesticide Referee Group (PRG), held in December 2014 attended by one Expert (it had been agreed during a previous Workshop, in 2010, that participation from CCA would be ensured during the next PRG, whenever it would be organized); and the Stakeholder Workshop on procurement and supply of pesticides for locust control, held in September 2015, which was a follow up to the 10<sup>th</sup> PRG meeting (two CCA experts).
26. As far as project GCP/SEC/004/TUR (FTTP) was concerned, only USD 43 348 were spent, representing 25 per cent of the annual budget of USD 185 100. The major part of such budget included the full amount planned for the three fellowships on locusts (USD 141 500). As of end September 2015, related expenditures included only a small envelop for the E-Committee as well as other expenses related to translation and advertisement of the calls for interest but no expenses directly related to the studies. Reasons are that one fellow will start in January 2016 (no expenses yet) and that the other two selected candidates renounced to the fellowships, meaning that the studies had to be postponed to academic year 2016/17. The other activities were conducted as planned.
27. The small expenditures of the national project TCP/TAJ/3401 for Tajikistan during Year 4, of USD 6 175 concerned only some accountability adjustments as well as the travel of Tajik delegates to the 2014 annual Technical Workshop on Locusts in CCA held in November 2014 in Georgia (the project ended at the end of the same month).
28. Although no contribution was initially expected from the FAO Regular Programme for Year 4, an envelope of USD 22 800 was made available, as a contribution to the realization of the videos on biopesticides and for translation costs of the project document of project GCP/INT/238/JPN (project funded by Japan).

29. During the discussions, the delegates thanked FAO for the coordination and implementation of the Programme and underlined how such annual meetings and activities, including the training sessions and cross-border surveys, were important for strengthening capacities as well as regional cooperation.

## **Regional cooperation in 2015 (Item 7)**

### Regular Information Sharing (Item 7a)

30. The Senior Officer, Team Leader, AGPMM, introduced the topic, explaining that she would summarize the main features (without repeating what had already been said during the previous workshops). In particular, she underlined: the importance to insert maps; the fact that the correct color for the header had to be used, i.e. consistent with the bulletin content; the necessity to ensure continuity with previous bulletins; the need to document the cross-border surveys and provide detailed weather data. She also indicated that it was crucial to specify the number of hectares treated during the given month (even if larger figures could also be provided for the campaign). The Senior Officer indicated that at a later stage of the week, she would like to have face-to-face meetings with the delegations in order to highlight the rooms for improvements, according to the specific features of each country.
31. Afterwards, the floor was given to the countries for comments concerning the preparation of the monthly national bulletins during the 2015 anti-locust campaign and the regional ones.
- The delegate from Azerbaijan indicated that information was fully inserted in the monthly bulletins and that no color was used in the header as the text informed about the current risk.
  - The delegate from Armenia explained that everything should be fine in the national bulletins, which were transmitted timely; that no maps were inserted so far but this would improve next year.
  - The delegate from Afghanistan mentioned that insecurity issues limited the accuracy of some data and that the maximum will do next year to add maps and send the bulletins timely.
  - The delegate from Georgia indicated that they tried to send the bulletins timely but that sometimes, they were sent late or lacked details due to partial or late receipt of field information; that the situation would be improved next year, including concerning inaccuracies, which could be solved thanks to direct exchanges with the Senior Officer, Team Leader, AGPMM.
  - The delegate from Kazakhstan mentioned that all required information was provided from all regions and the bulletins were sent timely with detailed data; that no maps were inserted so far but that this would be done in future.
  - The delegate from Kyrgyzstan informed that field visits could sometimes delay the preparation of the bulletin and that there were issues in providing maps, which could be solved next year.
  - The delegate from Russia considered that the quality of bulletins had been improved and mentioned the regular exchanges with FAO.
  - The delegate from Tajikistan indicated that bulletins were sent on time and that he had no particular remark on the format.
  - The delegate from Turkmenistan confirmed that no bulletin was sent so far but that full attention would be paid to that issue in the future; he would also provide his email.

- The delegate from Uzbekistan indicated that the national bulletins were not always sent timely because of seasonal work and lack of internet connection in the border areas; that everything would be done to improve the situation and include maps in the bulletins.
32. The Chairman concluded in referring to the FAO website “Locust Watch – Locusts in CCA” and valuable information available there, including the regional bulletins.

Cross-border or joint surveys (Item 7b)

33. In 2015 four joint and cross-border surveys (CBS) took place in CCA:

- Armenia-Azerbaijan-Georgia-Russia, on 3-6 May;
- Kyrgyzstan-Tajikistan, on 4-7 May;
- Kyrgyzstan-Uzbekistan, on 9 -13 May;
- Tajikistan-Uzbekistan, on 20-23 May.

34. Participating countries made presentations on the CBS according to the templates provided by FAO.

- **Armenia-Azerbaijan-Georgia-Russia, 3-6 May 2015.**

35. The delegate from Georgia presented the CBS which took place in the Kakheti region, in eastern Georgia, along the borders with Azerbaijan and Russia. Specifically, the CBS was conducted in Akhmeta and Dedoplistskaro areas. Fourteen specialists participated from Armenia (three), Azerbaijan (three), Georgia (five) and Russia (three). During the CBS, locusts were still in the embryonic stage (egg-pods in the soil). The objective was to find egg-beds of the Italian Locust (CIT), which threatens the agricultural production in the fertile Alazani Valley situated nearby. This objective was successfully achieved. Data collected during the CBS were entered in ASDC, which also allowed to practice data collection using this new technology. As such, CIT egg-bed locations were accurately recorded and mapped. These areas will receive careful attention from the Georgian Plant Protection specialists when hatching starts later in the season. Participants from all four countries emphasized the value of such CBS and expressed the hope that these surveys will be continued in the future. It was also said that the event was covered by media (press release, TV interviews).

- **Kyrgyzstan-Tajikistan, 4-7 May 2015**

36. The delegate from Tajikistan made a well-illustrated presentation on the CBS which took place in Sughd region in Tajikistan (4-5 May) and Batken region in Kyrgyzstan (6-7 May). Four specialists from SRUE “Locust Control” participated from the Tajik side, and four specialists from the Department of Chemicalization and Plant Protection participated from the Kyrgyz side. The objective was to find infestations of the Moroccan locust (DMA) occurring in the proximity of the Tajik-Kyrgyz border. During the CBS, DMA populations were represented by 2<sup>nd</sup> and 3<sup>rd</sup> instar nymphs. In total, 21 000 ha were surveyed including 10 000 ha in Tajikistan and 11 000 ha in Kyrgyzstan. The CBS allowed to identify DMA infestations threatening crops near the joint border. In particular, an area “Akchechok” in Batken region, Kyrgyzstan, was of special concern because it could produce DMA populations, which would threaten agricultural fields situated across the border in Tajikistan. Although the area was situated in Kyrgyzstan, it could be accessed only through Tajikistan, which created a serious problem. The CBS was very instrumental in allowing access to such area. Both countries agreed to cooperate in monitoring and treating this high risk area. CBS participants from the two countries established good working relations helping them to efficiently address locust issues in the future. Delegates from both countries emphasized the necessity to continue such CBS in the following years.

- **Kyrgyzstan-Uzbekistan, 9-13 May 2015**

37. The delegate from Kyrgyzstan made a presentation about the CBS in Fergana Valley, which took place in Osh, Jalal-Abad and Batken regions of Kyrgyzstan (9-11 May) and Andijan, Namangan and Fergana regions of Uzbekistan (12-13 May). Twelve specialists participated in the CBS, six from each country. The total area surveyed was 28 000 ha. DMA population was represented mostly by 2<sup>nd</sup> and 3<sup>rd</sup> instar nymphs. During the CBS, DMA infestations on the Uzbek side were located on 1 450 ha and treated. On the Kyrgyz side, a DMA infestation of 650 ha was found in Batken region. It threatened crop fields situated in 1 000 to 1 200 m across the border on the Uzbek side. Upon agreement with Kyrgyzstan, this area was treated by Uzbek spraying teams. In total, an area of 3 500 ha was treated in the neutral zone, which was a very important outcome of the CBS. The CBS also allowed identifying potential areas of DMA infestations situated in close to the Kyrgyz-Uzbek border. These areas will be under careful scrutiny by specialists from both countries and if needed, joint treatments were anticipated. CBS participants established good working contacts and continued to exchange locust information to the benefit of both countries. The delegate from Uzbekistan complemented this presentation and emphasized the usefulness of this CBS. Countries indicated the need to reiterate such CBS next year.

- **Tajikistan-Uzbekistan, 20-23 May 2015**

38. Upon the decision made during the previous Annual Technical Workshop on locusts in CCA, this CBS targeting DMA infestations was conducted in presence of the FAO International Consultant, Senior Locust Expert, Mr. A. Latchininsky. The four-day CBS was conducted in Khatlon region and Districts of Republican Subordination in Tajikistan (20-21 May) and in Surkhandarya region in Uzbekistan (22-23 May). Three specialists participated from Tajikistan and four from Uzbekistan. The total area surveyed was of 90 000 ha, which included 50 000 ha in Tajikistan and 43 000 ha in Uzbekistan. During the CBS, DMA populations were in adult stage and gregarious phase and exhibited short-distance swarm flights. Maximum density was 35 adults/m<sup>2</sup> on Tajik side and 12 adults/m<sup>2</sup> on Uzbek side. The most serious situation was observed in the River Kafirnigan Valley where the neutral zone of 4 500 ha is inaccessible for monitoring or treatments. DMA swarms can lay eggs in this neutral zone and, after hatching during next spring, damage the agricultural fields on both sides of the Tajik-Uzbek border. The areas of irrigated crops in proximity to the border are of 1 520 ha in Tajikistan and 4 500 ha in Uzbekistan. The delegate from Uzbekistan emphasized that the River Kafirnigan Valley is the most problematic DMA area between the two countries, and the CBS allowed to establish strong working relations between the locust control specialists from the two countries. The Senior Locust Expert noted that the visa regimen between the two countries impedes the joint anti-locust efforts. Therefore, the CBS was particularly instrumental in assessing the DMA situation near the border and developing the joint strategy on addressing the locust issues. It was indicated that such CBS should be carried out again next year, however a bit earlier during spring, in time to observe hatching. The results of the CBS are available in the Senior Locust Expert's report (in Russian) on the FAO CCA-Locust Watch website at:

[http://www.fao.org/aq/locusts-CCA/common/ecq/1012/ru/2015\\_TAJ\\_UZB\\_GEO\\_Report\\_RUS\\_final.pdf](http://www.fao.org/aq/locusts-CCA/common/ecq/1012/ru/2015_TAJ_UZB_GEO_Report_RUS_final.pdf)

## **National capacities' development (Item 8 of the Agenda)**

### Trainings held in 2015

- **Training on locust monitoring and information management: Armenia, Azerbaijan and Georgia - Kakheti, Georgia, May 2015**

39. The delegate of Georgia presented the training session on locust monitoring and information management which took place from 26 to 30 May 2015 in Lopota Lake resort, Kakheti region, Georgia. Twelve specialists from Armenia (three), Azerbaijan (three) and Georgia (six) benefitted from the joint training delivered by the FAO International Consultant, Senior Locust Expert, Mr A. Latchininsky. The training included three days of theoretical training and two days of practical exercises in the field. Special attention was given to the use of Global Positioning System (GPS) devices for locust monitoring, filling out the FAO Survey and Spray Monitoring forms as well as to preparing the national monthly bulletins. The trainer offered an array of very interesting presentations which were delivered in Russian, without any language barrier. A certificate was released to all participants at the end of the training.
40. The delegate of Azerbaijan thanked FAO for the very interesting workshop. He emphasized that it was a positive incentive in locust control work and that the presentations, videos and background material provided during the training by FAO on flash-drives have been consulted afterwards. In addition, the delegate proposed FAO to organize a one-week training in Azerbaijan to the benefit of local specialists. The delegate of Armenia informed that the training material was shared with national experts and that it was very useful to improve their knowledge.
41. The delegate of Afghanistan took the floor to request FAO the possibility of organizing training on the same topics, focusing on the use of GPS and maps. The FAO Locust Programme Officer informed that a Training of Trainers (ToT) covering locust monitoring and information management as well as spraying techniques and risk reduction on human health and the environment is planned in early March 2016 in the framework of the recently approved project funded by Japan.
42. The Senior Locust Expert added that the organization of the training was very good, that a broad approach was used to increase participants' knowledge and that the material provided could be used at the national level for further training, which is crucial.

- **Training on mitigating and monitoring the impact of locust control on human health and the environment - Uzbekistan, August 2015**

43. The delegate of Uzbekistan presented the training session on mitigating and monitoring the impact of locust control operations on human health and the environment, which took place from 24 to 28 August 2015 in Khodjikent, Tashkent province, Uzbekistan. Fourteen national specialists, all regularly involved in locust control, benefitted from the training delivered by the FAO International Consultant, Senior Environmental Expert, Mr H. Van der Valk. The location, a mountainous area at about 60 km from Tashkent and c.a. 3 000 m above sea level, was selected for the presence of locusts, as chemical treatments had not been carried out yet in that area.
44. The workshop covered the following topics, with both theoretical and practical sessions: (1) Mitigation of the impact of locust control on human health and the environment including precautions to be taken before, during and after locust control operations, use of personal protective equipment (PPE), safe pesticide handling, storage and transportation, empty containers disposal, awareness, etc.; (2) Monitoring of the impact of locust control on human

health and the environment incl. use of standard forms to monitor the impact of control operations and assess their potential effects on human health and non-target organisms, search for presence of pesticide residues in water and vegetation. Practical sessions (demonstrations) were organized on PPE and first aid and a certificate was released to participants at the end of the training. The delegate from Uzbekistan noted that, in general, the knowledge of participants was high and in line with FAO requirements.

45. The FAO Locust Programme Officer reported about the positive feedback of the trainer in terms of increase of the participants' knowledge and that the latter had recommended to continue to carry out national training and refreshing courses and to strengthen information on measures to reduce health and environmental risks. She also reminded that, so far, eight out of the ten countries covered by the Programme had received training on mitigating and monitoring the impact of locust control on human health and the environment and indicated that Afghanistan will benefit from such training during the ToT planned in March 2016. The delegate from Azerbaijan informed that trainings on these topics were planned for local specialists in his country.

#### Update on fellowships on locust management (Item 8b)

46. The FAO Locust Programme Officer, AGPMM, introduced this item by reminding delegates that the project funded under the FAO-Turkish Partnership Programme (GCP/SEC/004/TUR) covered three fellowships on locust issues, one PhD or equivalent and two Masters (or vice-versa). During Year3 of the Programme (October 2013 – September 2014), when this project became operational, an E-Committee was activated. It is coordinated by Mr A. Latchinsky and composed of CCA locust experts, namely, Mr Gapparov (Uzbekistan), Mr Govorov (Russian Federation), Mr Sergeev (Russian Federation), Ms Abadshidze (Georgia) and Mr Kambulin (Kazakhstan), as well as FAO Experts. The calls for expression of interest (CEI) for students and hosting institutions were prepared and presented to all countries during the annual Workshop on Locusts in CCA, held in Tbilisi, Georgia, in November 2014. Such calls for interest included selection criteria as well as 11 themes of common interest for locust management in all ten CCA countries that fellows should address. The fellowships were open to the nationals of the countries having signed the project document, i.e. Azerbaijan, Kazakhstan, Kyrgyzstan and Tajikistan. There were no geographic restrictions, however, for hosting institutions, which could be situated within or outside CCA.
47. During Year 4 of the Programme (October 2014 – September 2015), such calls for interest were advertised, initially from 15<sup>th</sup> January to 20<sup>th</sup> March 2015. Considering that Uzbekistan signed the project on 16 March 2015, the deadline was extended up to 3<sup>rd</sup> April 2015 to give Uzbek students a possibility to also present their candidatures. Advertisement was made by: sending official letters to the Ministries of Agriculture (MoA) of the concerned countries; posting the CEI on the FAO website “Locust Watch in CCA”, on FAO and United Nations Development Programme (UNDP) national offices' websites as well as on MoA websites; posting the CEI in local newspapers in Azerbaijan, Kazakhstan, Kyrgyzstan and Tajikistan; asking national focal points and FAO colleagues in CCA countries to dispatch widely the CEI through the relevant public administrations, universities and technical networks; sending the CEI to FAO technical network. A specific mailbox was created by FAO to receive all applications.
48. The selection took place in April and May 2015. To that end, a matrix was prepared in order to ensure a transparent and competitive selection of the students and hosting institutions, built on the basis of the eligibility and selection criteria provided in the call for interest. The information submitted by students and hosting institutions was processed and the E-Committee ranked the candidates on this basis. It combined the selection of the students

and of the hosting institutions to ensure the best match between the candidate's interests and the expertise available at the hosting institution.

49. The FAO International Consultant, Senior Locust Expert, indicated that out of ten candidatures received from students, eight dossiers were complete. Those candidates were from Kyrgyzstan (1), Kazakhstan (3) and Tajikistan (4) and, in total, there were six males and two females (from Kazakhstan and Tajikistan). Surprisingly only two candidatures were received from the hosting institutions, i.e. the All-Russian Institute of Plant Protection (VIZR), Saint-Petersburg, Russian Federation, and the Central Asian Institute for Applied Geosciences, Bishkek, Kyrgyzstan. As several candidates requested to pursue post-graduate studies in the Kazakh Agrarian University, Almaty, Kazakhstan, liaison was ensured also with this potential hosting institution.
50. Three students were selected by the E-Committee (they were informed on 3rd June): Mr Almaz Alakunov, from Kyrgyzstan, for a PhD on "Application of satellite images and Geographic Information Systems (GIS) to locust monitoring, risk assessment and forecasting" to be conducted both with the Kyrgyz National Agrarian University (it was contacted on this occasion) and the Central Asian Institute for Applied geosciences, in Bishkek, Kyrgyzstan. Liaison is ensured with those hosting institutions and the PhD should start in January 2016.
51. The two other students were a Tajik national (PhD, Topic: Evaluation of new strategies and tactics of locust control, Kazakh Agrarian University, Almaty, Kazakhstan) and a Kazakh national (Master, Species composition and role in population dynamics of natural enemies of locusts, Kazakh Agrarian University, Almaty, Kazakhstan). However, those two candidates renounced respectively on 13 August and 10 September 2015. The second-ranked candidate for the Master (a national from Tajikistan, proposed topic: "Locust control tactics and strategies" in the Kazakh Agrarian University, Almaty, Kazakhstan) showed interest in pursuing the course. However, because the academic year had started already, the E-Committee agreed to postpone the course to the next academic year (2016/17) to ensure the timely start of the study.
52. In view of such developments, the E-Committee decided that a new call for interest would be launched early for academic year, 2016/17, for two Masters (considering the time available before project end). In case the above-mentioned national from Tajikistan would still be interested, he should be given priority for one of the two Masters.
53. During the discussion, Mr Alakunov who is part of the Kyrgyz delegation, expressed his gratitude for having been selected and given the possibility of conducting a PhD. The Russian delegate also informed the assembly of a special programme allowing some countries to send students free of charge in Russia to the Patrice Lumumba University, in Moscow; he invited delegates to contact him for more information.

#### Presentation of the monographs on the three locust pests (Item 8c)

54. The FAO International Consultant, Senior Locust Expert, Mr A. Latchininsky, informed the delegates about the progress in preparing the three monographs on the main CCA locust species, CIT, DMA and LMI. He indicated that this work is behind schedule and, as the coordinator of the whole project, took full responsibility for this delay. Regarding the anticipated dates of monographs finalization, the CIT book is in its final editing stages, while the LMI book should be finished before the end of the 2015 calendar year and DMA book soon after that.
55. Mr Michael Sergeev, Professor of Novosibirsk State University, Russian Federation, presented the CIT monograph (in Russian) and provided a printed copy of it to FAO. The

book is authored by specialists from Russia, Kazakhstan, Uzbekistan, Turkmenistan and the United States. He went through the Table of Contents and showed titles of main chapters as well as some illustrations. In total, the book will have over 300 pages of A4 format. The reference section contains over 450 entries. Upon finalization, the monograph will be available for downloading free of charge from the FAO CCA-Locust Watch website<sup>1</sup>. FAO added that the possibility of using its own funds will be explored to ensure the translation into English of the monographs. Printing will be subject to availability of additional funds.

### **Workshop on locust contingency plans in CCA: main outcomes (Item 9)**

56. The Locust Programme Officer, AGPMM, made a short presentation of the Workshop on Locust Contingency Planning in CCA held the previous week, on 21-23 October 2015, in Pushkin, Russian Federation. During the workshop, FAO stressed that a contingency plan should help addressing various locust situations with two main objectives: (a) to prevent a crisis; and (b) in case it occurs, to respond timely and adequately to such a crisis. Indeed, it is a tool which allows organizing in advance all measures to be taken in a given situation - thus allowing to anticipate- and which helps also communicating with decision-makers, mobilizing resources and advocating, both at the national level and, if needed, at the international one. The workshop allowed conducting a common brainstorming on contingency planning. The starting point was the presentations made by each country on the existing legislation, plans and other tools for risk-management at the national level. The experience of the Executive Secretary of the FAO Commission for controlling the Desert Locust in the Western region (Western and North-western Africa) was also shared. It was followed by a presentation of the methodological approach for risk management made by the FAO Agronomist, AGPMM. Then, a reflection was carried out, in working groups, on the various risk levels in each country and their classification as low, medium or high risk as well as on the transition from a prevention scenario to a crisis one. The proposed Locust Prevention Contingency Plan and the Locust Emergency Contingency Plan were presented and discussed, with focus on the mandate and tasks of a National Coordination Body (working groups), which needs to be activated in case of a crisis considering that a number of various ministries and stakeholders are involved. At workshop completion, delegates agreed that the meeting was successful as it has allowed exchanging knowledge and experience on how to prevent and better respond to a locust crisis, on the basis of a methodological tool that could be used at the national level.

### **Presentation of the newly-approved Japanese project for Afghanistan, Kyrgyzstan and Tajikistan (and synergies with other projects within the Programme) (Item 10)**

57. The Locust Programme Officer, AGPMM, indicated that following a request for assistance formulated in May 2014 by Tajikistan to its own benefit and the one of Afghanistan and Kyrgyzstan, discussions were held with the Japan International Cooperation Agency (JICA) and a project document, entitled "Project for improvement of locust management in Afghanistan, Kyrgyzstan and Tajikistan" (GCP/INT/238/JPN), was prepared by FAO in close liaison with the three countries and the donor. Many exchanges took place between the various stakeholders and after an agreement has been reached at the technical level, in March 2015, the three countries submitted official requests to the Government of Japan to support the project. After the respective internal approval process (Japan, FAO and Tajikistan), the signature ceremony was organized in Dushanbe on 24 October 2015, involving high-level authorities from Tajikistan as well as FAO and donor representatives. Operational start of the project will occur as soon as at least one of the other two beneficiary countries signs the project, in accordance with FAO rules.

---

<sup>1</sup> FAO website Locust Watch in CCA: <http://www.fao.org/ag/locusts-CCA/en/index.html>

58. The Locust Programme Officer then described the project, which has a budget of USD5 million, a three-year duration and contributes to the “Programme to improve national and regional locust management in Caucasus and Central Asia (CCA).” The project includes five expected results aiming at developing regional cooperation, strengthening national capacities, improving locust monitoring, supporting locust control and reducing risks for human health and the environment. More than 70 per cent of the total budget is allocated to equipment. The remaining 30 per cent of the budget is for implementation of the various activities as well as for the coordination of the project; in particular, a Project Implementation Unit (PIU), based in the FAO Representation in Tajikistan and composed of two staff, an Agricultural Officer and an Administrative/Programme Assistant will be established to facilitate project implementation.
59. It was indicated that although this specific project focuses on Afghanistan, Kyrgyzstan and Tajikistan, other CCA countries will also benefit from a number of activities and the whole Programme, for instance: the development of the practical guidelines on risk reduction, the wide use of the ASDC and of the national Locust Geographical Information System, etc.
60. During the discussions, the initiator and leading role of Tajikistan for mobilizing funds was underlined as well as the very good cooperation between Tajikistan and FAO during the project preparation, together with the JICA representatives.

#### **Programme of work during Year 5 (2016) and in the coming years: what’s next? (Item 11)**

61. The FAO Locust Programme Officer, AGPMM, presented the provisional workplan for the period going from 1<sup>st</sup> October 2015 to 30<sup>th</sup> September 2016, i.e. Year 5 of the FAO Programme in CCA. She indicated that there will be three available funding sources for the considered period: 1) the project funded by USAID (GCP/INT/134/USA); 2) the project funded by Turkey under the FAO-Turkey Partnership Programme – FPPP (GCP/SEC/004/TUR); 3) the contribution of the FAO Regular Programme (FAO RP). She also reminded that the USAID project would come to an end in April 2017, meaning that the 2016 locust campaign would be the last one covered by this project and that there was only one remaining annual Technical Workshop involving all the ten countries under this funding (2016). USAID project balance has therefore been allocated for activities planned under Year 5, with the exception of 2016 annual Technical Workshop (falling under Year 6).
62. In addition, following the ceremony of signature between representatives of Tajikistan, Japan and FAO, organized on 24 October 2015 in Dushanbe, Tajikistan, Project GCP/INT/238/JPN for improvement of locust management in Afghanistan, Kyrgyzstan and Tajikistan should become operational during Year 5 (pending signature of at least one additional country).
63. As per the work plan presented in the below **Table 1**, the main activities envisaged for Year 5 against the ongoing projects **USAID, FPPP and RP** will include:
  - **Under Result 1:**
    - Preparation of monthly regional and national bulletins (against USAID and FAO RP funding): it was indicated that as a transition phase, one day per month (and not three as during the previous years) would be allocated for the FAO National Consultants in charge of the preparation of the monthly national bulletins.
    - Organization of the annual Technical Workshop held in October 2015 in Pushkin, Russian Federation (USAID and FAO RP).

- **Under Result 2:**
  - Participation of two Uzbek Locust Experts in the Training-of-Trainers organized in March 2016 in Tajikistan (against Japanese project), subject to availability of funds (USAID).
  - Preparation of practical guidelines on the three locust pests present in CCA (FAO RP).
  - Organization of the fellowships on locust issues (FTPP).
  
- **Under Result 3:**
  - Provision of FAO technical assistance, i.e. LMI assessment mission in Karakalpakstan, Uzbekistan – First half of June (FTPP).
  - Organization of four cross-border surveys (USAID): Caucasian countries and Russian Federation (*April/May 2016*); Kyrgyzstan-Uzbekistan (*16-25 May, Fergana Valley*); Tajikistan-Uzbekistan (*20-30 April, Khatlon and Surkhandaya*); Turkmenistan-Uzbekistan (*First half of April*).
  - Contribution to a regional workshop on locust monitoring (including ASDC and GIS) organized in Orenburg by the Russian Federation, in early April 2016 to the benefit of all CCA countries. It was agreed that the FAO Programme would cover air-tickets of some representatives as well as, if possible, of the FAO International Consultants, GIS Expert and Senior Locust Expert (USAID, FTTP), while the Russian Federation would cover all other costs. All delegates and FAO representatives thanked warmly the Russian Federation for this outstanding initiative.
  - Development of the GIS (USAID), in particular of algorithms for summarizing, analyzing and forecasting.
  - Organization of the Workshop on Locust Contingency Planning in CCA held in October 2015 in Pushkin, Russian Federation (USAID and FAO RP).
  
- **Other:**
  - Allocation of a financial envelope for the supervision, coordination and implementation of the Programme (USAID and FTTP).

**Table N.3 - Workplan and budget for Year 5- Project GCP/INT/134/USA, GCP/SEC/004/TUR and FAO Regular Programme**

Res. & Act.	Description - Activities envisaged for Year 5	Beneficiaries countries					TOTAL BUDGET for Year 5 (USD)	AVAILABLE FUNDS FOR YEAR 5 (as of October 2015)		
		Year 1	Year 2	Year 3	Year 4	Year 5		USAID 2011-2017	TURKEY 2014-2018	FAO Regular Programme
<b>R1 - Regional cooperation</b>							<b>83,000</b>	<b>68,000</b>	<b>0</b>	<b>15,000</b>
1.1. Facilitate regional exchanges to manage locust situations		all	all	all	all	all	83,000	68,000		15,000
1.1.1. Create/maintain regular regional information sharing of standardized data (Nat. Cslt for bulletins)		all	all	all	all	all	21,000	18,000		3,000
1.1.2. Allow direct experience exchange (technical workshop)		all	all	all	all	all	62,000	50,000		12,000
1.2. Develop coordination, including through transboundary policy		all	all	all	all	all	0			
1.3. Identify the best long-term solution for sustainable regional cooperation		(year 3)	(year 3)	(year 3/year4)	all	all	0			
<b>R2 - National capacities</b>							<b>151,658</b>	<b>0</b>	<b>134,658</b>	<b>17,000</b>
2.1. Training-of-Trainers (ToT) programme - locust management		no funding	no funding	no funding	no funding	AFG-KYR-TAJ	0			
2.2. Make available/accessible background documentation on locust pests		all	all	all	all	all	17,000			17,000
a Biblio & Material to be made available (e-committee)		all	all	all	all	all	0			
b Monographies		all	all	all	all	all	0			
c Guidelines		all	all	all	all	all	17,000			17,000
2.3. Allow internships and post-graduate formation							134,658		134,658	
a One-month internship		KAZ	KYR+RUS+TAJ+UZB	AZE/GEO	no funding	AFG-KYR	0			
b Fellowship: 2 or 3-year diploma for 3 students & E-committee		none	none	3 students	3 students	3 students	134,658		134,658	
2.4. Promote and support applied research		no funding	no funding	no funding	no funding	no funding	0			
a Two grants for applied research		no funding	no funding	no funding	no funding	no funding	0			
b Entomological and chemical equipment for 6 laboratories		no funding	no funding	no funding	no funding	no funding	0			
<b>R3 - Locust issues and disasters better anticipated and mitigated</b>							<b>143,500</b>	<b>115,000</b>	<b>20,000</b>	<b>8,500</b>
3.1. Improve survey operations for better field locust monitoring							30,000	10,000	20,000	
3.1.1. Strengthen human capacities (techn. consultations on survey)		AFG-TAJ-KYR	RUS&KAZ	UZB	ARM-AZE-GEO	none	30,000	10,000	20,000	
3.1.2. Strengthen operational capacities (survey equipment)		all	none	none	none	AFG-KYR-TAJ	0			
3.2. Organize regular cross-border surveys		4	4	2	3		25,000	25,000		
3.3. Develop monitoring and analyzing systems		all	all	all	all		45,000	45,000		
3.3.1. Extend use of Geographical Information System and remote sensing		all	all	all with 2 pilot countries	all with 3 pilot countries		45,000	45,000		
3.3.2. Improve forecasting		(year 5)	(year 5)	(year 5)	(year 5)	none	0			
3.4. Enhance preparedness for risk reduction - contingency plans		(year 5)	(year 5)	(year 5)	(year 5)	all	43,500	35,000		8,500
<b>R4 - Improved response mechanisms to locust outbreaks</b>							<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
4.1. Allow early reaction and appropriate control operations							0			
4.1.1. Strengthen human capacities (techn. consultations on control)		AZE	TAJ-KYR	KAZ	none		0			
4.1.2. Strengthen operational capacities (control equipment)		all but RUS	TAJ-KYR	KYR	none	AFG-KYR-TAJ	0			
4.1.3. Enhance public-private partnership		none	all	all	all	all	0			
4.2. Promote less harmful pesticides and alternatives to conventional pesticides							0			
4.2.1. Develop ULV formulations and related techniques		all	all	all	all (video)	all	0			
4.2.2. Propose alternatives to conventional pesticides (demonstration)		all	all	all	all (video)	all	0			
4.2.3. Encourage registration of more pesticides		all	all	all	all	all	0			

Res. &	Description - Activities envisaged for Year 5	Beneficiaries					TOTAL BUDGET for Year 5 (USD)	AVAILABLE FUNDS FOR YEAR 5		
		Year 1	Year 2	Year 3	Year 4	Year 5		USAID 2011-2017	TURKEY 2014-2018	FAO Regular Programme
<b>R5 - Impact on human health and the environment mitigated and monitored</b>							<b>0</b>	<b>0</b>	<b>0</b>	
5.1. Mitigate impact of locust control operations on human health and the environment							0	0	0	
	5.1.1. Strengthen human capacities (techn. assistance)	none	7 countries	none	UZB	none	0			
	5.1.2. Strengthen operational capacities (PPE)			none	none	AFG-KYR-TAJ	0			
	5.1.3. Pesticides and empty containers management	all but RUS	GEO-KAZ-KYR-TAJ	KYR	E-Committee	E-Committee TAJ	0			
	5.1.4. Produce extension material for mitigating impact of locust treatments	no funding	no funding	no funding	no funding	AFG-KYR-TAJ	0			
5.2. Monitor impact of locust control operations on human health and the environment							0	0	0	
	5.2.1. Strengthen human capacities (techn. assistance)	none	none	none	UZB	none	0			
	5.2.2. Strengthen operational capacities (Testmate, environmental material, etc)	none	none	KYR-TAJ	none	AFG-KYR-TAJ	0			
	5.2.3. Develop integral system for environmental and health monitoring	none	none	TAJ	TAJ (team) & KYR (system)	KYR-TAJ (teams)	0			
	5.2.4. Facilitate impact assessment & analysis of material (residue analysis)	none	none	KYR	none	KYR-TAJ	0			
<b>R6 - Public information and awareness increased</b>							<b>0</b>	<b>0</b>	<b>0</b>	
6.1. Develop awareness and education among local populations							0			
6.2. Enhance visibility of locust issues and management and of related donor support							0			
	6.2.1. Prepare and implement a communication plan	no funding	no funding	no funding	no funding	no funding	0			
	6.2.2. Create and update a website on locusts in Caucasus and Central Asia	all	all	all	all	all	0			
<b>Other</b>							<b>166,987</b>	<b>85,000</b>	<b>81,987</b>	
	Supervision, coordination, management of Five-year Programme	all	all	all	all	all	81,987		81,987	
	Evaluation	(year 5)	(year 5)	(year 5)	(year 5)	all	0			
	TSS	all	all	all	all	all	85,000	85,000		
<b>Sub-total</b>							<b>545,145</b>	<b>268,000</b>	<b>236,645</b>	<b>40,500</b>
Support cost							40,764	10,000	30,764	0
<b>Total</b>							<b>585,909</b>	<b>278,000</b>	<b>267,409</b>	<b>40,500</b>

64. As per specific project work plan presented in **Table 2**, the activities funded by the **Japanese-funded project**, as soon as it will become operational, will include:

- **Under Result 1:**
  - Contribution to the preparation of monthly regional and national bulletins on locust situations and management in CCA.
  - Contribution to the annual Technical Workshop scheduled in autumn 2016.
  - Organization of two cross-border surveys: Afghanistan-Tajikistan (*First half of May*); Kyrgyzstan-Tajikistan (13-22 June).
  - Allocation for FAO technical supervision, coordination, operational and financial management of the project, including the recruitment of project personnel, i.e an Agricultural Officer and an Administrative/Programme Assistant with Dushanbe as duty station.
  
- **Under Result 2:**
  - Organization of a Training-of-Trainers including: two regional sessions, on locust monitoring/information management and on locust spraying/pesticide risk reduction, scheduled in March 2016 in Tajikistan; and two national sessions/country (September/October 2016).
  - Preparation of practical guidelines on risk reduction of locust control.
  - Organization of exposure visits for two technical staff from Afghanistan and Kyrgyzstan on locust management in a performing national center outside CCA (February 2016).
  - The supply of prefabricated houses, initially planned during the first year of the project, will be postponed to the second year, considering the huge supply of equipment to purchase during the first year (and the fact that the project would start later than planned).
  
- **Under Result 3:**
  - Delivery of locust survey equipment, as described in the project.
  - Monitoring and analyzing system: provision of tablets with ASDC and related training.
  
- **Under Result 4:**
  - Delivery of locust control equipment, as described in the project.
  
- **Under Result 5:**

Mitigate the impact of locust control on human health and the environment through:

  - Delivery of personal protective clothing.
  - Facilitate pesticide and empty containers management in Tajikistan (national plan).
  - Prepare extension documentation for local population and schools in national languages.

Monitor the impact of locust control on human health and the environment through:

  - Support the Human Health and Environment Monitoring Teams in Kyrgyzstan and Tajikistan.
  - Deliver health and environment monitoring equipment in Kyrgyzstan and Tajikistan.
  - Facilitate impact assessment of control operations and analysis of collected material (residue analysis) in Kyrgyzstan and Tajikistan.

**Table N.4 - Tentative workplan and budget for Project GCP/INT/238/JPN**

<b>GCP/INT/238/JPN - BUDGET</b>	<b>TOTAL BUDGET (USD)</b>	<b>BUDGET Y5 Programme 2016</b>
Results		
<b>R1 Regional cooperation developed</b>	<b>717,547</b>	<b>286,856</b>
<b>1.1. Facilitate regional exchanges to manage locust situations</b>	<b>96,260</b>	<b>32,087</b>
1.1.1 Allow regular information sharing of standardized data: national and regional monthly bulletins issued yearly from March to October (Afghanistan, Kyrgyzstan and Tajikistan)	21,000	7,000
1.1.2 Allow direct experience exchange: annual workshops (participation of the three countries in the workshops)	75,260	25,087
<b>1.2. Organize joint or cross-border surveys (2/year for a total of 6): Afghanistan/Tajikistan and Kyrgyzstan/Tajikistan</b>	<b>48,000</b>	<b>16,000</b>
<b>1.3. Technical supervision, coordination, operational and financial management of project activities within the whole Programme</b>	<b>573,287</b>	<b>238,769</b>
<b>R2 National capacities strengthened</b>	<b>562,000</b>	<b>411,500</b>
<b>2.1. Organize a Training-of-Trainers (ToT) programme on locust management - Afghanistan, Kyrgyzstan and Tajikistan:</b>	<b>371,500</b>	<b>367,000</b>
2.1.1. Regional sessions (2 sessions to train 2 Master-Trainers/country, i.e. a total of 12 Master-Trainers for the three countries)	156,000	156,000
2.1.2. National sessions (2 sessions/country to train 60 locust experts and scouts at the national level and a total of 180 in the 3 countries)	206,500	206,500
2.1.3. Briefing sessions (up to 5 one-day sessions/country to train up to 225 persons/local manpower)	9,000	4,500
<b>2.2. Develop Practical Guidelines on risk reduction of locust</b>	<b>66,500</b>	<b>20,500</b>
<b>2.3. Organize exposure visits on locust management in a performing national center outside CCA (2 locust specialists in total, from Afghanistan and Kyrgyzstan)</b>	<b>24,000</b>	<b>24,000</b>
<b>2.4. Supply prefabricated houses for meetings and trainings in Tajikistan</b>	<b>100,000</b>	<b>0</b>
<b>R3 Locust monitoring improved</b>	<b>803,850</b>	<b>750,500</b>
<b>3.1. Strengthen operational capacities for locust field survey :</b>	<b>688,500</b>	<b>688,500</b>
3.1.1 Delivery positioning (GPS) and communication (satellite phone) as well as survey (entomological kits) and small office equipment	99,500	99,500
3.1.2 Deliver motorcycles (Afghanistan, Tajikistan) and/or vehicles for survey (Kyrgyzstan)	574,000	574,000
3.1.3. Deliver laboratory equipment (stereo-microscope) - Kyrgyzstan	15,000	15,000
<b>3.2. Develop monitoring and analyzing system :</b>	<b>115,350</b>	<b>62,000</b>
3.2.1. Provide Automated System of Data Collection (ASDC): provide devices (tablets with ASDC), train users on ASDC use and follow-up on it use	62,000	62,000
3.2.2. Develop national Geographical Information System (GIS) in Afghanistan, Kyrgyzstan and Tajikistan: create national GIS and train users	53,350	0

<b>GCP/INT/238/JPN - BUDGET</b>	<b>TOTAL BUDGET (USD)</b>	<b>BUDGET Y5 Programme 2016</b>
Results		
<b>R4 Locust control operations supported</b>	<b>2,215,500</b>	<b>2,215,500</b>
<b>4.1. Strengthen operational capacities for locust control</b>	<b>2,215,500</b>	<b>2,215,500</b>
4.1.1 Deliver tractors (Tajikistan) and 4x4 vehicles (Kyrgyzstan &	1,185,000	1,185,000
4.1.2 Deliver EC (Tajikistan) and ULV sprayers (Afghanistan, Kyrgyzstan & Tajikistan) and pesticide transfer pump (Tajikistan)	795,000	795,000
4.1.3 Deliver pesticides and solvent for pesticide drum rinsing (Tajikistan)	151,000	151,000
4.1.4 Deliver camping equipment (Afghanistan, Kyrgyzstan and Tajikistan)	84,500	84,500
<b>4.2. Ensure management of pesticides delivered within the project (Tajikistan)</b>	<b>0</b>	<b>0</b>
<b>R5 Risk reduction on Human Health and the Environment</b>	<b>273,000</b>	<b>237,750</b>
<b>5.1. Mitigate impact of locust control operations on human health and the environment</b>	<b>209,500</b>	<b>201,500</b>
5.1.1. Deliver personal protective clothing (PPE)	180,000	180,000
5.1.2. Facilitate pesticides and empty containers management: preparation and implementation of national plan - Tajikistan	17,500	17,500
5.1.3. Prepare extension documentation for local populations and schools in national languages and ensure mass-media campaigns	12,000	4,000
<b>5.2. Monitor impact of locust control operations on human health and the environment</b>	<b>63,500</b>	<b>36,250</b>
5.2.1. Support Human Health and Environmental Monitoring Team to monitor quality control and impact on human health and the environment of locust control operations - Kyrgyzstan, Tajikistan	30,000	15,000
5.2.2 Deliver health and environment monitoring equipment - Kyrgyzstan, Tajikistan	9,000	9,000
5.2.3. Facilitate impact assessment of control operations and analysis of collected material (residue analysis) - Kyrgyzstan, Tajikistan	24,500	12,250
<b>SUB-TOTAL 1</b>	<b>4,571,897</b>	<b>3,902,106</b>
<b>Technical Support Services (TSS) and Reporting</b>	54,500	18,167
<b>Evaluation (standard provision)</b>	46,500	0
<b>SUB-TOTAL 2</b>	<b>4,672,897</b>	<b>3,920,272</b>
<b>FAO Support Costs (7%)</b>	327,103	274,419
<b>TOTAL</b>	<b>5,000,000</b>	<b>4,194,691</b>

65. Then the FAO Locust Programme Officer indicated that because the USAID project, which had covered the Programme core activities, was coming to an end, a brainstorming was needed as far as the following years were concerned. The delegates were therefore requested to express their views in this regard. A reflection took place on what had been done so far in the framework of the Programme and on any future needs of the countries.
66. Delegates indicated that after seven years of common work, and four years after the launch of the FAO Programme, much progress had been made on many technical issues and that trainings and technical assistance had been very instrumental in this regard. In addition to strengthening national capacities, the main achievement of this Programme was probably that regional cooperation had been largely developed among CCA countries and that a continuous dialogue now exists concretely. Delegates warmly thanked FAO, and through FAO, the donors funding the Programme, for having permitted such positive results. It was said that FAO had brilliantly managed the whole Programme and that projects managed by FAO had a lot of positive impacts.
67. Regarding the coming years, delegates unanimously agreed that at least the following activities would need to be pursued, in the framework of the FAO Programme: the preparation of monthly bulletins on locust situations and management; the annual Technical Workshops on locusts in CCA (whose duration could be slightly reduced if needed), which were necessary to make a situation update on the past campaign and preparation of the next ones, as well as to exchange on any new technical issue, result, gap and challenge; and the cross-border surveys, which were crucial to jointly monitor the locust situation on border areas and avoid tensions between countries (would funds not be available to support them, FAO visa support would be appreciated for their organization). It was also proposed that their duration should be increased. In addition, the use of the ASDC and GIS in all concerned countries would need to be supported in the coming years, including the GIS server; in this respect, the FAO International Consultant, GIS Expert, added that transparent information on locust situation in each country was crucial for locust management and avoidance of tensions at the regional level. Some delegates also mentioned the need for further training/refreshing sessions. Last, the delegate of Uzbekistan indicated that research on biological control was needed and could be carried out by the Uzbek Institute for Plant Protection (UzNIIZR), possibly together with the Russian Plant Protection Institute (VIZR) in the Russian Federation, and that the Programme could also support such work. It was agreed that the delegate would send detailed information to FAO.
68. A discussion took place on the need to include Iran and China as observers during the annual Technical Workshops. The delegate of Azerbaijan said that cross-border surveys with Iran could also be useful. The Senior Officer, Team Leader, AGPMM, indicated that the Programme had initially focused on ten countries but that the time had come to cooperate with some neighbouring countries such as Iran or China. She said that discussions had taken place several times with an Iran representative, who had been officially invited to attend this 2015 annual meeting as an observer; although he could not be present, he was very interested in cooperating with CCA neighbouring countries, such as Azerbaijan and Turkmenistan.
69. In conclusion on the above, delegates and FAO representatives agreed to proceed as follows: FAO would prepare a draft Concept Note presenting the prioritized activities to be pursued and the related budget, share it with the Programme National Focal Points of the ten countries for comments and then finalize it. This would serve as a basis for common resource mobilization, which should take place at two levels: first of all, internally for the countries participating in the Programme which have the capacity to support it financially such as Azerbaijan, Kazakhstan and the Russian Federation; and at the international level with donors - coordination would be required to that end.

70. The last issue addressed under this item concerned the follow-up on the Study on possible mechanisms on long-term cooperation on locusts in CCA. The FAO International Consultant, Senior Locust Expert, asked details about the responses received by FAO. The Locust Programme Officer indicated that the situation was as follows: Azerbaijan (by e-mail) and the Russian Federation (by official letter) indicated their support to a regional technical network; Armenia (e-mail) and Georgia (official letter) supported the establishment of a FAO Commission; Uzbekistan sent an e-mail but did not indicate which institutional mechanism was preferred. From further discussions, it appeared that Kyrgyzstan (by e-mail) and Tajikistan (by e-mail) had also replied on this issue, although if their responses had not been received by AGPMM; both were in favor of a FAO Commission. FAO stressed how important it was to pursue the reflection of the best possible mechanism to ensure long-term cooperation in CCA, with a view of ensuring sustainability of such regional cooperation.

### **SESSION 3: DEVELOPING MONITORING AND ANALYSING SYSTEMS (GEOGRAPHICAL INFORMATION SYSTEM)**

#### **Testing the Automated System of Data Collection (ASDC): lessons learnt and recommendations (pilot countries' presentations: Georgia, Russia and Uzbekistan) (Item 12)**

71. The delegates of the three pilot countries, namely Georgia, Russia and Uzbekistan, presented the results obtained while testing the ASDC at the national level during the 2015 locust campaign. Out of 29 reports made by Georgia, 25 records were registered during locust survey operations carried out on an area of 8 825 ha from 3 May to 1<sup>st</sup> August 2015, and four records during control operations on an area of 1 200 ha. At the end of this two-year exercise, Georgian specialists recommended: a) to provide the insecticide active ingredient concentration in decimal format; b) to measure the imago density per square meter; c) to indicate the type of biotope as "CIT hills"; and d) to add the possibility to save forms and to complete and send them later. The delegates of Georgia reiterated their high interest in contributing to the development of the national locust GIS for Georgia and informed about the purchase of 15 tablets for locust monitoring (with the assistance of donors under project not directly related to the locust programme). However, he also noted that GIS should provide the possibility of printing out data and maps, which should contribute to take decisions. In addition, the delegates of Georgia said that a training of trainers on ASDC use and on GIS practice would be useful in his country. The Senior Officer, Team Leader, AGPMM, clarified that the primary use of ASDC is to collect and store standardized data at the national level that would help analyzing the field data and forecasting.
72. The delegate of Russia indicated that the Russian Agricultural Center (Rosselkhozcenter) had procured 12 tablets on which ASDC was installed for its own branch office in Saratov oblast. He said that local specialists mastered themselves ASDC use and noted the easy and practical aspect of system's use in the field. Out of 45 records made by Russia, 44 records were registered during locust survey operations carried out on an area of 11 906 ha in 12 districts of Saratov oblast, from 29 April to 28 June, and one record was made during control operations conducted on 4<sup>th</sup> July. The delegate noted some problems such as the lack of possibility to save the forms in the tablet, the short duration of tablet battery operability and a lack of local mobile or Internet communications to send information at any time. To the question of Rosselkhozcenter's ability to implement a full-scale use of this system in the pest monitoring service, the delegate replied that it is planned to do so. In total, about 200 tablets would be needed to cover all regions affected by locusts.
73. As to the results of ASDC testing by Uzbekistan, the FAO International Consultant, GIS Expert, informed that at present time a total of six records were made during locust survey operations carried out on 23, 24, 26 May and 16 September 2015 on an area of 2 900 ha in

the Republic of Karakalpakstan. Some difficulties encountered, such as language barrier and technical problems with mobile or Internet communications to send information, were mentioned.

74. The delegates of Georgia highlighted the importance of concrete and accurate information especially in border areas. The delegate of Azerbaijan underlined the benefit gained in using the ASDC in the field. He said that the Plant Protection service of Azerbaijan planned to buy tablets for its own branch offices next year. Overall, it was said that such system should be used in as many CCA countries as possible to take full advantage of it.
75. The FAO International Consultant, GIS Expert, summed up the above-mentioned results and underlined the active ASDC testing work performed by the teams from Georgia and Russia as well as the importance of further ASDC use for the development of the CCA locust GIS.

### **Update of fields in ASDC (Item 13)**

76. The FAO International Consultant, GIS Expert, informed that after two years of ASDC testing, a number of changes were envisaged with a view of improving the functionality of the system. The general recommendations were as follows: (1) add the possibility to save forms while completing them and send them later; (2) provide decimal format for some fields (surveyed, infested, treated or damaged areas, the insecticide active ingredient concentration); (3) provide the ability to enter coordinates of the full area (up to 6 points); (4) translate the ASDC interface into national languages; and (5) prepare a detailed guide for ASDC use in the field. As for the changes in the Locust Survey and Spray Monitoring Forms (including safety and environment issues), the delegates reviewed both of them, discussed them in detail and agreed on some adjustments. Approved forms are in Annex IV of the report. On this basis, the ASDC will be improved and the updated system available for the 2016 locust campaign.
77. In conclusion, a summary of countries that would further use of the ASDC was made, as follows: the three pilot countries, Georgia, the Russian Federation and Uzbekistan, would continue to use the system and possibly expand its use. The three countries covered by the Japan-funded project, Afghanistan, Kyrgyzstan and Tajikistan, would start using it during the 2016 locust campaign. Azerbaijan had already indicated its intention to purchase tablets for all regions and use it from 2016. Kazakhstan informed that from 2016 each scout would be equipped with a tablet and that ASDC, which was free of charge, would be installed on such tablets. The Turkmen delegate indicated that tablets would be used in his country.
78. Then, following a recommendation made by the pilot countries to have the ASDC translated into the national languages, the FAO Experts and delegates agreed on the following:
- In addition to the existing English and Russian versions, the system will be translated into Azeri, Georgian, Kyrgyz, Kazakh, Persian, Tajik, Uzbek and Turkmen;
  - As the ASDC includes highly specialized technical vocabulary, a Locust Expert from each country will undertake the translation of the system (representing about 2 000-3 000 words) into the national language;
  - Deadlines: the FAO International Consultant, GIS Expert, will send the finalized forms to the Locust Experts by mid-November at latest and the Locust Experts should send back the translated version by early December; this will allow the system to be prepared on time in all languages for the 2016 locust campaign.
79. The importance to have a very accurate translation was stressed considering that there will be no opportunity to modify the system afterwards.

## **Update on the development of the regional Geographical Information System (GIS) in CCA (Item 14)**

80. The FAO International Consultant, GIS Expert, presented a summary of the technical specifications for the creation of a database and a database management system for the regional Locust GIS in CCA countries. This work started during Year 3 of the Programme (2014). During Year 4 (2015), the technical specifications were reviewed and finalized. It is planned that the database will be developed by the Institute of Space Technique and Technologies in Almaty, Kazakhstan, during Year 5 and that it will be available for the start of the 2016 locust campaign.
81. The main changes and updates introduced in the final version of the technical specifications are the following:
  - 1) One database (DB) only will be developed and used both at regional and national levels (for this reason, no specific national GIS with database was developed in 2015 for Georgia, contrary to what had been decided during the 2014 annual Workshop in Georgia). However, countries will have the possibility to use the GIS at national and regional levels. National languages will be handled as lookup tables and could be changed in "Options" or "Settings" Menu.
  - 2) The title of the Locust GIS was changed for an acronym easier to pronounce and remember: CCALM for "Caucasus and Central Asia Locust Management system".
82. The FAO GIS Expert also presented the four CCALM subsystems created for: (1) field data collection and transmission; (2) manual data entry for add material coming from other sources; (3) data management (control, recording, storage) and analysis; (4) data exchange operating with databases and including tablets DB, field data DB, locust national statistical reports DB (current and historical), additional materials DB (meteorological fields, remote sensing data and products, Digital Elevation Module -DEM, maps, etc.). The delegates approved the technical specifications for the creation of a database and a database management system for the regional Locust GIS in CCA.
83. It was underlined that the GIS functionality will be developed starting with basic functions (data import, query, display, output). So the countries will have the possibility to collect field data and to access to the database. It is assumed that this work will be completed at the end of February 2016. At this stage, the deployment of CCALM on the real server will be carried out and users will be able to start testing the system. The countries agreed that GIS testing would be carried out during the 2016 campaign in Georgia and Kyrgyzstan: the first country has already tested ASDC over the past two years; the second one will be provided with tablets and training on ASDC use in 2016 (under the newly approved Japanese-funded project); in addition, and one of the Kyrgyz delegate, Mr Alakunov, had been awarded an FAO fellowship (PhD) on GIS, starting in early 2016. The selected pilot countries represent both regions.
84. Another step, in early 2016, will be the development of the technical specifications for summary, analysis and forecast algorithms. For this purpose it was suggested to set up an E-Committee including countries and FAO representatives, whose tasks would be to brainstorm on such algorithms. The FAO Locust Programme Officer clarified that national specialists, Forecasting Experts, would be required for this activity. Countries delegates proposed the following experts: Mr Sultanov (Azerbaijan), Mr Nutsubidze (Georgia), Mr Mukhyshov (Kazakhstan) Mr Alakunov (Kyrgyzstan), Mr Zhivykh (Russian Federation), Mr Komilov (Tajikistan), Mr Geldyiev (Turkmenistan), Mr Nurjanov (Uzbekistan), none for Armenia. The Afghan delegation would inform at a later stage.

## **SESSION 4: LOCUST CONTROL**

### **Presentation of the latest Pesticide Referee Group Report (December 2014) and of the Stakeholder Workshop on procurement and supply of pesticides for locust control (September 2015) (Item 15).**

85. The Senior Officer, Team Leader, AGPMM, recalled that the report of the 9<sup>th</sup> meeting of the Pesticide Referee Group (PRG) held in 2004 had been presented to countries during the Technical Workshop on Locusts in Caucasus and Central Asia held in October 2010 and that it had been decided that CCA countries should be represented at the next PRG meeting. Last year, in December 2014, it was eventually possible to hold the 10<sup>th</sup> PRG meeting and as agreed during the Technical Workshop held in October 2014, one representative from the region, Mr Gapparov, Head of the Laboratory for Locust Research of the Uzbek Research Institute for Plant Protection attended it.
86. The Senior Officer indicated that the 10-year delay between the 9<sup>th</sup> and 10<sup>th</sup> PRG meetings was due to fund shortage to organize it but also to the lack of new pesticides that may be appropriate for locust control. This was confirmed by the 10<sup>th</sup> meeting, resulting in recommendations towards the pesticide industry, plant protection organizations and any other institutions encouraging them to submit new efficacy data while stressing the importance of rigorous and scientifically sound efficacy testing. Also, FAO was requested to disseminate guidelines for efficacy testing and seek for high quality results in order to diversify the range of pesticides that can be used for locust control. An important part of the meeting was devoted to human health and environmental concerns and measures to prevent and mitigate related risks, including with respect to obsolete pesticide stocks. Taking into account the lack of new data and the need to better streamline pesticide provision mechanisms, it was also recommended that FAO re-engage dialogue with pesticide industry and organize a workshop to be attended by a wide range of stakeholders.
87. Therefore, as a follow-up of the 10<sup>th</sup> PRG meeting, such a workshop was convened in early September 2015. Its objective was to create a platform between the companies producing pesticides for locust control and representatives from each of the locust-affected regions to review the existing pesticide supply chain mechanisms and the possibility to screen currently available or new pesticides. To represent CCA, FAO invited Mr Gapparov, who had attended the 10<sup>th</sup> PRG meeting, and Mr Ganiev, Head of SRUE "Locust Control", Ministry of Agriculture, Tajikistan, considering that it is mainly to this country that FAO has supplied pesticides in the recent years and will provide again in 2016. The two-day workshop reached its objective in revitalizing the dialog and proposing concrete steps to deliver the right insecticide of the right quality to a locust-affected country in the right quantity at the right time, while avoiding the build-up of obsolete stocks.
88. It was indicated that that the report of the 10<sup>th</sup> PRG meeting had been translated into Russian and is available on the FAO website Locust Watch in CCA in both English and Russian.
89. The floor was then given the delegates of Uzbekistan and Tajikistan to get their feed-back on these two meetings. The delegate from Uzbekistan thanked FAO for the opportunity to meet with representatives of major companies producing pesticides and establish a bridge with them as well as with countries' representatives, in particular the delegate from Iran.
90. The delegate from Tajikistan deemed the workshop very useful considering the number of issues tackled, such as technical requirements for pesticides, discussions with manufacturers, accumulation of pesticides stocks, management and recycling of empty containers, involvement of local governments, the mechanisms for chemical delivery

including in terms of quality, timeliness and quantity to avoid accumulation of stocks that could become obsolete. He noted that there had been no pesticide in excess in Tajikistan over the past years because an exact calculation was made and he underlined that precise forecast was crucial to avoid accumulation of stocks. He stressed that special emphasis should be put on human health and the environmental protection and indicated that he will use the experience gained in his work.

91. The delegate from Kyrgyzstan questioned on biopesticides and new companies formulating them as well as on their efficacy in areas where there are operationally used such as in Africa and Asia. The Senior Officer, Team Leader, AGPMM, replied that there are currently only two companies worldwide, which produce biopesticides for locust control. The bulk of the locust treatments with biopesticides is done in Australia. Their efficacy is satisfactory but they are slow-acting; as such, when it is necessary to ensure fast crop protection, other pesticides can be used. To the question concerning the control of flying swarms, the Senior Officer replied that it proved to be efficient in Timor Leste against Migratory Locust in an area of rice crops and rivers where no other pesticide could have been used.
92. The FAO International Consultant, Senior Locust Expert, underlined that participation in a PRG meeting was a very important landmark in the relationship built between CCA and FAO. He recalled that the report of the PRG meeting held in 1999 had been translated into Russian and was the main reference document when selecting pesticide for locust control. However, the 2014 PRG report was disappointingly light on new data and included a carbamate, which is no more used. The Senior Locust Expert recognized that conventional pesticides still remain our first line of defense when it comes to dealing with locust issues. For example, during the last major Desert Locust plague in 2003-2005, about 13 million ha were treated predominantly with Chlorpyrifos. During the ongoing Migratory Locust emergency in Madagascar, a large part of treatments are also done with Chlorpyrifos. Although this organophosphate pesticide is very efficient, it is also known to have negative impacts on human health and the environment. He deplored that no new active ingredient was presented in the last PRG report while refuting that no new pesticides were present in the market, referring as an example to Rynaxypyr from chemical class of chlorantraniliproles, which is registered in the US against grasshoppers. He argued that the period to prepare the 10<sup>th</sup> PRG meeting was too short to gather all available data. He also referred to the minimum list of pesticides developed for registration in CCA in 2012 and the fact that no organophosphate was included in that list, which was appropriate.
93. The Senior Officer, Team Leader, AGPMM stressed that the main concern to hold a new PRG was the lack of data; that was confirmed during the meeting and the follow-up workshop. More than the presence of new pesticides, she said that the PRG had concluded that “no new insecticides had been sufficiently tested in the last 20 years to confirm effective dose rates against locusts.” Thus, the objective was to reinitiate the dialogue with pesticide companies and also to ask partners to gather good quality field data.
94. The delegate from Georgia highlighted that it would be better not using highly toxic pesticides. The delegate from Azerbaijan noted that locust control relies on using pesticides. He also shared his concern about the IGR Diflubenzuron which takes too long to kill locusts. He underlined that it was necessary to prove to farmers that locusts won't damage the crops. The delegate of Kyrgyzstan replied that although locusts die several days after treatment with an IGR, they stop feeding soon after receiving a dose of this pesticide and thus would not damage the crops. The delegate from Uzbekistan added that an IGR is not a pyrethroid which has a fast speed of action. Diflubenzuron is usually used far away from crops and human settlements. However, when a rapid effect is needed, as in the case of DMA threatening crops, other more fast-acting pesticides should be used. The coming monograph on DMA will provide considerations on the subject.

**Progress made on spraying technologies, products and biopesticides (countries' feedback) (Item 16)**

95. Delegates presented information on this item according to the template provided by FAO and focusing on the events that occurred during the 2015b campaign.
96. The delegate of Afghanistan informed that no new equipment had been purchased in the country in 2015. Up to the third nymphal instar, Diflubenzuron is used. After that, Deltamethrin is used. No biopesticides were tested.
97. The delegate of Armenia informed that in 2015, no new biopesticides were tested or registered.
98. The delegate of Azerbaijan stated that most treatments in the country are done with pyrethroids although some areas are treated with Chlorpyrifos and Cypermethrin mixture. Pyrethroids are used in both EC and ULV formulations. Vehicle-mounted ULV sprayers are an important asset in remote mountainous areas with difficult relief. During locust emergencies, ULV sprayers are used while for all other situations, EC is preferred. The country has six Mitsubishi pick-ups and three new sprayers "Scout" which also can be mounted on a vehicle and used in locust control.
99. The delegate of Georgia informed that the majority of the anti-locust treatments in the country are done with ULV, particularly vehicle-mounted sprayers. Helicopters with 800-liter pesticide tank allowing them to quickly treat large areas. Low-Volume spraying covers about 10% of the treated areas while ULV sprayers treat 90% of the infested areas. Because early summer was wet, grass stand on pastures was tall and dense. This hampered locust control in such zones. Barrier treatments were attempted, but hopper bands are difficult to follow after the application. No new equipment was purchased; no new technologies were developed; no biopesticides were tested on locusts. The delegate underlined the high quality presentations made by Prof. Latchinsky during the training on locust monitoring.
100. The delegate of Kazakhstan informed that there are three major types of spraying equipment in the country: hydraulic, atomizers, and aerosols. There were no new registered or tested pesticides including biopesticides. Fungal pathogens such as *Beauveria bassiana* and *Metarhizium acridum* were jointly tested by scientists from Kazakh and All-Russian Institutes for Plant Protection (KazNIIZR and VIZR).
101. The delegate of Kyrgyzstan stated that in 2015, AN-2 and ultra-light aircraft were used to treat locusts, with ultra-light aircraft accounting for 17% of all treatments. Such aircraft can treat up to 300 ha daily. Responding the question of the Kyrgyz delegate, the Senior Locust Expert said that AN-2 aircraft can treat up to 1 000 ha per flight in ULV regime and up to 200 ha per flight in LV regime. The delegate of Kyrgyzstan said that a wide use of ULV in the country is already a big progress in anti-locust spraying. However, he also noted as problem: a very high cost of ULV pesticides compared to EC. He asked for arguments which would help to justify the use of state funds to purchase more expensive ULV pesticides. The Senior Locust Expert answered that, 1) ULV sprayers mounted on pickups can reach areas with difficult access and complicated relief; 2) ULV technology can be used in areas with water shortage, and 3) the cost of treatment per ha with ULV in Kyrgyzstan is significantly lower than EC (USD 1.40 vs. USD 3.30). There were no new pesticides registered or tested.
102. The delegate of Russian Federation said that ULV is not used in the country and that 100% of anti-locust treatments are done with EC pesticides. Training is very important and over 40 seminars on spraying were conducted in 2015. Specialists from the Russian Agricultural Center supervise sprayer calibration and assess quality of treatments. New sprayers, such

as aerosol generators, need to be certified by health authorities in order to be operational but this had not been done yet. There are 44 pesticides from different chemical classes registered in the country, which creates a sufficient “umbrella” to cover locust control needs. In 2015, one new biopesticide based on *Beauveria bassiana* fungus was registered. It has an advantage of a new, microencapsulated formulation protecting the fungal spores. However, in demonstration trials it showed not a very high efficacy. Furthermore, this fungus is not selective and can affect non-target arthropods.

103. The delegate of Tajikistan informed that the 2015 anti-locust campaign was essentially conducted from ground. Tractor ventilator sprayers and handheld and knapsack ULV sprayers were used. ULV has both its advantages and problems and it is necessary to be well informed and trained to understand both. EC is mostly used in the country. Usually, pyrethroids are applied to control nymphs and then Chlorpyrifos is applied to control adults. In 2015, training on spraying and quality control took place.
104. The delegate of Turkmenistan informed that in the country, tractor ventilator sprayers and vehicle-mounted ULV sprayers are used. No aircraft are involved. Organophosphate pesticides have not been used for ten years. Barrier treatments were attempted but failed. No biopesticides were used; no new pesticides were tested or registered.
105. The delegate of Uzbekistan reminded the delegates that the country was among the first to test fungal biopesticides based on *Beauveria* and *Metarhizium* but these biopesticides were too expensive (USD 15/ha) to be used operationally. Currently, the Uzbek Institute for Plant Protection is developing its own biopesticide. In recent trials, it showed a 70% efficacy at a dose rate of 0.5 l/ha. It is anticipated that next year it will be possible to market the product. This work is sponsored by one of the national pesticide manufacturers – Agrochim. As for Insect Growth Regulators, they have been used in Uzbekistan since 2000. Nowadays they are produced by local manufacturers. No new pesticide was registered in 2015.

#### **Presentation of the video on the use of Ultra-low Volume technology in locust control (Item 17)**

106. In 2015, three videos were prepared under Result 4 “Improved response mechanisms to locust outbreaks” of the Locust Programme in CCA: under Activity 4.2.1 “Develop use of Ultra-Low Volume (ULV) formulations and related techniques”, a video on ULV spraying; and under Activity 4.2.2 “Propose alternatives to conventional pesticides”, two videos on biopesticides. The above videos were realized against the USAID funding (project GCP/INT/134/USA) and a contribution of the FAO Regular Programme.
107. Because some shootings had been made in February 2012, during the internship organized to the benefit of a Kazakh student in the National Anti-Locust Center of Morocco, the initial idea was to use them for producing a video on ULV spraying. However, these shootings were of low quality and new ones had to be made. Upon agreement with the National Anti-Locust Center of Morocco, which put at disposal the required expertise and logistics, a field trip with a professional video-maker, Mr Nicolas Franik, and Mr S. Lagnaoui, ULV Spraying Expert, was organized during the second decade of September 2015. The resulting video (about 5 minutes) aims at promoting the use of ULV technology to combat locusts. It targets decision-makers, donors and other partners, locust experts and control operators.
108. After having watched the video, the delegates highlighted that it was of a high quality level. The delegate of Georgia said that the video was very good for decision-makers however he regretted that it did not explain how to calibrate ULV sprayers. The Senior Officer, Team Leader, AGPMM, replied that many discussions had took place on that during the preparation of the video and that it would have been very difficult to have a step-by-step tutorial on calibration, with relevant corresponding images. However she indicated that the

video could be used as an introduction to the ULV technique for any related training or whenever needed. All participants then agreed that some slides could be prepared to complement the video. The Locust Programme Officer indicated that it was planned to have such material prepared for the Training-of-trainers to be organized under the Japanese-funded project in March 2016; such material would be dispatched to all countries. On a different issue, the delegate of Kyrgyzstan said that it would be interesting to have a study comparing the cost-effectiveness of use of ULV pesticides with respect to the EC ones.

### **Presentation of the advocacy and tutorial videos on the use of biopesticides against locusts (Item 18)**

109. During the annual Workshop on Locusts in CCA, held in 2014 in Georgia, it was decided that a video on biopesticide use would be realized taking advantage of the ongoing ground and aerial spraying operations conducted with a biopesticide based on *Metarhizium acridum* fungus in the framework of the FAO “Three-year Programme (2013-2016) in response to the locust plague in Madagascar.” Against this background, shootings were made by a professional video-maker, Mr Nicolas Franik, in February 2015, based on a script to which FAO Experts have contributed.
110. Two videos were prepared, as follows: a short video to promote the use of the biopesticides (about 4 minutes), which targets decision-makers, donors and other partners, locust experts; and a video tutorial on the use of biopesticides, which explains step by step how to manage, prepare and spray them (about 10 minutes) for locust experts and control operators.
111. The two videos were shown to the delegates. During the discussions, it was confirmed that the videos will be despatched to all countries, in Russian and in English, to allow their wide use by the CCA Locust Experts for advocacy or training purposes. In reply to a question on the biopesticide dose rate, it was said that as a general rule, 50 grams per hectare are needed, diluted in 1 liter of gasoil.

## **SESSION 5: RISK REDUCTION FOR HUMAN HEALTH AND THE ENVIRONMENT**

### **Mitigating impact of locust control operations (Item 19)**

#### E-Committee on empty pesticide container management (Item 19a)

112. The Locust Programme Officer, AGPMM, presented the work envisaged under Activity 5.1.3, “Pesticide and empty container management,” of the Programme. During the previous annual Technical Workshop, it had been decided to convene an E-Committee in order to analyze the management of empty containers of pesticides used for locust control in CCA, against USAID and FTFP funding. During Year 4, the terms of reference of such E-Committee were prepared and the organization to conduct the work identified.
113. As far as the terms of reference are concerned, the Locust Programme Officer indicated that the objective of this E-Committee is to review and critically analyze the management of empty pesticide containers used for locust control in CCA countries and to make recommendations to improve such management. Its tasks will be to: (1) Collect, review and summarize the available laws, regulations, guidelines and other relevant documentation on the management of empty containers of pesticides used for locust control in CCA countries; (2) Collect, review and summarize information on the practices concerning the collection, cleaning, volume reduction and recycling/disposal of such empty pesticide containers in CCA countries; (3) Make a list of the available infrastructures for collection, cleaning, volume reduction and recycling plastic and metallic empty containers available in CCA countries;

(4) Gather information available at international levels (codes of conduct, guidelines, FAO mission's reports, including on management of empty containers in other geographical areas, etc.); (5) On this basis, carry out an analysis of the management of empty containers of pesticides used for locust control in Caucasus and Central Asia, which takes into account the related international codes of conduct or guidelines, and formulate cost recommendations towards its improvement (taking into consideration its environmental and financial sustainability) at national and regional levels. The expected product is an Analytical report on management of empty containers of pesticides used for locust control in CCA – in Russian and in English.

114. The Locust Programme Officer indicated that the non-profit organization "Milieukontakt International" (MKI) had been identified to conduct the requested work. MKI has been working for more than 25 years on solutions for environmental problems, mainly in the republics of the former Soviet Union, the Balkans, the Caucasus region and Central Asia.
115. The representative of MKI, Mr Wouter Pronk, introduced further the organization and made a presentation on the work to be carried out. As far as the process is concerned, it was indicated that MKI would collect the whole information, analyze it and produce the report. It was stressed that the national focal point of each country would play a crucial role in gathering and transmitting the existing information, both on laws and regulations and on practices, at the national level. It was envisaged that up to three Locust Experts from CCA as well as FAO staff would review and comment the report. Exchanges would occur through e-mails as well as Skype or telephone calls as needed.
116. The representative of MKI then presented the questionnaire that would be sent soon to all countries (by 10 November), asking countries to provide a response by 1<sup>st</sup> of December. During the discussions, the delegate from Georgia said that a similar work had already been made under a big project funded by the EC. The Locust Programme Officer replied that it was planned to take into account any work already made, together with all consultant mission reports; she stressed however that the purpose of this E-Committee was to focus on the empty containers of pesticides used for locust control (and neither on obsolete pesticides nor empty containers used for other purposes than for locust control). The delegate of Kyrgyzstan underlined that this question was vital and provided indication on what was done in his country to fulfill some legislation gaps, including as a member of the Eurasian Economic Union. The delegates of Azerbaijan indicated that it was mandatory for any companies that would provide pesticides to transport the empty containers, at its own expenses, in a specific location in view of their disposal. The delegations of Afghanistan, Russia, Kazakhstan, Turkmenistan and Uzbekistan provided some information on the existing laws and on the management of empty containers in their respective countries. The existing good practices would be taken into account. In conclusions, all delegates agreed that an official letter should be sent by FAO to each country asking to nominate an expert who would be responsible to gather and send the requested information. This is all the most important considering that other ministries or bodies are sometimes involved in the disposal of the empty containers. The MKI representative stressed that it was very important however that the expert be working on locusts: the problem of empty containers is indeed a vast one but the work to be carried out concerned locust control only. Concerning the review of the draft Analytical Report, it was agreed that such document would be sent to all countries so that they all have the possibility to provide comments before its finalization.

## **Monitoring impact of locust control operations (Item 20)**

### Activities carried out by the newly-created Human Health and Environment Monitoring Team in Tajikistan, lessons learnt and recommendations (country's presentation) (Item 20a)

117. The delegate of Tajikistan presented the activities implemented by SRUE "Locust Control" to improve pesticide risk reduction measures during the 2015 locust campaign. For the first time ever in CCA, a specialized Human Health and Environmental Monitoring Team had been set up, with the operational and technical support of the FAO Programme. The delegate informed the participants about the work carried out in various districts of Khatlon and Sughd regions by the Monitoring Team, composed of four national specialists. This included trainings, cholinesterase monitoring, filling out the Human Health and Environmental Monitoring Form (which was considered very instrumental) and the Insecticide use passport, calibration of sprayers, review of the use of PPE and public awareness raising. Baseline cholinesterase levels were also established by taking blood samples of 40 people in the districts in order to assess cholinesterase inhibition after exposure to organophosphate pesticides. The delegate of Tajikistan recommended that the following activities be conducted in the future: pesticide residue analysis in vegetation and soil, setting up of a laboratory for carrying out such analysis and use of the Geographic Information System (GIS).
118. The delegate of Tajikistan thanked FAO and the FAO International Consultant, Senior Environmental Expert, Mr Harold van der Valk, for the support and guidance provided in setting up the Monitoring Team. Pictures were showed to the assembly. The FAO International Consultant, connected through Skype, thanked the delegate of Tajikistan for the exhaustive and clear presentation and indicated that this was particularly interesting considering that it was the first time that a Monitoring Team was established in the region. He noted that, on the basis of cholinesterase inhibition results collected from operators before and after the campaigns, most staff had no inhibition of cholinesterase level. However, as the results showed that two staff had a higher exposure to organophosphate, he asked whether any poisoning symptoms had been observed; upon negative reply from the Tajik delegates, he underlined that such cholinesterase testing kits were useful also because they allowed detecting higher exposure even in the absence of symptoms. Regarding the effect on non-target organisms (insects, fish), the delegate indicated that there might be some minor impacts in the treated areas but that environmental protection was ensured by regional units. He also underlined that they worked in contact with the beekeepers and alerted them in advance before control operations were carried out.
119. The delegate of Tajikistan informed that the work of the monitoring team will continue during next year's campaign and recommended that other countries establish such a team, which has yielded very good results, in particular with regards to pesticide management. In fact, filling forms and certificates represents a responsibility for the operators and this implies that the quality of treatments improves. The FAO Locust Programme Officer thanked the delegate of Tajikistan for the comprehensive presentation as well as the Senior Environmental Expert for his interventions. She highlighted that the successful setting up of the Human Health and Environmental Monitoring Team in Tajikistan was considered as an important achievement and that FAO would support its further development, both at operational and technical levels.

Pilot activity to develop a monitoring system on quality control and efficacy of locust treatments in Kyrgyzstan (country's presentation) (Item 20b)

120. The delegate of Kyrgyzstan presented the "Pilot activity to develop an integral system for environmental and health monitoring of locust control in Kyrgyzstan", under Result 5.2 of the Programme. In this framework, the FAO International Consultant, Senior Environmental Expert, Mr H. Van der Valk, visited Kyrgyzstan from 22 June to 3 July 2015, with the following objectives: develop a proposal for the structure and functioning of an integral system for monitoring of quality, human health and environmental effects of locust control operations in Kyrgyzstan; and conduct on-the-job training of monitoring techniques during locust control operations.
121. Following discussions held between the national stakeholders and the FAO International Consultant during his mission in Kyrgyzstan, a plan was drafted to develop such an integral system for monitoring of quality, human health and environmental effects of locust control operations, which included required resources and trainings. In addition, together with four specialists of the Department of Chemicalization and Plant Protection and medical staff from the Ministry of Health, the Senior Environmental Expert visited several sites in Naryn and Chuy regions where chemical treatments had been carried out. At this occasion, from 26 June to 1st July 2015, on-the-job training was provided and various monitoring activities were conducted, including: environmental monitoring, insecticide residue sampling, cholinesterase monitoring, review of the system of medical check-ups used for locust control staff, review of personal protective equipment (PPE) used in the field. The collected data were recorded in the Human Health and Environmental Monitoring Form, which was proposed by FAO and reviewed together with the Kyrgyz Locust Experts.
122. The delegate of Kyrgyzstan reported that the Department of Chemicalization and Plant Protection includes in the annual budget an allocation for the purchase of PPE and for medical examinations before and after chemical treatments. The Department would also work with local associations of beekeeping. It was indicated that from the 2016 locust campaign, it was planned to set up an independent Human Health and Environmental Monitoring Team, responsible for monitoring operations. The data gathered during this activity will be sent to the State Agency of Environment and Forestry and shared with FAO, which would provide assistance to the work of the team.
123. The Senior Environmental Expert said that the mission was very productive and that useful discussions had taken place with national stakeholders; he congratulated Kyrgyzstan for the decision to set up the Monitoring Team. He remarked that the same type of monitoring would be conducted in Kyrgyzstan and Tajikistan but that the organization of such monitoring was slightly different. In Tajikistan the team was created under SRUE "Locust Control", with medical staff who is also part of SRUE. In Kyrgyzstan instead, human health monitoring is the responsibility of the Ministry of Health and, therefore, a good collaboration between the ministries of Agriculture and of Health is required. Another difference is that a pesticide residue laboratory is operational in Kyrgyzstan but not in Tajikistan. As a matter of fact, the type of monitoring that can be conducted also depends on the available infrastructures in the countries. The Senior Environmental Expert proposed that during the 2016 annual Technical Workshop, the experience of the two countries be compared to identify best practices in CCA. The delegate of Kyrgyzstan thanked him for the very useful and practical training. He informed that an agreement had already been reached with the Ministry of Health to conduct joint research in that field. He stressed that the toxicology laboratory in Bishkek required additional support by FAO and also proposed that a study on the impact of pesticides on human health be conducted in the near future.
124. The FAO Locust Programme Officer confirmed that operational and technical support for the setting up of the Human Health and Environmental Monitoring Team was planned from

the 2016 locust campaign under the Japanese-funded project. In addition, a Training-of-Trainers, scheduled in March 2016, would provide the occasion to further risk reduction of pesticide use. She also said that FAO agreed in principle to support the laboratory of Bishkek for improving or implementing new methodology for residue analysis and that modality of such support would need to be discussed further.

Conclusions of the Study on the fate of insecticides used for locust control on pasture in Kyrgyzstan - residue analysis (country's presentation) (Item 20c)

125. The delegate of Kyrgyzstan made a presentation on the “Study on the fate of insecticides used for locust control on pastures in Kyrgyzstan” which was conducted in July 2015 near Bishkek, Kyrgyzstan. Several plots were treated with four insecticides commonly used for locust control in Kyrgyzstan. These insecticides belonged to three different chemical classes: (1) pyrethroids (alpha-cypermethrin, lambda-cyhalothrin), (2) phenyl-pyrazoles (fipronil) and (3) organophosphates (chlorpyrifos). The insecticides were applied to typical grassland pasture plots at dose rates used operationally for locust control. Vegetation samples were then collected according to the protocol established with the FAO International Consultant, Senior Environmental Expert, Mr Harold van der Valk, preserved and transported to the laboratories in Bishkek and Krasnodar (Russia) for residue analyses. Results of the analyses would allow to establish scientifically based livestock re-entry periods on pasture areas treated against locusts.
126. The Senior Environmental Expert, who attended the workshop by Skype, provided his comments. He commended the specialists from both laboratories, Bishkek and Krasnodar, for this well conducted study with rigorous sampling in the field. The study allowed to develop methodology of pesticide residue analysis on vegetation. However, the main problem of the study consisted in much lower than expected residue levels. This could be due to (1) pesticide degradation during transportation or storage of the collected samples; (2) residue extraction problem at Bishkek laboratory. According to the Senior Environmental Expert, the latter reason was the most likely one, because the analyses yielded similar results in both laboratories. Because of this, it was not possible to make a definite conclusion on livestock re-entry periods on treated areas. The Senior Expert recommended to review the extraction procedure, correct it, and repeat the study again using the same methodology. Most probably, the resulting re-entry periods will be shorter than the current ones because these insecticides degrade fast; in addition the international standards are not very strict for those specific pesticides. The delegates from Kyrgyzstan thanked the Senior Expert for his thorough comments and expressed their support to conducting the study once again in 2016.

**Progress made on safety and environmental precautions (countries' feedback) (Item 21)**

127. Countries made presentations on the subject using the provided template:
  - The delegate from Armenia reported that during the two past years anti-locust spraying was conducted by private companies only. Because of that, there were no means to control the use of PPE or other protective measures. As a rule, more problems with safety measures are encountered when the treatments are done by a small company. However, if the pesticides are procured through state budget, then safety and environmental measures will be imposed by the government and strictly controlled.
  - The delegates from Azerbaijan informed that there were no problems with PPE use or other safety precautions by personnel engaged in pesticide handling. Information about forthcoming treatments is delivered in time to farmers and local population using TV and other mass media. Treated areas are always clearly marked by flags. There is always a plant protection staff supervising the treatments. After treatments,

empty pesticide containers and other packaging material are collected and properly disposed. There were no incidents or complaints from population in 2015. The locust control team received an award for good practices of pesticide use.

- The delegate from Afghanistan indicated that the personnel engaged in locust control always wear PPE according to the pesticide used. Before the treatments, meetings with local population (shepherds, farmers etc.) are organized and information on the treatments is shared. After the treatments the empty pesticide containers are collected, pierced and properly disposed. PPE is cleaned and put in storage (where possible).
- The delegate from Georgia reported that it is tried to use less harmful pesticides. Sprayers are calibrated daily in order to make sure that they do not exceed the required dose rate. There are buffer zones observed around water bodies. PPE is always used. Locust control staff explain to rural population that they cannot enter treated zones immediately after treatments.
- The delegate from Kazakhstan explained that human health and environmental safety are considered as one of the most important parts of a locust control campaign. For each pesticide purchased for locust control by the Ministry, methodic recommendations are published on safe and efficient use. There are 5-km buffers around bee-keeping areas, 2-km buffers around public zones of leisure, 1-km buffers around settlements and 500-m buffers around zones of agricultural activities. Bee-keepers are always informed before the treatments start. For ground treatments, wind speed is taken into account and if it exceeds certain values, depending on the sprayer type, the treatments are cancelled. There were no incidents reported in 2015.
- The delegate from Kyrgyzstan reported that the winter period is used to train people on various aspects of pesticide handling. Plant protection staff is instructed not to allow strangers to enter treated areas. In some cases more toxic pesticides are used against adults compared to nymphs; this is taken into account when personnel are trained. All safety measures are always observed. No incidents were reported in 2015.
- The delegate from the Russian Federation informed that safety of staff and local population is strictly observed. Women under the age of 35 are not allowed to handle pesticides. High fines are imposed on violators of safety precautions. Pesticide label instructions are always followed. No cases of pesticide poisoning were reported in 2015.
- The delegate from Tajikistan explained that because organophosphates are used for locust control in the country, acetyl-cholinesterase testing of staff is performed using three testing kits provided by FAO. Staff undergo safety training. Pesticides are transported and stored correctly. For contract workers, a medical certificate is required before the contract is signed. In local locust headquarters, there is a doctor and an ambulance on duty. Rural population is informed about anti-locust treatments through TV and other mass media channels.
- The delegate from Turkmenistan reported that the annual locust plan has a special part devoted to human and environmental health. PPE is always used. Ministries of Nature Protection and Health are involved in the anti-locust campaigns. Doctor's checks are done regularly on staff. Locust control personnel fill out special journals where they describe safety measure during treatments. When the treatments are done near water bodies or cattle, information is provided to local administration and general population. In 2015, two bee-keepers did not move their hives despite the warning and experienced losses from pesticides. Empty pesticide containers are properly managed. A 20-day withholding period is imposed. Milk and meat are checked for insecticide residues.
- The delegate from Uzbekistan indicated that before the campaign starts, all personnel are checked by doctors. Since locust control is funded through the state budget, all safety precautions are strictly imposed and observed. After the

treatments, a report is prepared covering all aspects including safety measures. Local authorities provide doctors during campaign. Empty pesticide containers are properly disposed. It is not excluded though that some cases of poisoning happened.

## **ANY OTHER BUSINESS**

128. The Senior Officer, Team Leader, AGPMM, indicated that side discussions would be held with each delegation on Friday morning, i.e. the face to face meetings to exchange on rooms for improvement in the national monthly bulletins on locust situation and management; she asked that at this occasion reflection also take place on a subject on the rise, the impact of climate change, i.e. of exceptional weather events, on locusts in the CCA region. The delegate of Uzbekistan mentioned that a joint article, by Mr A. Latchininsky and Mr F. Gapparov with co-authors on the influence of climate change on locusts has been published in 2015 and indicated, as an example, the presence of DMA at 2200 m above the sea level, which had been observed in the past recent years.
129. Finally, two proposals were made regarding the venue of the 2016 annual Technical Workshop: Astana, Kazakhstan, and Ashgabat, Turkmenistan. Because no annual workshop has ever been held in Turkmenistan, it was decided to organize it in this country. However, considering that the former attempt, in 2014, to organize it in Turkmenistan had not been successful, it was agreed that should no official confirmation be received by FAO from Turkmenistan by the end of 2015, the annual workshop would be held in Kazakhstan.

## **ADOPTION OF THE REPORT**

130. The Report is adopted unanimously with amendments made.

## **CLOSING REMARKS**

131. Mr Ghorbandi, the Vice-Chairperson, and the Senior Officer, Team Leader, AGPMM, indicated that it was a fruitful meeting, which addressed a lot of different technical issues as well as regional cooperation in the coming years. They thanked all delegates for their active participation and wish them a safe and good return home.

## **ANNEXES**

## Annex I – List of participants

NAME	TITLE & AFFILIATION	TEL.	E-MAIL ADDRESS	FULL ADDRESS
<b>COUNTRIES</b>				
<b>AFGHANISTAN</b>				
<b>Mr Abdul Wadood Ghorbandi</b>	Director, Plant Protection and Quarantine Department, Kabul, Ministry of Agriculture, Irrigation and Livestock	Mob: +93(0)700500302 Tel: +93(0)202411633Mob:	ghorbandi32@yahoo.com	Kabul, Kabul, Jamal-Mana, Ministry of Agriculture, Irrigation and livestock (MAIL)
<b>Mr Mohd Omran Rahmani</b>	Head, Plant Protection and Quarantine Department, Balkh Province, Ministry of Agriculture, Irrigation and Livestock	+93(0)799698250 Tel: +93(0)0502043370	omranrahmani@ymail.com	
<b>ARMENIA</b>				
<b>Mr Mkrtich Danielyan</b>	National Consultant for locust information (national monthly bulletins)	Home +37410204572 Mobile +37498415318	mkrkich.danielyan@yahoo.com	
<b>AZERBAIJAN</b>				
<b>Mr Damad Sultanov</b>	Acting Director, National Centre for Plant Protection, State Phytosanitary Control Service, Ministry of Agriculture	Mobile +994703660867 Work +994125635841	damed.sultanov@mail.ru	N. Narimanov str., 7a, State Phytosanitary Control Service, 1025 Baku
<b>Mr Ilham Bayramov</b>	Principal adviser, Plant Protection and Certification Sector, State Phytosanitary Control Service, Ministry of Agriculture	Mobile: +994503513901 Work +994125635841	ilhambayramov@mail.ru	
<b>GEORGIA</b>				
<b>Mr Bejan Rekhviashvili</b>	Deputy Head, Plant Quarantine Division, National Food Agency, Ministry of Agriculture	Tel: +995322919167 Mob: +995599018507	bezhan.r@gmail.com	6. Marshal Gelovani Avenue 0159, Tbilisi

<b>Mr Lasha Nutsubidze</b>	Head, Phytosanitary Monitoring and Risk Analysis Division, National Food Agency, Ministry of Agriculture	Tel: +995 322919167 Mob: +995 591914836	lashanutsubidze71@yahoo.com	
<b>KAZAKHSTAN</b>				
<b>Mr Mukhtar Zhanabayev</b>	Chief Expert, State Phytosanitary Department, State Inspection Committee in the Agricultural Sector, Ministry of Agriculture	Tel: +77712969878 Mob: +77172555789	zhanabaev.m@minagri.gov.kz	Astana city . Beymbet Maylin, 16/4 index 010 000
<b>Mr Abdirashid Mukhyshov</b>	Deputy Director, National Methodological Center of Phytosanitary Diagnosis and Prognosis, State Inspection Committee in the Agricultural Sector, Ministry of Agriculture	Tel: 87015261669 Mob: 87172357692	muhishov@mail.ru	
<b>KYRGYZSTAN</b>				
<b>Mr Vladimir Pak</b>	Deputy Director, Department of Chemicalization and Plant Protection, Ministry of Agriculture and Melioration	Mob. +996554031152 Work. +996312352546	dephim@mail.ru	241, Bokonbaeva street Bishkek, Kyrgyzstan
<b>Mr Almaz Alakunov</b>	Head, Department of Plant Protection and Pesticide Registration, Department of Chemicalization and Plant Protection, Ministry of Agriculture and Melioration	Mob. +996773881755 Work: +996312352656 Fax: +996312352711	a_alakunov@mail.ru	
<b>THE RUSSIAN FEDERATION</b>				
<b>Mr Alexander Malko</b>	Director, Federal State Institution "Russian Agricultural Center", Ministry of Agriculture	Mob: +7 (985) 9242138 Work :+7 (495) 7339835 Fax :+7 (495) 7459563	alexmalko@mail.ru	Orlikov str., 1/11, building 1, 107139, Moscow
<b>Mr Dmitrii Govorov</b>	Deputy-Director, Federal State Institution "Russian Agricultural Center", Ministry of Agriculture	Mob: +7 (926) 5203434 Work +7 (495) 6610991 Fax: +7 (499) 2374053	dmitrii_govorov@mail.ru	

<b>TAJIKISTAN</b>				
<b>Mr Kiyomuddin Ganiev</b>	Head, State Unitary Enterprise “Locust Control”, Ministry of Agriculture	Work: + 992905509766 Fax: +992372210442	905509766@mail.ru	Building of Ministry of Agriculture, 44 Rudaki Avenue Dushanbe
<b>Mr Fayziddin Komilov</b>	Head, Monitoring Department, State Unitary Enterprise “Locust Control”, Ministry of Agriculture	Work:+992372210442	Faiziddin_2486@mail.ru	
<b>TURKMENISTAN</b>				
<b>Mr Meret Geldiyev</b>	Head, Plant Protection Department, Ministry of Agriculture	Tel: + 99312447564 Fax: +99312447565 Mob: +99365712809	minselhoz92@mail.ru	Ministry of Agriculture - Turkmenistan, Ashgabat, Archabil main str., 92
<b>Mr Gurbangeldy Matiyev</b>	Chief specialist, Plant Quarantine Service, Akhal Region, Ministry of Agriculture	Tel: +99365539824	minselhoz92@mail.ru	
<b>UZBEKISTAN</b>				
<b>Mr Furkat Gapparov</b>	Head, Laboratory for Locust Research, Uzbek Research Institute for Plant Protection	Work: +998931817939	furkat_g@mail.ru	4, Babur street, Kibrai district, Tashkent region, Uzbekistan P.O.111215
<b>Mr Bakhtiyor Oltinbekov</b>	Head, Tashkent regional center for locust control, Ministry of Agriculture and Water Resources	Work: +998983110909	agro.uz@bk.ru	Navoi Street, 4 100004 Tashkent
<b>FAO</b>				
<b>Ms Annie Monard</b>	Senior Officer, Team Leader, Locusts and transboundary plant pests and diseases, AGPMM, FAO	Work: +39 06 57053311 Mob: +39 340 8584414 Fax: +39 0657055271	annie.monard@fao.org	FAO- Viale delle Terme di Caracalla – 00153 Rome, Italy
<b>Ms Marion Chiris</b>	Locust Programme Officer, AGPMM, FAO	Work: +39 0657054525	marion.chiris@fao.org	FAO- Viale delle Terme di Caracalla – 00153 Rome, Italy
<b>Mr Alexandre Latchininsky</b>	FAO Consultant, Senior Locust Expert	Tel: +1 3077662298 Fax: +1 3077666403	latchini@uwyo.edu	Dept.3354, 1000E University Av, Laramie, WY82071-2000, USA

<b>Ms Greta Graviglia</b>	FAO Consultant, Operations Expert	Mob: +352 661612011	greta.graviglia@fao.org	FAO- Viale delle Terme di Caracalla – 00153 Rome, Italy
<b>Ms Nadiya Muratova</b>	FAO Consultant, GIS Expert		nmuratova@rambler.ru	
<b>Mr Harold van der Valk (by remote)</b>	FAO Consultant, Environmental Expert	Tel: +31183500410	harold.vandervalk@planet.nl	
<b>Ms Anna Volkova</b>	FAO Consultant, Editor		vklanna@yandex.ru	
<b>RESOURCE PERSONS</b>				
<b>Mr Michael G. Sergeev</b>	Professor, Department of General Biology and Ecology, Novosibirsk State University, Russia		mgsergeev@aim.com	
<b>Mr Wouter Pronk</b>	Project Manager, Milieukontakt International, Amsterdam, the Netherlands	Phone: +31205318930 Fax: +31205318940	w.pronk@milieukontakt.nl info@milieukontakt.nl	Einsteingebouw/Einstein building Kabelweg 21, 4e verdieping/4th floor.1014 BA Amsterdam, The Netherlands
<b>OBSERVERS</b>				
<b>Mr V. I. Dolzhenko</b>	Deputy Director of Scientific Work, Academician of the Russian Academy of Sciences, All-Russian Institute of Plant Protection (FSBSI VIZR)	Tel: +7(812) 470-4384	info@vizr.spb.ru	All-Russian Institute of Plant Protection (FSBSI VIZR)  3, Podbelsky shosse St. Peterburg-Pushkin
<b>Mr A.K. Lysov</b>	Deputy Director of Scientific Work, All-Russian Institute of Plant Protection (FSBSI VIZR)			
<b>Mr A.B. Laptiyov</b>	Deputy Head, Regulation Center of Pesticide use, All-Russian Institute of Plant Protection (FSBSI VIZR)			
<b>Ms G. I. Sukhoruchenko</b>	Chief Researcher, All-Russian Institute of Plant Protection (FSBSI VIZR)			
<b>Mr A.N. Frolov</b>	Head, Laboratory of Agricultural Biology, All-Russian Institute of Plant Protection (FSBSI VIZR)			
<b>Mr G.R. Lednyov</b>	Leading Researcher, All-Russian Institute of Plant Protection (FSBSI VIZR)			

<b>Mr M.V. Levchenko</b>	Senior Researcher, All-Russian Institute of Plant Protection (FSBSI VIZR)			
<b>Mr Mikhail Shilin</b>	Professor and Chair of Ecology		shilin@rshu.ru	Russian State Hydrometeorological University (RSHU)
<b>INTERPRETERS</b>				
<b>Mrs Tatiana Vasilieva</b>				
<b>Mrs Svetlana Vasilieva</b>				
<b>EVENT MANAGEMENT COMPANY - CWT</b>				
<b>Ms Paolina Glebko</b>	Hostess, Carlson Wagonlit Travel (CWT)			

## Annex II – Approved Agenda

### Opening

1. Opening address
2. Election of Chairman, Vice-Chairman & Drafting Committee
3. Adoption of the agenda

### Session 1: National locust campaigns in 2015 and forecasts for 2016

4. National locust campaigns in 2015 (countries' presentations)
5. Locust forecast for 2016 and preparation of the next campaign (countries' presentations)

### Session 2: Implementation of the Programme to improve locust management in Caucasus and Central Asia

6. Overview on Programme implementation in 2015 and funding situation
7. Regional cooperation in 2015
  - a) Regular information sharing: how to further improve the monthly bulletins?
  - b) Cross-border or joint surveys (May 2015)
    - Armenia – Azerbaijan – Georgia – Russia (countries' presentations)
    - Kyrgyzstan – Uzbekistan (countries' presentations)
    - Kyrgyzstan – Tajikistan (countries' presentations)
    - Tajikistan – Uzbekistan (countries' presentations)
8. National capacities' development
  - Trainings held in 2015:
    - Locust monitoring and information management: Armenia, Azerbaijan and Georgia, May 2015 (countries' presentation)
    - Mitigating and monitoring the impact of locust control on human health and the environment: Uzbekistan, August 2015 (country's presentation)
  - Update on fellowships on locust management
  - Presentation of the monographs on the three locust pests
9. Workshop on locust contingency plans in CCA: main outcomes
10. Presentation of the newly-approved Japanese project for Afghanistan, Kyrgyzstan and Tajikistan (and synergies with other projects within the Programme)
11. Programme of work during Year 5 (2016) and in the coming years: what's next?

### **Session 3: Developing monitoring and analysing systems (Geographical Information System)**

12. Testing the Automated System of Data Collection (ASDC): lessons learnt and recommendations (pilot countries' presentations: Georgia, Russia and Uzbekistan)
13. Update of fields in ASDC
14. Update on the development of the regional Geographical Information System (GIS) in CCA

### **Session 4: Locust control**

15. Presentation of the latest Pesticide Referee Group Report (December 2014) and of the Stakeholder Workshop on procurement and supply of pesticides for locust control (September 2015).
16. Progress made on spraying technologies, products and biopesticides (countries' feedback)
17. Presentation of the video on the use of Ultra-low Volume technology in locust control
18. Presentation of the advocacy and tutorial videos on the use of biopesticides against locusts

### **Session 5: Risk reduction for human health and the environment**

19. Mitigating impact of locust control operations:
  - E-Committee on empty pesticide container management
20. Monitoring impact of locust control operations:
  - Activities carried out by the newly-created Human Health and Environment Monitoring Team in Tajikistan, lessons learnt and recommendations (country's presentation)
  - Pilot activity to develop a monitoring system on quality control and efficacy of locust treatments in Kyrgyzstan (country's presentation)
  - Conclusions of the Study on the fate of insecticides used for locust control on pasture in Kyrgyzstan - residue analysis (country's presentation)
21. Progress made on safety and environmental precautions (countries' feedback)

### **Closing**

22. Any other business
23. Adoption of the report
24. Closure address

## Annex III – Implementation of the Programme during Year 4 (budget and estimate expenditures)

Res. & Act.	Description	TOTAL (USD) (1st Oct. 2014-30 Sept. 2015)		USAID (USD)		Turkey (USD)		FAO RP (USD)		FAO - TCP TAJ (USD)	
		Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4
<b>R1 - Regional cooperation</b>		<b>108,500</b>	<b>95,452</b>	<b>105,000</b>	<b>91,456</b>	<b>0</b>	<b>809</b>	<b>0</b>	<b>0</b>	<b>3,500</b>	<b>3,187</b>
1.1. Facilitate regional exchanges to manage locust situations		108,500	95,452	105,000	91,456		809			3,500	3,187
1.1.1. Create/maintain regular regional information sharing of standardized data		30,000	29,251	30,000	29,251						
1.1.2. Allow direct experience exchange (technical workshop)		78,500	66,201	75,000	62,205		809			3,500	3,187
1.2. Develop coordination, including through transboundary policy		0	0								
1.3. Identify the best long-term solution for sustainable regional cooperation		0	0								
<b>R2 - National capacities</b>		<b>175,500</b>	<b>6,842</b>	<b>34,000</b>	<b>0</b>	<b>141,500</b>	<b>6,842</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
2.1. Build up capacities through a vast Training-of-Trainers (ToT) programme		0	0								
2.2. Make available and accessible background documentation and literature		34,000	0	34,000	0						
a Bibliography & Material to be made available (E-committee on documentation)		0	0								
b Monographies		0	0								
c Practical guidelines		34,000	0	34,000							
2.3. Allow internships and post-graduate formation		141,500	6,842			141,500	6,842				
a One-month internships		0	0								
b Fellowship: 2 or 3-year diploma for students		141,500	6,842			141,500	6,842				
2.4. Promote and support applied research		0	0								
a Grants for applied research		0	0								
b Entomological and chemical equipment for laboratories		0	0								
<b>R3 - Locust issues and disasters better anticipated and mitigated</b>		<b>100,000</b>	<b>108,683</b>	<b>100,000</b>	<b>108,683</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
3.1. Improve survey operations for better field locust monitoring		40,000	35,698	40,000	35,698						
3.1.1. Strengthen human capacities (techn. assistance on survey)		40,000	33,077	40,000	33,077						
3.1.2. Strengthen operational capacities (survey equipment)		0	2,621		2,621						
3.2. Organize regular cross-border surveys		20,000	33,852	20,000	33,852						
3.3. Develop monitoring and analyzing systems		40,000	39,133	40,000	39,133						
3.3.1. Extend use of Geographical Information System and remote sensing		40,000	39,133	40,000	39,133						
3.3.2. Improve forecasting		0	0								
3.4. Enhance preparedness: harmonized national contingency plans		0	0								
<b>R4 - Improved response mechanisms to locust outbreaks</b>		<b>40,000</b>	<b>62,491</b>	<b>40,000</b>	<b>41,491</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>21,000</b>	<b>0</b>	<b>0</b>
4.1. Allow early reaction and appropriate control operations		0	0								
4.1.1. Strengthen human capacities (techn. assistance on control)		0	0								
4.1.2. Strengthen operational capacities (control equipment)		0	0								
4.1.3. Enhance public-private partnership		0	0								
4.2. Promote less harmful pesticides and alternatives to conventional pesticides		40,000	62,491	40,000	41,491			0	21,000		
4.2.1. Develop ULV formulations and related techniques		20,000	21,664	20,000	21,664						
4.2.2. Propose alternatives to conventional pesticides (demonstration)		20,000	29,955	20,000	8,955			0	21,000		
4.2.3. Encourage registration of more pesticides		0	10,872		10,872						
4.3. Promote joint cross-border control operations		0	0								

Res. & Act.	Description	TOTAL (USD) (1st Oct. 2014-30 Sept. 2015)		USAID (USD)		Turkey (USD)		FAO RP (USD)		FAO - TCP TAJ (USD)	
		Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4	Budget Year 4	Exp. Year 4
<b>R5 - Impact on human health &amp; environment mitigated/monitored</b>		<b>60,000</b>	<b>75,033</b>	<b>20,000</b>	<b>39,336</b>	<b>40,000</b>	<b>35,697</b>			<b>0</b>	<b>2,242</b>
5.1. Mitigate impact of locust control operations on human health & environment		15,000	33,132	10,000	27,645	5,000	5,487				
5.1.1. Strengthen human capacities (techn. assistance)		10,000	11,691	10,000	11,691						
5.1.2. Strengthen operational capacities (PPE)		0	-4,546		-4,546						
5.1.3. Pesticides and empty containers management		5,000	25,987		20,500	5,000	5,487				
5.1.4. Produce extension material for mitigating impact of locust treatments		0	0								
5.2. Monitor impact of locust control operations on human health & environment		45,000	41,901	10,000	11,691	35,000	30,210				2,242
5.2.1. Strengthen human capacities (techn. assistance)		10,000	11,691	10,000	11,691						
5.2.2. Strengthen operational capacities (Testmate, environmental material, etc.)		0	6,071				6,071				
5.2.3. Develop integral system for environmental and health monitoring		35,000	21,675			35,000	21,675			0	2,242
5.2.4. Facilitate impact assessment & analysis of material (residue analysis)		0	2,464				2,464				
<b>R6 - Public information and awareness increased</b>		<b>0</b>	<b>1,800</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,800</b>	<b>0</b>	<b>0</b>
6.1. Develop awareness and education among local populations		0	0								
6.2. Enhance visibility of locust issues and management and of donor support		0	1,800						1,800		
6.2.1. Prepare and implement a communication plan		0	0								
6.2.2. Create and update a website on locusts in Caucasus and Central Asia		0	0								
<b>Other</b>		<b>33,600</b>	<b>0</b>	<b>30,000</b>	<b>0</b>	<b>3,600</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Coordination (Locust Programme Officer)		0	0								
Evaluation		0	0								
FAO SEC		33,600	0	30,000	0	3,600	0				
TSS		0	0								
<b>Sub-total</b>		<b>517,600</b>	<b>352,543</b>	<b>329,000</b>	<b>280,966</b>	<b>185,100</b>	<b>43,348</b>	<b>0</b>	<b>22,800</b>	<b>3,500</b>	<b>5,429</b>
<b>Support cost</b>		<b>34,400</b>	<b>27,650</b>	<b>23,000</b>	<b>20,872</b>	<b>10,900</b>	<b>6,032</b>	<b>0</b>	<b>0</b>	<b>500</b>	<b>746</b>
<b>Total</b>		<b>552,000</b>	<b>380,193</b>	<b>352,000</b>	<b>301,838</b>	<b>196,000</b>	<b>49,380</b>	<b>0</b>	<b>22,800</b>	<b>4,000</b>	<b>6,175</b>

## Annex IV – Approved fields for the Automated System of Data Collection (ASDC)

**Locust Survey Form**

Nb./ Нумерация	Locust Survey Form		Форма для обследования саранчовых	
	Photo 1-3		Фото 1-3	
<b>1</b>	<b>Identification of the place</b>		<b>Идентификация места</b>	
1.1*	Country		Страна	
1.2*	Oblast		Область	
1.3*	Rayon		Район	
1.4*	Rural district		Сельский округ	
1.5*	Name of survey team leader		Имя лидера команды обследования	
1.6*	Date	day/month/year	Дата	день/месяц/год
1.7	Name of the village, farm or site		Название поселка, хозяйства или местности	
1.8*	Latitude of point #1 (geographic coordinates of surveyed area)		Широта точки #1 (географические координаты места обследования)	
1.9*	Longitude of point #1 (geographic coordinates of surveyed area)		Долгота точки #1 (географические координаты места обследования)	
1.10	Latitude of point #2 (geographic coordinates of surveyed area)		Широта точки #2 (географические координаты места обследования)	

1.11	Longitude of point #2 (geographic coordinates of surveyed area)		Долгота точки #2 (географические координаты места обследования)	
1.12	Latitude of point #3 (geographic coordinates of surveyed area)		Широта точки #3 (географические координаты места обследования)	
1.13	Longitude of point #3 (geographic coordinates of surveyed area)		Долгота точки #3 (географические координаты места обследования)	
1.14	Latitude of point #4 (geographic coordinates of surveyed area)		Широта точки #4 (географические координаты места обследования)	
1.15	Longitude of point #4 (geographic coordinates of surveyed area)		Долгота точки #4 (географические координаты места обследования)	
1.16	Latitude of point #5 (geographic coordinates of surveyed area)		Широта точки #5 (географические координаты места обследования)	
1.17	Longitude of point #5 (geographic coordinates of surveyed area)		Долгота точки #5 (географические координаты места обследования)	
1.18	Latitude of point #6 (geographic coordinates of surveyed area)		Широта точки #6 (географические координаты места обследования)	
1.19	Longitude of point #6 (geographic coordinates of surveyed area)		Долгота точки #6 (географические координаты места обследования)	
1.20*	Surveyed area (ha)		Обследованная площадь (га)	

<b>2</b>		<b>Ecological information</b>		<b>Экологическая информация</b>	
2.1*	Type of biotope	«CIT steppes», «CIT fallow lands», «CIT crops», «CIT pastures», «CIT hills, mountains», «DMA flatlands», «DMA crops», «DMA pastures», «DMA hills, mountains», «LMI low dry reeds», «LMI high wet reeds», «LMI others», «Other locust crops», «Other locust flatlands», «Other locust hills», «Others»	Тип биотопа	«CIT степи», «CIT залежь», «CIT посевы», «CIT пастбища», «CIT холмы, горы», «DMA равнина», «DMA посевы», «DMA пастбища», «DMA холмы, горы», «LMI низкие сухие тростники», «LMI высокие влажные тростники», «LMI другое», «Другие саранчовые на посевах», «Другие саранчовые на равнине», «Другие саранчовые на холмах», «Другие»	
2.2*	Vegetation	greening, green, drying, dry, absent	Растительность	Всходы, Зеленая, Засыхающая, Сухая, Отсутствует	
2.3*	Vegetation cover	Low, Medium, Dense	Густота растительного покрова	Редкая, Средняя, Густая	
2.4	Weather: air temperature (°C)		Погода: температура воздуха (°C)		
2.5	Weather: wind (m/s)		Погода: ветер (м/с)		
<b>3</b>		<b>Locust information</b>		<b>Информация о саранчовых</b>	
3.1*	Present	yes/no	Присутствуют саранчовые	да/нет	
3.2*	Locust species	CIT, DMA, LMI, CIT&DMA, CIT&LMI, others	Вид саранчи	CIT, DMA, LMI, CIT&DMA, CIT&LMI, другие	
3.3*	Infested area (ha)		Заселенная площадь (га)		
<b>4</b>		<b>Eggs</b>		<b>Яйца</b>	
4.1*	Egg-bed (surface in m <sup>2</sup> )		Залежь кубышек (площадь м <sup>2</sup> )		
4.2*	Egg-pods (density/m <sup>2</sup> ) from		Кубышки (плотность/м <sup>2</sup> ) от		
4.3*	to		до		

4.4	Eggs (average number/egg-pod)		Яйца (в среднем в кубышке)	
4.5*	Eggs (% viable)		Яйца (% жизнеспособных)	
4.6*	Natural enemies present (list)		Наличие естественных врагов (перечисление)	
<b>5</b>	<b>Hoppers</b>		<b>Личинки</b>	
5.1*	Hatching	Beginning, Mass	Отрождение	Начало, Массовое
5.2*	Hopper stages	Small, Small and Medium, Medium, Large	Возраст личинок	Младшие, Младшие и средние, Средние, Старшие
5.3	Appearance	Solitary, <i>Transiens</i> , Gregarious	Фаза	Одиночная, Переходная, Стадная
5.4*	Behaviour	Isolated, Scattered, Groups	Поведение	Изолированные, Разреженные, Группы
5.5*	Hopper density (/m <sup>2</sup> ) from		Плотность личинок (/m <sup>2</sup> ) от	
5.6*	to		до	
<b>6</b>	<b>Hopper Bands</b>		<b>Кулиги</b>	
6.1*	Minimum band density (/m <sup>2</sup> )		Плотность минимальная в кулиге (/m <sup>2</sup> )	
6.2*	Maximum band density (/m <sup>2</sup> )		Плотность максимальная в кулиге (/m <sup>2</sup> )	
6.3*	Band sizes (m <sup>2</sup> )		Размер кулиг (m <sup>2</sup> )	
6.4*	Number of bands (/ha)		Количество кулиг (/га)	
6.5*	Behavior	Marching, Feeding, Decreased activity, Stupor, Molting	Поведение	Миграция, Питание, Понижение активности, Оцепенение, Линька
<b>7</b>	<b>Adults</b>		<b>Имаго</b>	
7.1*	Fledging	Beginning, Mass	Окрыление	Начало, Массовое
7.2*	Maturity	yes/no	Половозрелость	да/нет

7.3*	Phase	Solitary, <i>Transiens</i> , Gregarious	Фаза	Одиночная, Переходная, Стадная
7.4*	Behaviour	Isolated, Scattered, Groups	Поведение	Одиночные, Разреженные, Группы
7.5	Adult density (/ha)		Плотность имаго (/га)	
7.6*	Adult density (/m <sup>2</sup> )		Плотность имаго (/м <sup>2</sup> )	
7.7*	Feeding and roosting	yes/no	Питание и размещение на растениях	да/нет
7.8*	Copulating	yes/no	Спаривание	да/нет
7.9*	Laying	yes/no	Яйцекладка	да/нет
7.10*	Flying	yes/no	Полеты	да/нет
<b>8</b>	<b>Swarms</b>		<b>Стаи</b>	
8.1*	Swarm density	Low, Medium, High	Плотность в стае	Низкая, Средняя, Высокая
8.2	Swarm size (km <sup>2</sup> )		Размер стаи (га)	
8.3	Number of swarms		Число стай	
8.4*	Flying direction	Variable, N, N-E, E, S-E, S, S-W, W, N-W	Направление полета	Переменный, С, С-В, В, Ю-В, Ю, Ю-З, З, С-З
8.5	Flying height	Low, Medium, High	Высота полета	Низкая, Средняя, Высокая
Comments			Комментарии	

**Spray Monitoring Form (including safety and environment issues)**

Nb./ Нумерация	<b>Spray Monitoring Form (including safety and environment issues)</b>		<b>Форма для мониторинга противосаранчовых обработок (включая вопросы безопасности и охраны окружающей среды)</b>	
	Photo 1-3		Фото 1-3	
<b>1</b>	<b>Identification of the control site</b>		<b>Идентификация места противосаранчовых обработок</b>	
1.1*	Country		Страна	
1.2*	Oblast		Область	
1.3*	Rayon		Район	
1.4	Rural district		Сельский округ	
1.5*	Village		Поселок	
1.6	Farm or site		Хозяйство или местность	
1.7*	Latitude (site center)		Широта (центр участка)	
1.8*	Longitude (site center)		Долгота (центр участка)	
1.9*	Name of control team leader		Имя лидера команды по обработке	
1.10*	Date	day/month/year	Дата	день/месяц/год
1.11	Latitude of point #1 (geographic coordinates of treated area)		Широта точки #1 (географические координаты площади обработки)	
1.12	Longitude of point #1 (geographic coordinates of treated area)		Долгота точки #1 (географические координаты площади обработки)	

1.13	Latitude of point #2 (geographic coordinates of treated area)		Широта точки #2 (географические координаты площади обработки)	
1.14	Longitude of point #2 (geographic coordinates of treated area)		Долгота точки #2 (географические координаты площади обработки)	
1.15	Latitude of point #3 (geographic coordinates of treated area)		Широта точки #3 (географические координаты площади обработки)	
1.16	Longitude of point #3 (geographic coordinates of treated area)		Долгота точки #3 (географические координаты площади обработки)	
1.17	Latitude of point #4 (geographic coordinates of treated area)		Широта точки #4 (географические координаты площади обработки)	
1.18	Longitude of point #4 (geographic coordinates of treated area)		Долгота точки #4 (географические координаты площади обработки)	
1.19	Latitude of point #5 (geographic coordinates of treated area)		Широта точки #5 (географические координаты площади обработки)	

1.20	Longitude of point #5 (geographic coordinates of treated area)		Долгота точки #5 (географические координаты площади обработки)	
1.21	Latitude of point #6 (geographic coordinates of treated area)		Широта точки #6 (географические координаты площади обработки)	
1.22	Longitude of point #6 (geographic coordinates of treated area)		Долгота точки #6 (географические координаты площади обработки)	
1.23*	Area infested (ha)		Заселенная площадь (га)	
1.24*	Area treated (ha)		Обработанная площадь (га)	
<b>2</b>	<b>Vegetation data</b>		<b>Растительность</b>	
2.1*	Type	natural, crops	Тип	Естественная, Посевы
2.2*	Height (cm)		Высота (см)	
2.3*	Vegetation cover	rare, medium, dense	Густота растительного покрова	Редкая, Средняя, Густая
2.4	Crop name		Наименование сельхозкультуры	
2.5*	Damage	no, low, medium, high, entire	Поврежденность	Нет, Слабая, Средняя, Сильная, Сплошная
2.6	Damage area (ha)		Площадь повреждений (га)	
<b>3</b>	<b>Insecticide information</b>		<b>Информация об инсектицидах</b>	
3.1*	Trade name		Коммерческое название	
3.2*	Active substance		Действующее вещество	
3.3*	Concentration (%)		Концентрация (%)	
3.4*	Formulation	EC, ULV, others	Препаративная форма	УМО, КЭ, Другие

3.5	Dose rate (l of commercial product/ha)		Норма расхода (л препарата/га)	
3.6	Rate of working solution (l/ha)		Расход рабочей жидкости (л/га)	
3.7	Total volume of working solution actually applied (l)		Общий объем использованной рабочей жидкости (л)	
3.8	Number of spores (/ml)		Концентрация спор (/мл)	
<b>4</b>	<b>Weather conditions</b>		<b>Погодные условия</b>	
4.1*	Start time	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13,14, 15, 16, 17, 18, 19, 20, 21, 22, 23	Время начала обработки	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13,14, 15, 16, 17, 18, 19, 20, 21, 22, 23
4.2*	End time	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13,14, 15, 16, 17, 18, 19, 20, 21, 22, 23	Время окончания обработки	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,12, 13,14, 15, 16, 17, 18, 19, 20, 21, 22, 23
4.3	Temperature at the start (°C)		Температура нач. (оС)	
4.4	Temperature at the end (°C)		Температура кон. (оС)	
4.5	Relative humidity at the start (%)		Отн. влажность воздуха нач. (%)	
4.6	Relative humidity at the end (%)		Отн. влажность воздуха кон. (%)	
4.7	Wind speed at the start (m/s)		Скорость ветра нач. (м/с)	
4.8	Wind speed at the end (m/s)		Скорость ветра кон. (м/с)	
4.9	Wind direction at the start	Variable, N, N-E, E, S-E, S, S-W, W, N-W	Направление ветра нач.	Переменный, С,С-В, В, Ю-В, Ю, Ю-З, З, С-З

4.10	Wind direction at the end	Variable, N, N-E, E, S-E, S, S-W, W, N-W	Направление ветра кон.	Переменный, С,С-В, В, Ю-В, Ю, Ю-З, З, С-З
4.11	Spray direction at the start	N, N-E, E, S-E, S, S-W, W, N-W	Направление опрыскивания нач.	С,С-В, В, Ю-В, Ю, Ю-З, З, С-З
4.12	Spray direction at the end	N, N-E, E, S-E, S, S-W, W, N-W	Направление опрыскивания кон.	С,С-В, В, Ю-В, Ю, Ю-З, З, С-З
<b>5</b>	<b>Locust information</b>		<b>Информация о саранчовых</b>	
5.1*	Type	CIT, DMA, LMI, CIT&DMA, CIT&LMI, others	Вид	CIT, DMA, LMI, CIT&DMA, CIT&LMI, другие
5.2*	Hopper stages	Small, Small and Medium, Medium, Large	Возраст личинок	Младшие, Младшие и средние, Средние, Старшие
5.3*	Imago	yes/no	Имаго	да/нет
5.4*	Density (/m2)		Плотность на м2	
5.5*	Hopper bands	yes/no	Кулиги	да/нет
5.6*	Swarms	yes/no	Стаи	да/нет
5.7*	Scattered	yes/no	Разреженные	да/нет
5.8	Appearance	solitary, transiens, gregarious	Фаза	одиночная, переходная, стадная
<b>6</b>	<b>Spray application</b>		<b>Сведения по опрыскиванию</b>	
6.1*	Spray platform	Aerial, Vehicle, Person	Способ опрыскивания	Авиа, Наземное, Ручное
6.2	Aerial	Plane, Helicopter, Deltaplane	Авиа	Самолет, Вертолет, Дельтаплан
6.3	Ground	Tractor, Vehicle ULV, Aerosol G	Наземное	Трактор, Машина УМО, Аэроз. Генератор

6.4	Person	Knapsack mechanical, Knapsack electric, Hand-held battery, Hand-held manual	Ручное	Ранцевый механический, Ранцевый электрический, Ручной батарейный, Ручной
6.5	Spray type	Full volume, Low volume, Ultra-low volume	Вид опрыскивания	Полнообъемное, Малообъемное, Ультрамалообъемное
6.6	Sprayer manufacturer		Марка опрыскивателя	
6.7	Sprayer model		Модель опрыскивателя	
6.8	Atomizer height above ground (m)		Высота распылителя над поверхностью почвы (м)	
6.9*	Barriers	yes/no	Барьеры	да/нет
6.10	Width (m)		Ширина барьера (м)	
6.11	Spacing (m)		Промежуток барьера (м)	
6.12*	Forward speed (km/h)		Средняя скорость движения (км/ч)	
6.13	Antenna DGPS used	yes/no	Антенна DGPS использовалась	да/нет
6.14	Ground marking	GPS, Flag, Vehicle, No	Наземная маркировка	GPS, Флаг, Машина, нет
<b>7</b>	<b>Control efficacy</b>		<b>Контроль эффективности</b>	
7.1*	Biological efficiency of treatment (%)		Биологическая эффективность обработки (%)	
7.2*	Time after treatment (hours)		Прошло времени после обработки (часов)	
7.3	Method of biological efficiency estimation	Visual, Accounting frame	Метод подсчета биологической эффективности	Визуальный, Учетная рамка

8	Safety and environment		Безопасность и окружающая среда	
8.1*	Protective clothing	Goggles, masks, gloves, overalls, caps, boots	Индивидуальные средства защиты	Очки, маска, перчатки, комбинезон, шапка, сапоги
8.2*	Protective clothing clean and in good state	yes/no	Защитная одежда чистая и в хорошем состоянии?	да/нет
8.3*	Operator accidentally exposed to insecticide or feeling unwell	yes/no	Оператор случайно подвергся воздействию инсектицида или плохое самочувствие	да/нет
8.4	If yes, describe what happened (description)		Если Да, опишите, что произошло	
8.5	Informed about spraying	Farmer, Shepherd, Beekeeper, Villager, Official, Other	Оповещенные об обработке	Фермер, Пастух, Пчеловод, Сельский житель, Должностное лицо, Другие
8.6*	Empty containers	Triple rinsed, Punctured, Taken back to base, Left in field, Buried, Burned	Пустые контейнеры	Трижды промытые, Проколотые, Возвращенные на базу, Оставленные в поле, Закопанные, Сожженные
8.7*	Effect on non-target organisms	yes/no	Воздействие на нецелевые организмы	да/нет
8.8	if Yes, type of organisms and effects (description)		Если Да, тип организмов и эффекты (описание)	
8.9*	Other environmental or health incident reported that might have been caused by the treatment	yes/no	Другие инциденты по здоровью или окружающей среде, возникшие возможно при обработке	да/нет
8.10	If Yes, type of incident and reported by whom (description)		Если Да, тип инцидента и кем сообщен (описание)	
Comments			Комментарии	

## Annex V – National locust situation in 2015 and forecast for 2016

### AFGHANISTAN

In 2015, 11 provinces of Afghanistan were affected by DMA and CIT. The anti-locust campaign started in the last week of April. The objective was to avoid crop losses in the field adjacent to locust breeding areas. The operational team (Plant Protection Provincial Departments) treated a total of 139 313 ha. After completing the control, the operational teams proceeded to surveying and mapping locust infested areas in order to produce a forecast for the next year.

Forecast for 2016: It is planned to treat over 160 000 ha.

### ARMENIA

The locust situation was calm in 2015. The total area of locust monitoring was 57 000 ha out of which 36 000 ha were infested. However, the densities usually did not exceed the economic threshold. The total area treated was 3 000 ha against CIT.

Forecast for 2016: CIT treatments will cover more than 1 500 ha.

### AZERBAIJAN

In general, the DMA situation was calm in 2015. Only 21 040 ha were treated, which is significantly less than in 2014. The treatments were done from the ground using 25 tractor sprayers, six vehicle-mounted ULV sprayers, and 30 knapsack sprayers. Pesticides used were chlorpyrifos+cypermethrin ULV and cypermethrin both in EC formulation.

Forecast for 2016: It is planned to treat over 50 000 ha

### GEORGIA

The area infested by CIT was 50 000 ha in 2015. Anti-locust treatments covered an area of 33 400 ha, including 4 000 ha of aerial ULV treatments. For ground treatments, vehicle-mounted ULV sprayers were used (26 640 ha) and sprayers Scout 34s (2 760 ha). Because of wet and cool spring, the control campaign started later than usual, on 28 May, and continued till 1st of August. Because of tall and dense vegetation cover in the areas of CIT mass breeding, the treatments had to be applied to crops attacked by the locusts.

Forecast for 2016: It is planned to treat over 40 000 ha.

### KAZAZAKSTAN

In 2015, the weather was cold and wet in the spring and summer, especially in North Kazakhstan, which created unfavorable conditions for locust development. Some LMI egg-beds remained flooded through the season. Because of all this, locust infested areas were significantly lower than in 2014. In total, 3.3 million ha were treated against locusts in 2015. Locust densities decreased, which resulted in phase transformation from gregarious into *transiens* and solitarious phases.

Forecast for 2016: Anti-locust treatments are planned for 1.8 million ha.

### KYRGYZSTAN

DMA hatching started two days earlier and CIT – 11 days earlier than in 2014. In total, 59 584 ha were treated including 98.5% against DMA and 1.5% against CIT. The bulk of the anti-locust treatments (77%) occurred in Jalal-Abad region in the south, where DMA exhibited high population densities for the third year in a row, which is unusual for this locust species. Treatments were carried out by aircraft (47%), vehicle-mounted ULV sprayers (37%) and tractors (16%). Insecticides used were pyrethroids (EC), imidacloprid (EC), fipronil and chlorpyrifos (both in ULV formulation).

Forecast for 2016: It is planned to treat 60 000 ha.

**RUSSIAN FEDERATION**

Locust situation in 2015 varied from one region to another. CIT-infested areas declined, and the locust transitioned into solitary phase. At the same time, LMI benefited from summer drought, which caused locust concentration, gregarization and swarm flights out of the breeding areas. The total area treated was close to 800 000 ha. All treatments were done using EC insecticides.

Forecast for 2016: Detailed information on areas of anti-locust treatments will be provided after completion of autumn egg-pod survey.

**TAJIKISTAN**

The weather in 2015 was favorable for locusts, which resulted in the increase of locust-infested areas and densities. Over 106 000 ha were infested, which represents a 22% increase compared to 2014. Anti-locust treatments were conducted in the areas of mass breeding in the foothills, usually at the altitude of 900 m and higher. The total treated area was 88 300 ha.

Forecast for 2016: Anti-locust treatments area planned on 84 000 ha ( $\pm 10\%$ ).

**TURKMENISTAN**

In general, Turkmenistan faced a sharp decline of locust (primarily DMA) infestations in 2015. Only 190 300 ha were treated using pyrethroid insecticides, which were applied by tractor and vehicle-mounted ULV sprayers. There were no aerial treatments. The biggest problem was DMA hatching at the altitudes between 1 800 and 2 200 m above sea level, which made it difficult to timely treat those breeding areas.

Forecast for 2016: Locust-infested areas continue to decline and treatments are planned for 100 000 ha.

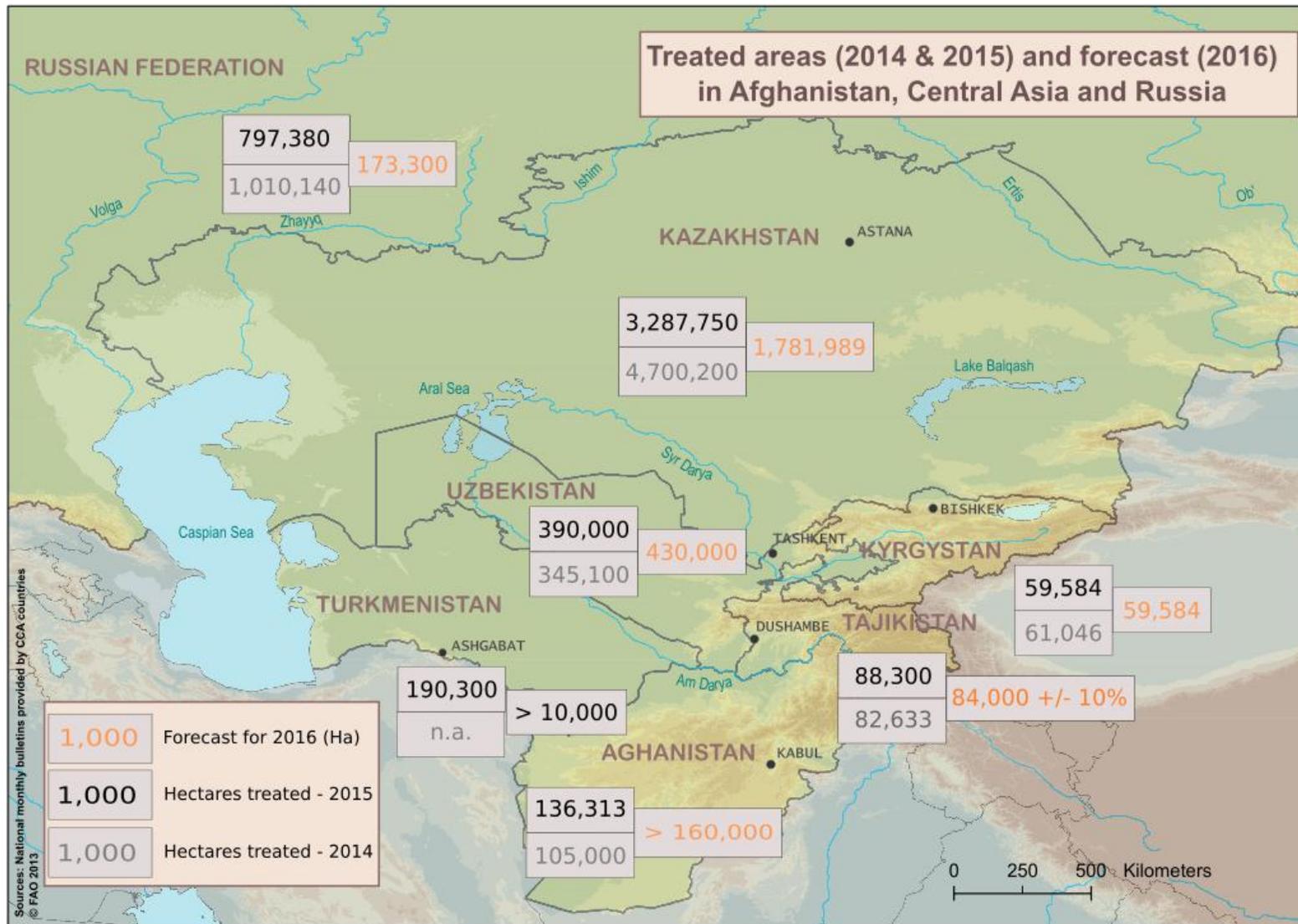
**UZBEKISTAN**

Weather conditions were favorable for locusts in 2015. The total area treated was 390 000 ha. Treatments were applied to infestations of all three locust species, CIT, DMA and LMI. Close cooperation and coordination of locust monitoring and management with adjacent countries allowed to timely and efficiently address the locust issues in border areas and prevent crop losses from migrating swarms. Late summer hatching of LMI in the Aral Sea zone created serious difficulties for locust control service in that region.

Forecast for 2016: It is planned to treat 430 000 ha.

Annex VI – Maps of treated areas in 2014 and 2015 and forecast for 2016 in CCA countries

Map of Central Asia and the Russian Federation



## Map of Caucasus

