



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

REPORT

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

13–15 November 2019

Tashkent, Uzbekistan

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on Locusts
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ACRONYMS AND ABBREVIATIONS

| | |
|--------|--|
| AGPMM | “Locusts and Transboundary Plant Pests and Diseases” Team (FAO) |
| ASDC | Automated System of Data Collection |
| CCA | Caucasus and Central Asia |
| CCALM | Caucasus and Central Asia Locust Management System |
| CIT | <i>Calliptamus italicus</i> (Linnaeus 1758), Italian Locust |
| DCPP | Department of Chemicalization and Plant Protection (Kyrgyzstan) |
| DLCC | Desert Locust Control Committee (FAO) |
| DMA | <i>Dociostaurus maroccanus</i> (Thunberg 1815), Moroccan Locust |
| EC | Emulsifiable concentrate |
| ET | Economic Threshold |
| 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 |
| JICA | Japan International Cooperation Agency |
| km | Kilometer |
| l | Liter |
| LMI | <i>Locusta migratoria migratoria</i> (Linnaeus 1758), Asian Migratory Locust |
| m | meter |
| MAIL | Ministry of Agriculture, Irrigation and Livestock (Afghanistan) |
| NDVI | Normalized Difference Vegetation Index |
| PPE | Personal Protective Equipment |
| RP | Regular Programme (FAO) |
| SEC | FAO Subregional Office for Central Asia (FAO) |
| SE-LCE | State Entity “Locust Control Expedition” (Tajikistan) |
| TCPf | Technical Cooperation Programme Facility (FAO) |
| ToT | Training-of-Trainers |
| TW | Technical Workshop |
| ULV | Ultra-Low Volume |
| USAID | United States Agency for International Development |
| USD | United States Dollar |



Participants in the “Technical Workshop on Locusts in Caucasus and Central Asia”
Tashkent, Uzbekistan, 13-15 November 2019

INTRODUCTION

1. The Technical Workshop on Locusts in Caucasus and Central Asia (CCA) took place in Tashkent, Uzbekistan, on 13-15 November 2019. It was organized by the Food and Agriculture Organization of the United Nations (FAO) in the framework of the interregional and multi-funded "Programme to improve national and regional locust management in Caucasus and Central Asia (CCA)".
2. The following ten countries participated in this Technical Workshop (TW): Afghanistan, Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Uzbekistan. The total number of participants was 28, including CCA countries' Delegates, Japan International Cooperation Agency (JICA) and FAO personnel. The list of participants is provided in Annex I.
3. The Technical Workshop was opened by Mr Rajabboy Ochilov, Deputy Head, Joint Stock Company "Uzagrokimiyohimoya", Uzbekistan. He informed about the recent establishment of "Uzagrokimiyohimoya", which includes Locust and Mullberry Pyralid Control Service and has its own budget and own specialists and scientists. He reminded that every year locusts represent an issue in some regions of Uzbekistan, especially those bordering neighboring countries. For this reason, joint activities are conducted with Kazak, Kyrgyz, Tajik and Turkmen counterparts. One major issue is Karakalpakstan, in the Aral Sea region, where not only vast areas have to be treated against locusts, which also migrated to Kazakhstan in the past, but which is also hit by severe drought. Technical assistance was provided by FAO in the past years, especially thanks to the visits of Mr Latchinsky, FAO Agricultural Officer/Locust management. Mr Ochilov also stressed the importance of regional cooperation in locust management; for example, important locust outbreaks have developed in neighboring areas with Tajikistan in the past but the situation has improved in border areas thanks to joint work and visit of specialists from both countries. Regional cooperation is also important in case neighboring countries do not have financial means to manage locusts. He also explained that Uzbekistan is locally producing chemicals and bio-pesticide. Next year they plan to use bio-pesticide to treat vast areas, which is fundamental to protect the environment.
4. Mr Furkat Gapparov, Head, Laboratory for Locust Research, Research Institute for Plant Protection and Delegate from Uzbekistan, added that thanks to the cooperation with FAO, locust situation in the Aral Sea zone remains under constant scrutiny. In addition, the new established organization is very beneficial to locust management, with agronomists/ entomologists in different fields directly employed by the company, and not hired seasonally, and who collect data and provide forecast, with results which are much more accurate than in the past. As to regional cooperation, he stressed that a good national phytosanitary situation is beneficial also for neighboring countries. He reminded that a few years ago an important Moroccan Locust migration from Kazakhstan occurred. In Uzbekistan, the damage on cultivated areas was limited but it was a problem for city infrastructures and tourists. Over the past three years, joint activities have instead been implemented with neighboring countries, thanks to their assistance and cooperation, which had never occurred previously; and this cooperation is fundamental, especially with Tajikistan. He wished a successful workshop to everybody.
5. Mr Dorjee Kinlay, FAO Consultant in Uzbekistan, welcomed the audience on behalf of the FAO Representation office in Uzbekistan, reminding that participants had already worked together over the past two days during the "Regional Workshop on Locust Data Collection, Forecast and Reporting in CCA", which was held on 11-12 November. He congratulated with the Ministry of Agriculture, Uzbekistan, for the good cooperation with FAO, and expressed the hope that it could continue in the future in the context of the new agriculture framework recently approved. Also, he stressed that regional cooperation is extremely important in this area and that FAO has a comparative advantage by supporting all countries in this scope. He also wished the participating countries to continue to cooperate in early reaction and early warning activities. He ended by

thanking all involved donors in the Locust Programme and CCA, the Japanese International Cooperation Agency (JICA), Turkey through the FAO-Turkey Partnership agreement (FTPP) and the United States Agency for international Development (USAID), and remarked that the new JICA project was considering as a new phase.

6. Mr Alexandre Latchininsky, FAO Agricultural Officer/Locust Management, welcomed the participants on behalf of the "Locusts and other Transboundary Plant Pests and Diseases" Team (AGPMM), by joining the greetings by Mr Ochilov and Mr Kinlay. He reminded that the FAO "Programme to improve national and regional locust management in CCA" started in 2011 for an actual total budget of USD 8.7 million thanks to the contribution of several sources (donors and FAO). Over the past eight years, big changes occurred in the region, with significant improvements in terms of equipment, capacity building through trainings, innovation technology, with the development of the Automated System for Data Collection (ASDC) and the Caucasus and Central Asia Locust Management system (CCALM). In this regard, he stressed that although it is difficult to introduce new tools, it is fundamental to continue working on their use. In addition, thanks to the Programme, the attention on the issue of the human health and the environment is receiving more and more attention from the governments. Going back to the words of Mr Ochilov, who said that there are special places, which are ecologically sensitive areas and where dangerous pesticides cannot be used, he stressed that one of the main directions in common future work is the introduction of biological products. He concluded by reminding that locust is a common problem and thus common work is required to fight it all together.

OFFICERS OF THE SESSION

7. The following officers were elected:

| | |
|---------------------|--|
| Chairperson: | Mr Utkir Mirzaev (Uzbekistan) |
| Vice-Chairperson: | Mr Alexander Malko (Russian Federation) |
| Drafting Committee: | Mr Andrei Zhivykh (Russian Federation) |
| | Mr Tural Javadzade (Azerbaijan) |
| | Mr Alexandre Latchininsky, Agricultural Officer/Locust Management, AGPMM (FAO) |
| | Ms Nadiya Muratova, International Consultant, Geographical Information System (GIS) Expert (FAO) |
| | Ms Greta Graviglia, International Consultant, Operations Expert (FAO) |

AGENDA

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

SESSION 1: NATIONAL 2019 LOCUST CAMPAIGNS AND FORECASTS FOR 2020

National locust campaigns in 2019, forecasts for 2020 and preparation of the next campaigns (Item 4)

9. The Delegates from all ten countries made comprehensive presentations on their respective national 2018 locust campaigns. The surveyed, infested and treated areas per country as well as the outstanding points from the presentations are presented below (see also maps in Annex III).

Table 1. Surveyed, infested and treated areas in 2019 in CCA

| Country | Area (in hectares) | | |
|---------------------------|--------------------|---------------------------------------|-----------|
| | Surveyed | Infested/Above Economic Treshold (ET) | Treated |
| Afghanistan | 80 000 | 60 531 | 60 531 |
| Armenia | - | 1 310 | 300 |
| Azerbaijan | 448 483 | 167 012 / 60 000 | 52 349 |
| Georgia | 105 000 | 86 500 / 33 200 | 31 850 |
| Kazakhstan | 17 412 000 | 1 283 900 / 567 600 | 567 600 |
| Kyrgyzstan | 156 421 | 121 700 / 114 476 | 114 476 |
| Russian Federation | 12 528 770 | 1 298 790 / 361 860 | 371 050 |
| Tajikistan | 410 418 | 103 017 | 114 232 |
| Turkmenistan | 359 038 | 84 066 | 84 066 |
| Uzbekistan | 719 000 | 513 000 | 503 400 |
| Total | 32 219 130 | 3 718 516 | 1 899 854 |

10. The Delegate from Afghanistan reported that, according to the forecast for 2019, 80 000 ha were planned for anti-locust treatments. Actually, 60 531 ha were treated against the Moroccan Locust (DMA) starting from 25 March in Balkh province. The largest areas were treated in Baghlan (12 704 ha), Balkh (10 500 ha) and Takhar (9 500 ha) provinces. A total of 71 permanent and 50 seasonal staff as well as 750 volunteers participated in the campaign. Pesticides were procured by the Government and included deltamethrin, diflubenzuron and lambda-cyhalothrin in Ultra-Low Volume (ULV) formulation as well as deltamethrin in Emulsifiable Concentrate (EC) formulation. The Delegate emphasized high efficacy of the Insect Growth Regulator (IGR) diflubenzuron, which produced 100 percent efficacy in high vegetation, which eliminated the need to use contact insecticides under such conditions. The Delegate recommended that joint surveys with adjacent countries (Tajikistan, Turkmenistan and Uzbekistan) be renewed in 2020. The forecasted area of anti-locust treatments in 2020 was 60 000 ha.
11. The Delegate from Armenia reported that, in 2019, a re-structuring of the Ministry of Agriculture occurred in the country; it does not exist anymore and its functions are assumed by the Ministry of Economics. It includes the Department of Food Security, which implements phytosanitary measures. In 2019, only 300 ha were treated with a pyrethroid in one region against the Italian Locust.

12. The Delegate from Azerbaijan reported that, in 2019, an Agency of Agricultural Services was created in the country. This Agency includes the Republican Center for Plant Protection. Locust infestations were recorded in 13 districts. DMA hatching started on 9 April in Imishli district at the border with Iran. In Djeyranchel steppe, the hatching started on 19 April. Temperature dropped in the end of April and heavy rains fell, which slowed down the locust development. In total, 53 349 ha were treated, including 47 021 ha against DMA and 5 328 ha against the Italian Locust (CIT). The treatments targeted second and third hopper instars and used mostly pyrethroids (cypermethrin and alpha-cypermethrin). About 40-45 percent of the treatments were done by ULV sprayers (nine Micron AU8115 and nine "Scout"). EC treatments were done by 44 tractor ventilator sprayers. In total, 32 tons of pesticides were used; management of empty 20-liter and 5-liter containers requires a lot of efforts and funds. The Human Health and Environmental Monitoring Team conducted four missions during the campaign.
13. The Delegate from Georgia reported that in 2019, locust infestations increased in the country: CIT infested 28 700 ha with densities above Economic Threshold (ET) and DMA infested 4 500 ha with densities above ET. Out of 33 200 infested area, 31 850 ha were treated with nine Micron AU8115 and four "Scout" sprayers using alpha-cypermethrin, chlorpyrifos, deltamethrin and diflubenzuron insecticides. Taking into account the high toxicity of chlorpyrifos, the Delegate inquired about potential substitute options for the ULV formulation of this insecticide.
14. The Delegate from Kazakhstan reported that 38.9 million ha were surveyed in 2019 by 1 113 permanent and 437 seasonal staff. The total treated area was 567 600 ha, which is quite low. As usual, most of the treatments were applied to CIT infestations. Certain areas with Asian Migratory Locust (LMI) egg-beds remained flooded through the season and the hatching did not occur. Regarding DMA, heavy rains in early spring resulted in high and dense vegetation cover; consequently, infested areas were much lower than forecasted. Kazakhstan conducted bilateral trans-border surveys (on its own funds) with Kyrgyzstan, Russian Federation and Uzbekistan. In terms of problems, the Delegate noted the lack of highly qualified personnel, the necessity to introduce ASDC and CCALM and the difficulties of treating densely vegetated areas.
15. The Delegate from Kyrgyzstan reported that the state budget for locust control in 2019 amounted to USD 445 500. In total, 114 476 ha were treated with pyrethroids (77 percent: alpha-cypermethrin, deltamethrin and lambda-cyhalothrin) and organophosphate (23 percent: chlorpyrifos) insecticides. All treatments were implemented using Micron AU8115 vehicle-mounted sprayers. In 2019, several new DMA breeding areas were recorded at very high altitudes of up to 2 500 m above sea level.
16. The Delegate from the Russian Federation reported that in 2019, roughly 12.5 million ha were surveyed and 1.3 million ha infested by locusts. The treated area was 361 860 ha, which is almost twice as low compared to 2018. Out of this, about 290 000 ha were treated against hoppers and about 80 000 ha against adults. Forty-seven aircraft and 592 ground sprayers were used in the treatments. Out of 38 pesticides registered for locust control, a neo-nicotinoid imidacloprid was most commonly used, alone or in combination with a pyrethroid alpha-cypermethrin. There is a 20-tons reserve of imidacloprid for 2020, which is sufficient for treating 260 000 ha. The Delegate said that one-day national training sessions were conducted by Master Trainers in three regions (Orenburg, Stavropol and Volgograd) allowing to train 47 staff. The Russian Federation and Kazakhstan conducted joint transborder survey on 218 000 ha; 238 personnel participated in this activity. According to the forecast for 2020, CIT and DMA infestations are expected to decrease while LMI infestations will increase.
17. The Delegate from Tajikistan reported that in 2019, areas infested by DMA decreased while those infested by CIT and grasshoppers increased compared to 2018. In total, 410 418 ha were infested and 114 232 ha were treated against locusts, which is higher than in 2018. Pyrethroids alpha-cypermethrin and lambda-cyhalothrin were most commonly used pesticides followed by a

chlorpyrifos/alpha-cypermethrin mixture. About 34 000 ha were treated using funds from local budget. In total, 857 seasonal workers participated in the campaign. In May, transborder surveys with Uzbekistan (on 30 000 ha) and Kyrgyzstan took place.

18. In Turkmenistan, the infested and treated areas in 2019 were significantly lower than in 2018. In total, 84 066 ha were treated, mostly with pyrethroids. A similar level of locust infestations is expected in 2020.
19. The Delegate from Uzbekistan reported that in 2019, over half a million ha were treated against locusts, which is higher than in 2018. About 77 percent of the area was treated with lambda-cyhalothrin, followed by imidacloprid and fipronil (11 percent each). Ground treatments were done with 32 vehicle-mounted ULV sprayers (244 000 ha) and 160 tractors (156.500 ha). Four ultra-light aircraft and one Antonov-2 aircraft participated in aerial treatments. In Karakalpakstan, late (second) hatching of LMI was recorded due to the fact that flood water receded late in the season. A saxaul grasshopper *Dericorys albidula* produced an outbreak and the areas treated against this species exceeded those treated against LMI for the first time in history. Uzbekistan continued to monitor locust situations near borders; transborder surveys with Kazakhstan and Tajikistan took place.
20. During the discussions, the Delegate from the Russian Federation highlighted that many positive results have been achieved in many countries after years of cooperation with FAO. He also wondered about the participation of Iran, which is a crucial actor, indicating that in the past, swarm flights including by Desert Locust occurred in the districts near the border. The FAO Agricultural Officer explained that the involvement of Iran is very important and that there are exchanges of swarms also with Turkmenistan. FAO contacted the relevant person in the Ministry of Agriculture, who showed interest but no concrete steps were undertaken so far and although this year Iran was heavily damaged by Desert Locust in the South of the country. In December 2019, there will be the meeting of the FAO Desert Locust Control Commission (DLCC), which will be attended by up to 60 countries. Iran will also attend and attempts will be made to discuss the issue with the country. He also reminded that China is also very relevant, in particular for Kazakhstan and that a professor from China participated in the 2018 Technical Workshop. However, afterwards, no further steps were taken in this regard.
21. The Delegate from Russia proposed to carry out cross-border surveys with Azerbaijan in the border areas in Dagestan region, where they have some locust issues. The Delegate from Azerbaijan informed that they do not have specific problem in that region but that this can be organized as preventive measure, as done in Georgia over the past years, with good results. Azerbaijan also informed that, according to their Department of International Relations, an Agreement with the Russian Federation including locust management was prepared and should be at the level of Intergovernmental Commissions. The Delegate from Georgia confirmed that their country received the Agreement from Azerbaijan including locusts.
22. The FAO Agricultural Officer asked Georgia to indicate the possible causes explaining the increase of infested area, which doubled compared to the previous year. The Delegate said that their organization is facing problems, i.e. shortage of resources. In fact, over the past years, the government provided the same budget for locust management, amounting to USD 250 000, which has decreased compared to past years. In addition, locust increase is also due to natural causes.
23. In conclusion, the FAO Agricultural Officer stated that the locust situation is generally calm in CCA and that treatment levels are lower than normal (twice as low as in 2018). When locust population decreases, countries may lose their focus and attention to the problem. He encouraged the countries to keep the attention high because problems start when monitoring activities decrease.
24. The countries provided locust forecast for 2020 in terms of the areas subject to treatment as follows (in ha):

Table 2. Forecasted treated areas for 2020 in CCA countries

| Country | Area (in ha) - subject to control operations |
|-------------------|--|
| Afghanistan | 60 000 |
| Armenia | - |
| Azerbaijan | 50 000 |
| Georgia | 35 000 |
| Kazakhstan | 553 951 |
| Kyrgyzstan | 120 000 |
| Russia Federation | 426 980 |
| Tajikistan | 102 668 |
| Turkmenistan | 85 000 |
| Uzbekistan | 640 400 |
| Total | 2 073 999 |

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

Overview on Programme implementation in 2019 and funding situation (Item 5)

25. The FAO International Consultant, Operations Expert, provided an overview of the implementation of the interregional and multi-funded “Programme to improve national and regional locust management in Caucasus and Central Asia (CCA)” during Year 8, from 1 October 2018 to 30 September 2019. The main achievements and activities for Year 8, under the different Programme results, were summarized as described below.

- Concerning regional cooperation, as done in 2017, the organization of the 2018 Technical Workshop in Bishkek was possible thanks to a joint funding of the Japan/JICA project, the FAO-Turkey Partnership Programme (FTPP) project as well as the FAO Regular Programme (RP), i.e. thanks to a synergy between the various contributions under the Programme’s umbrella to hold this key annual event. During such Technical Workshop, the process for the identification of a sustainable mechanism for long-term regional cooperation on locusts in CCA was launched, with a presentation, assessment and discussions on the different possible mechanisms – a FAO Commission under Article XIV of its Constitution appearing as the option offering the highest guarantee in terms of sustainability. Although the advocacy round-trip missions could not be carried out as planned in 2019, a long-term solution for regional cooperation started to be addressed at the occasions of the missions of the FAO Agricultural Officer/Locust management in Kazakhstan and Turkmenistan, in May and June 2019 respectively.
- In 2019, for the tenth consecutive year, national and regional monthly bulletins were prepared, respectively by countries and FAO. It was also the third consecutive year in which national bulletins were prepared by national staff in the framework of their usual duties (i.e. without external funding). Unfortunately, due to staff change in the Ministry of Agriculture,

Turkmenistan, no national bulletin was received from this country in 2019 (as well as in 2018). A visit of the FAO Locust Officer in Ashgabat, in June 2019, had for objective, amongst others, to facilitate liaison with new technical focal point(s) in the Plant Protection Service of the newly created Ministry of Agriculture and Environmental Protection (MAEP), and thus support bulletins preparation.

- A joint/cross-border survey was organized in Caucasus thanks to the Programme (USAID project); in Central Asia, several cross-joint surveys were also organized on countries' own budget – in the absence of Programme funds this year, showing how important is this activity for countries.
- Further efforts were made to improve national human capacities with 205 locust experts from six countries (Armenia, Azerbaijan, Georgia, Russian Federation, Turkmenistan, Uzbekistan) trained during 18 training sessions (three regional and 15 national ones) held between March and September 2019 on several topics related to locust management (thanks to the USAID funded project). In this respect, the Training-of-Trainers (ToT) on locust management allowed more specifically to train 167 experts from four countries, Armenia, Azerbaijan, Georgia and Russian Federation. This includes a total of 18 Master Trainers trained during the two regional sessions and additional 149 plant protection/locust experts trained, by the Master Trainers, fourteen national ones (including three national session organized by the Russian Federation to the benefit of 51 experts and one by Armenia for 12 experts on their own funds). The ToT had been organized for the first time in Afghanistan, Kyrgyzstan and Tajikistan in 2016-2018 (thanks to the project funded by Japan/JICA) and could therefore be expanded to Caucasus in 2019 (thanks to the USAID project); it plays a key role in training Master-Trainers, reaching a large number of beneficiaries and harmonizing and strengthening capacities on locust management in the whole region.
- Support for ASDC and CCALM use continued during the ToT organized in Caucasus to the benefit of Master Trainers from Azerbaijan, Armenia, Georgia and Russian Federation as well as during the regional training on locust monitoring and information management organized in Uzbekistan in September 2019. An important achievement was the participation of four Turkmen experts, being the first time that experts of this country are trained on ASDC and CCALM use.
- Regarding the strengthening of the operational capacities, it was possible to procure additional equipment for Afghanistan, Kyrgyzstan and Tajikistan with respect to the one initially envisaged in the Japan/JICA project document, thanks to some remaining funds (after completion of all planned activities) and as discussed with countries during the Technical Workshop and Project Steering Committee held in November 2018 in Kyrgyzstan; as per countries' requests, such equipment included IT equipment (Tajikistan and Afghanistan), office furniture, camping beds (to be delivered), binocular and solar panels (Tajikistan) as well as tablets (Afghanistan, Kyrgyzstan, Tajikistan).
- There were important achievements related to risk reduction of control operations on human health and the environment in 2019: the work of the Tajik Human Health and Environmental Monitoring Teams continued for the fifth consecutive year, but on country's own funds (i.e. with no external funding) this year. In addition, Teams were set up for the first time in Azerbaijan and in Georgia in 2019; they carried out monitoring activities from May to September. The Practical Guidelines on pesticide risk reduction for locust control in CCA were finalized in Dari, Kyrgyz and Tajik and distributed to the national services in charge of locust management in Afghanistan, Kyrgyzstan and Tajikistan, in addition of being available in five

languages on the FAO Locust Watch website. This was possible thanks to the Japan/JICA project extension from December to June 2019.

- During Year 8 of the Programme, the contribution of the FAO Regular Programme (RP) continued to act in synergy with the ongoing projects, including as a buffer to manage funding gaps. Besides a discrete contribution to the 2018 Technical Workshop (TW), it allowed the visit of the FAO Agricultural Officer/Locust Management, in Ashgabat, Turkmenistan in June 2019, to facilitate working contacts with the newly created MAEP and discuss the envisaged locust project funded by Japan/JICA, as part of the whole Programme; as a result, Turkmenistan sent an official letter to FAO, in July 2019, expressing its agreement with the project (as the five other concerned countries had already done in 2018). The RP also contributed to the organization of a press-tour in Kyrgyzstan on 25 June 2019, in Chuy region, with representatives of JICA, FAO and the Department of Chemicalization and Plant Protection (DCPP), Kyrgyzstan, and several journalists, to show the work carried out by DCPP after the delivery of the equipment supplied by the Japan/JICA funded project.
- In addition to the achievements already presented at the 2018 TW and prior to its completion in February 2019, the FTTP project (GCP/SEC/004/TUR) contributed to the advocacy mission of the FAO Agricultural Office/Locust Management in Turkmenistan in October 2018, to the provision of equipment to the Human Health and Environmental Monitoring Team set up in Azerbaijan and to overall Programme coordination. Project final report was prepared and dispatched to beneficiary countries and donor.
- With Japan/JICA project (GCP/INT/238/JPN) end in June 2019, the evaluation of the project was completed: initially launched in July 2018, its preliminary results were presented (via Skype) by the evaluators to all CCA countries during the 2018 TW and further discussed with the three beneficiary countries and the donor during the PSC held the same week. The draft report was then shared with all stakeholders, reviewed based on comments received and eventually finalized and sent to all stakeholders in August 2019. The project was considered as successful by the evaluation and a number of recommendations were formulated, including for a second phase benefitting to additional Central Asian countries. Project final report was also prepared by FAO and dispatched to beneficiary countries and donor.
- Following discussions with the Kazakh Delegates during the 2018 TW, the Technical Cooperation Programme Facility (TCPf) project (TCP/KAZ/3701/C1) to the benefit of Kazakhstan was extended, eventually up to 31 December 2019. This allowed the FAO Agricultural Officer, Locust management, to undertake a mission to Kazakhstan in May 2019 to review and assess the methodology for survey and control activities against the Moroccan Locust. The recommendations formulated to the MoA at this occasion stressed the need to improve the current system of Moroccan Locust management in Kazakhstan, in particular on locust monitoring, which is the cornerstone for efficient locust management, and thus allowing to carry out well-targeted control operations. A training on locust bio-ecology, monitoring and information management, including the introduction of ASDC and CCALM, is therefore planned in late November 2019 in Nur-Sultan, to the benefit of 20 specialists, thanks to the TCPf. Tablets (20 units) will be made available for the training, thanks to the USAID project.
- The new USAID project (GCP/GLO/963/USA) -approved in September 2018 for a duration of one year and with a budget of USD 480 000 to the benefit of all ten CCA countries- operationally started in February 2019, after its signature by at least three countries. As of November 2019, Armenia, Georgia, Kyrgyzstan, Uzbekistan have signed the project while the process is ongoing in Azerbaijan; based on the in-principle agreement with the project and existing host country agreement, activities could nevertheless be implemented in this later country based on an FAO

internal waiver. The Russian Federation indicated that it would not sign the project however that it wishes to continue to be part of the overall Programme activities (on this basis, it participated in a number of regional activities with activity organized on its own funds at the national level). Considering the project late operational start, a no-cost extension of one-year, up to 30 September 2020, was requested and approved by USAID to undertake a number of activities in late 2019 and 2020, in compliance with project agreement and mainly to the benefit of Caucasian countries.

- Last, regarding resource mobilization, the project document of the new envisaged “Project for improving locust management (Phase II)” funded by Japan/JICA to the benefit of the six Central Asian countries, Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan- was prepared by FAO. To that end, while project activities had already been agreed upon by all countries (TW 2017), FAO liaised with countries to update the list of equipment to be provided. The project document was shared and discussed with the JICA Office in Tajikistan and then further completed by FAO in view of its further review and approval at Japan/JICA central level. All six countries had confirmed their interest through official letters sent to FAO in 2018/19.
26. The FAO Operations Expert indicated that three activities had to be postponed with respect to the Workplan for Year 8. The Round-trip visits for the identification of the best long-term solution for sustainable regional cooperation (USAID project) were postponed to 2020, due to staff availability this year. The Practical Guidelines on the three locust pests present in CCA (FAO RP), in English and in Russian, could not be finalized in 2019, also due to experts’ limited availability - very few steps remain to have the process completed. Completion of one of the two fellowships awarded in the context of the FTTP project, the three-year PhD on remote sensing and GIS, was expected to be finalized in 2019 but it is not the case yet.
27. Some constraints were also met, in particular, regarding: i) the signature of the USAID project (GCP/GLO/963/USA), still pending for some countries - as per FAO rules and procedures, activities can be implemented only in countries that have signed the project; ii) the delivery of camping beds to Tajikistan on the Japan/JICA project. According to the purchase order issued prior to project completion, a total of 125 units had to be delivered in July/August 2019. Delays were encountered as the beneficiary did not accept the goods initially (considered as too expensive compared to the local market) to eventually confirm its acceptance. With FAO and donor’s agreement (as delivery is well beyond the project end in June 2019), the camping beds should be supplied in December 2019.
28. A number of recommendations were made by FAO. At a technical level, all stakeholders should make every effort to concur to the three main directions/priorities agreed upon during the 2016 TW. In particular, efforts should continue regarding the preparation of the national monthly bulletins, with a high attention paid to the comprehensiveness and accuracy of their contents in the agreed template as well as to their timely transmission to FAO. Cross-border or joint surveys should be organized as far as possible in 2020, including in absence of external funding or pending new projects’ approval. All efforts should also be made by countries to use ASDC on tablets/mobile phones (or on paper forms with data then entered in computers/laptops in the office). For countries where CCALM was introduced, the national monthly bulletins (as well as any other relevant internal document) should also start to include the Geographic Information System (GIS) products at the national level; FAO technical support will continue to be provided to that end in 2020. The successful creation of Human Health and Environmental Monitoring Teams in Kyrgyzstan and Tajikistan and more recently in Azerbaijan and Georgia should be replicated in other countries. Countries not receiving financial assistance for the monitoring missions should put all efforts to continue the work also next year. At Programme level, the following recommendations were formulated: that countries sign as soon as possible the USAID funded project, especially Azerbaijan and Kazakhstan; that all efforts be made to finalize, in a reduced

timeframe, the new envisaged Japan/JICA project to the benefit of six Central Asian countries; and to identify one additional funding partner, for Caucasian countries.

29. Afterwards, the FAO Operations Expert briefly presented the funding situation of the Programme. Since its start, a total of USD 8.7 million had been gathered. During Year 8, she indicated that three projects were operationally active, the FPHP, Japan/JICA and USAID projects, with the FPHP ending in February 2019 and the Japan/JICA one in June 2019. The FAO Regular Programme had also provided a substantial contribution. Overall, the tentative annual expenditures, from 1 October 2018 to 30 September 2019, amounted to about USD 354 000 (see table in Annex IV) - excluding the Japan/JICA project. She indicated that more information could be retrieved from the Working Paper while detailed expenditures regarding the Japan/JICA project would be provided in December 2019.

Regional cooperation in 2019 (Item 6)

Joint survey: Armenia, Azerbaijan, Georgia, Russian Federation, May 2019 (Item 6 a)

30. The Delegate from Georgia presented the joint survey between Armenia, Azerbaijan, Georgia and the Russian Federation, which was held on 7-10 May 2019 in Kakheti region, Georgia on USAID funding. A total of 12 participants (three from Armenia, two from Azerbaijan, four from Georgia and three from Russia) participated in the survey. The Delegate from Georgia informed that cross-border migrations have decreased recently while in the past there have been often migrations of swarms, especially from the Georgian/Azeri border. He strongly stressed the importance of cooperation with this country on joint locust surveys. The Delegated from Georgia reported that a total of 850 ha were surveyed in Kakheti region, mainly pastures, at the border with Azerbaijan where experts observed Moroccan Locust hatching and hopper bands; survey forms were filled. The second survey area was at the border with the Russian Federation, (430 ha surveyed in Akhmeti) where locusts are generally rare and the situation is usually calm. The Delegate stressed that the aim of this activity is not only to conduct surveys but mainly to exchange information among countries and take necessary action. He wished to continue this activity in the future.
31. The Delegate from Azerbaijan indicated that joint surveys are very interesting, especially in the area bordering with neighbouring country, in Alazan valley, where there are big swarms of Italian locusts on the Georgian territory and of Moroccan Locusts on the other side. He explained that surveys were conducted before hatching and during, at spring, and that one of the main objectives was to understand how to dig egg-pods; in addition, Global Positioning System (GPS) and FAO standard forms were used. He wished to organize other similar surveys, also at the border with Russia, as proposed earlier also by the latter, which would be beneficial for all countries.
32. The Delegate from the Russian Federation thanked Georgia for the organization and reminded that although the situation at the border was calm, it is necessary to always be prepared; in this prospective, the joint survey was very useful. The main goal was to identify the infested areas and locust control methods. The use of tablets was shown, helping to exchange information. Specialists from different Russian regions which are close to the territory of Azerbaijan participated in the survey.

National capacities' development in 2019 (Item 7)

Training-of-Trainers on locust management (ToT) - Regional sessions (Item 7 a)

33. A Training-of-Trainers on locust management was organized in the framework of the USAID project (GCP/GLO/963/USA) with the participation of experts from Azerbaijan, Armenia, Georgia and

Russian Federation. The Delegate from Georgia, which hosted the two regional sessions, reported on their organization, as follows:

- A Regional session on locust monitoring and information management, including ASDC and CCALM, was delivered to the benefit of nine Master-Trainers from Azerbaijan (two), Armenia (two), Georgia (three) and the Russian Federation (two), by Mr A. Latchininsky, FAO Agricultural Officer/Locust Management and Ms N. Muratova, FAO International Consultant, GIS Expert, on 26 February - 2 March 2019 in Tbilisi.
- A Regional session on locust spraying and pesticide risk reduction, including ASDC, was delivered to the benefit of nine Master-Trainers from Azerbaijan (two), Armenia (two), Georgia (three) and the Russian Federation (two), by Mr S. Lagnaoui, Spraying Expert, Mr S.A. Mahmoud, Environmental Expert, and Ms N. Muratova, GIS Expert (all FAO International Consultants), with the partial participation of Mr Latchininsky, on 4-9 March 2019 in Tbilisi.

34. The Delegate from Georgia highlighted the usefulness and importance of this ToT and thanked FAO for this opportunity as well as the participating countries for attending. He stressed that the training allowed, in particular, exchanging opinions among experts and carrying out field exercises. He also stressed that it was especially useful for Georgia, which is experiencing in this moment a shortfall in resources and personnel, also in terms of knowledge. During the discussion, the Delegate from Azerbaijan suggested to continue it in the future and proposed to add two days to the training as it was very interesting and intense.

35. The Russian Delegate highlighted the importance of international experience exchange among experts as well as the high level of expertise and material provided by FAO. In terms of recommendations, he suggested, as far as the first session is concerned, to pay more attention to practical exercises, allocate more time for discussions and he also noted that some experts did not have basic computer skills. Regarding the second session, which was held in English and French, with translation into Russian, he recommended improving the quality of interpretation, in order for interpreters to be more familiar with phytosanitary terminology. This is fundamental for the learning process, considering that the Russian Master-Trainers trained other 47 experts in turn.

36. The FAO Agricultural officer/Locust Management explained that the Training-of-Trainers formula started only a few years ago in the region and that material has been developed for the Master-Trainers for further dissemination. Therefore, Master Trainers should be scrupulously selected to have computer skills and understanding of Russian. As to the interpretation, he reminded that usually the explanations to Master-Trainers are provided twice, both in Russian and in national language. In the case of regional sessions, translation into four national languages is not possible while he confirmed that more attention will be given to translation in this very technical field.

Training-of-Trainers on locust management (ToT) - National sessions (Item 7 b)

37. A total of 14 Training-of-Trainers National sessions were organized in Armenia, Azerbaijan, Georgia and the Russian Federation from April to June 2019. The sessions organized by Armenia and the Russian Federation were funded by countries' own resources.

- In Azerbaijan, eight national sessions of one-day each were delivered by the Master-Trainers, including four on locust monitoring and information management and four on locust spraying and pesticide risk reduction, to a total of 60 locust experts in May and June 2019¹.
 - In Georgia, two national sessions were delivered, i.e. one on locust monitoring and information management to the benefit of 10 experts on 17-19 April 2019 and one on locust spraying and pesticide risk reduction to a total of 16 experts on 15-18 May 2019, both in Kakheti.
 - In Armenia, one national session on locust monitoring and information management was organized to the benefit of 12 experts on 6 June 2019 in Yerevan.
 - In the Russian Federation, three national session on locust monitoring and information management, spraying and risk reduction, of one day each, were delivered to a total of 51 experts, on 13 June in Stavropol Territory, on 20 June in Orenburg Region, on 28 June in Volgograd Region
38. The Delegate from Azerbaijan informed that all materials provided by FAO were translated into Azeri and presentations were prepared accordingly. The sessions were organized in the regions where locusts were present. They were conducted at district level so that people at local level could participate, including farmers. The Delegate requested the possibility to organize longer trainings in the future (as initially envisaged for such national sessions) and not one-day national sessions. In 2020, the Delegate informed that they plan to organize similar trainings.
39. The Delegate from Russia informed that a test was conducted to check experts' knowledge and that the results were positive, indicating that the sessions had been very useful.
40. The GIS Expert congratulated all countries for the organization of national sessions allowing transfer of knowledge, including Armenia and the Russian Federation on their own funds. As to Azerbaijan, she recommended to pay special attention to the selection of the Master-Trainers, as some of them had very basic knowledge of computers and tablets. Last, she reminded the assistance that specialists could remain in contact with FAO in case of any issue.

Training sessions (Item 7 c)

- Regional Training on locust monitoring and information management, including ASDC and CCALM, Uzbekistan and Turkmenistan, September 2019
41. The Delegate from Uzbekistan reported about the regional Training on locust monitoring and information management, including ASDC and CCALM, which took place on 16-20 September 2019 in Bostanlik district of Tashkent region. The training was delivered by the FAO Agricultural Officer/Locust Management and the GIS Expert to a total number of 16 experts, out of which 12 from Uzbekistan and four from Turkmenistan. The Delegate informed that Uzbek experts had high education and ranged from 35 to 47 years old, including head of departments and chief agronomists. The specialists from Turkmenistan came from different regions (Akhal, Balkan, Dashoguz and Lebap). The training focused on locust data collection, field survey, and practical

¹ In Azerbaijan, the four national sessions on locust monitoring and information management were delivered to a total of 40 experts, on 30 May in Saatli, on 11 June in Tovuz, on 18 June in Shaki and on 24 June in Shemakhi; the four national sessions on locust spraying and pesticide risk reduction were delivered to a total of 20 experts, on 31 May in Saatli, on 12 June in Tovuz, on 19 June in Shaki and on 25 June in Shemakhi.

exercise with tablets, ASDC and how to obtain data using CCALM. He thanked FAO for this opportunity and confirmed the use of GIS in the future.

42. The GIS Expert highlighted that the selected staff learned very quickly and although locusts were not present in September, the work was carried out efficiently. Taking advantage of the presence of Turkmen experts, she informed that a number of issues were discussed with them on locust issues, including the introduction of new technologies.
43. The FAO Agricultural Officer/Locust management stressed that Turkmenistan appointed four young experts for the training, who have been able to acquire most of the topics although they had translation into Uzbek and Russian, and not into Turkmen. Locust data (egg-pod infestations) on three regions of Turkmenistan, collected with ASDC, were available after the Training of September 2019.

Equipment to strengthen operational capacities: update on delivery to CCA countries (Item 7 d)

44. The FAO International Consultant, Operations Expert, presented an overview on the equipment delivered during Programme Year 8, up to October 2019, to strengthen the operational capacities of CCA countries. Three projects contributed to procurement during this period: the Japan/JICA project, the FTTP project and the USAID project. Regarding the Japan/JICA project, the Operations Expert reminded that it was possible to procure additional equipment in 2019 (as compared to the list included in the original project document) thanks to project extension from December 2018 to June 2019 and to project savings; the additional procurement had been agreed upon with the countries during the fourth Project Steering Committee (PSC), held on of 22 November 2018 in Bishkek, Kyrgyzstan.
45. Under Programme Result 3, "Locust monitoring improved", Activity 3.1. "Strengthen operational capacities for locust field survey", the following equipment was provided:
 - Japan/JICA project: ten survey kits and two control kits to Tajikistan and Kyrgyzstan, respectively in December 2018 and January 2019; Laboratory equipment for insect identification and conservation to Kyrgyzstan in January 2019 (including eight microscopes, binoculars, entomological boxes, entomological dissecting items, etc.); Additional laboratory equipment for Kyrgyzstan (including 24 microscopes, one laboratory analytical balance, one incubator) between February and May 2019; Office equipment (to Afghanistan in May (two laptops) and to Tajikistan in June (nine desktop computers, two laptops and eight printer); Audio-visual equipment to Tajikistan in June (including four video-camera, four televisions, four cameras, one projector and external hard drives and flesh drives); and other equipment including office furniture, 37 solar panels, one binocular to Tajikistan in July 2019.
 - USAID project: Entomological kits (for training purpose) to Uzbekistan in September 2019 (12 units) and to Turkmenistan (four units- shipment planned in December 2019);
 - FTTP project: six digital photo-cameras to Azerbaijan in December 2018.
46. Under the same programme result, Activity 3.2. "Develop monitoring and analysing systems", tablets for ASDC use were delivered to several countries:
 - Japan/JICA project: three tablets to Afghanistan in July, seven to Kyrgyzstan in August and five to Tajikistan in June 2019
 - USAID project: four tablets to Armenia in July, ten to Azerbaijan in September, 12 units to Uzbekistan in July and 5 units to Turkmenistan (still to be shipped for the latter country with the assistance of UNDP – procured for the Turkmen Experts at the occasion of the

Training on locust monitoring and information management, including ASDC and CCALM, organized in Uzbekistan in September 2019). In addition, 20 tablets will be delivered to Kazakhstan in November 2019 to be used during the national Training on locust monitoring and information management, including ASDC and CCALM, planned on 18-22 November in Nur-Sultan. To be noted that the procurement of four tablets for the Russian Federation (included in the workplan for 2019) was cancelled as the country informed that it would not sign the USAID Project Document although it remained in any case part of the FAO Programme.

47. Under Programme Result 4, "Locust control operations supported", 125 camping beds will be delivered to Tajikistan in December 2019, thanks to the Japan/JICA project, with FAO and donor's agreements as shipment is well beyond project completion (the delivery was delayed because the counterpart was initially unwilling to accept the goods).
48. Under Programme Result 5 "Impact on human health and the environment mitigated and monitored", the FTTP project allowed procuring additional Human Health and environmental monitoring equipment for Azerbaijan in April 2019, to be used by the Human Health and Environmental Monitoring Team during the 2019 control campaign (partial equipment had been provided by FAO in 2017 for the activity "Development of an integral system for health and environmental monitoring of locust control operations" and additional equipment was procured following the confirmation that the Team would be set up in 2019). Human Health and environmental monitoring equipment (one digital camera and three AChe assay kits) was also provided to Georgia in May 2019 for the newly created Team.
49. The Delegate from JICA requested the total number of tablets delivered to the countries in the context of the FAO Programme as well as the quantity by country. The Operations Expert replied that the total number of tablets delivered was 211 and that a detailed list could be provided. The Delegate from Kyrgyzstan thanked FAO for efforts as procurement is so complicated and indicated that all items received were in compliance with their expectations.

Programme of work during 2020 (Item 8)

50. The FAO International Consultant, Operations Expert presented the annual Workplan for Year 9, going from 1 October 2019 to 30 September 2020 against the different available funding sources. Currently confirmed ones for Year 9 are:
 - USAID Project (GCP/GLO/963/USA) to the benefit of all CCA countries - completion date on 30 September 2020: available funds amount to USD 235 000. The project concentrates mainly on Caucasus, considering that the new envisaged JICA project should cover Central Asian countries. It was reminded that project signature by countries is fundamental for the implementation of the planned activities.
 - TCPf Project (TCP/KAZ/3701) to the benefit of Kazakhstan - completion date on 31 December 2019 (remaining funds will be used to organize the Training on locust monitoring and information management on 18-22 November 2019 in Nur-Sultan).
 - Contribution from the FAO Regular Programme (precise amount still to be determined).

51. The following Workplan for year 9 was presented during the Workshop and approved by the participating countries. Tentative dates and funding projects are indicated in brackets:

- **Under Result 1**
 - Activity 1.1.2. Contribution to the Technical Workshop held on 13-15 November 2019 in Tashkent, Uzbekistan [*FAO Regular Programme*].
 - Activity 1.3. Identify the best long-term solution for sustainable regional cooperation through missions carried out by FAO officers in the countries for advocacy purpose [*USAID*]
- **Under Result 3**
 - Activity 3.1.1. Trainings on locust monitoring and information management, including ASDC and CCALM, delivered by FAO Experts in:
 - Kazakhstan, Nur-Sultan, on 18-22 November 2019 [*TCP/KAZ/3701*]
 - Azerbaijan, Baku or Ganja, on 30 March – 3 April 2020 [*USAID*]
 - Russian Federation, Orenburg, April 2020 [*FAO Regular Programme subject to confirmation of available funding*]
 - Activity 3.2. Organize a joint survey with experts from Armenia, Azerbaijan, Georgia and the Russian Federation (dates to be determined) [*USAID*]
 - Activity 3.3.1. Hosting, maintenance and improvements of ASDC and CCALM to the benefit of all countries [*USAID*];
 - Activity 3.3.2. Contribution to the Regional Workshop on Locust Data Analysis, Forecast and Reporting, held on 11-12 November 2019 in Tashkent, Uzbekistan [*USAID*]
- **Under Result 5**
 - Activity 5.2.3. Technical and operational support to the Human Health and Environmental Monitoring Teams in Azerbaijan and Georgia (throughout the campaigns) [*USAID*]
- **Other:**
 - Technical Support Services and standard reporting and evaluation costs [*USAID*].

Table 3. Workplan for Year 9 of Programme implementation (2020) and related budget

| Res. & Act. | Description - Activities envisaged for Year 9 (1 Oct. 2019 - 30 Sept. 2020) | TOTAL BUDGET FOR YEAR 9 (USD) | AVAILABLE FUNDS FOR YEAR 9 (USD) | | |
|-------------|--|-------------------------------------|----------------------------------|------------------------------|----------------------------------|
| | | | GCP/GLO/963/USA USAID project | TCP/KAZ/3701 TCPf project | FAO Regular Programme (RP) |
| | R1 - Regional cooperation | 71,000 | 36,000 | | 35,000 |
| | 1.1. Facilitate regional exchanges to manage locust situations | 35,000 | | | 35,000 |
| | 1.1.1. Create/maintain regular regional information sharing of standardized data (Nat. | | | | |
| | 1.1.2. Allow direct experience exchange (technical workshop) | 35,000 | | | 35,000 |
| | 1.2. Develop coordination, including through transboundary policy | | | | |
| | 1.3. Identify the best long-term solution for sustainable regional cooperation | 36,000 | 36,000 | | |
| | R2 - National capacities | | | | |
| | 2.1. Training-of-Trainers (ToT) programme - locust management | | | | |
| | 2.2. Make available/accessible background documentation on locust pests | | | | |
| | a Biblio & Material to be made available (e-committee) | | | | |
| | b Monographies | | | | |
| | c Guidelines | | | | |
| | 2.3. Allow internships and post-graduate formation | | | | |
| | a One-month internship | | | | |
| | b Fellowship: 2 or 3-year diploma for 3 students & E-committee | | | | |
| | 2.4. Promote and support applied research | | | | |
| | a Two grants for applied research | | | | |
| | b Entomological and chemical equipment for 6 laboratories | | | | |
| | R3 - Locust issues and disasters better anticipated and mitigated | 126,580 | 117,000 | 5,580 | 4,000 |
| | 3.1. Improve survey operations for better field locust monitoring | 26,790 | 22,000 | 2,790 | 2,000 |
| | 3.1.1. Strengthen human capacities (techn. consultations on survey) | 26,790 | 22,000 | 2,790 | 2,000 |
| | 3.1.2. Strengthen operational capacities (survey equipment) | | | | |
| | 3.2. Organize regular cross-border surveys | 12,000 | 12,000 | | |
| | 3.3. Develop monitoring and analyzing systems | 87,790 | 83,000 | 2,790 | 2,000 |
| | 3.3.1. Extend use of Geographical Information System and remote sensing | 47,000 | 45,000 | | 2,000 |
| | 3.3.2. Improve forecasting | 40,790 | 38,000 | 2,790 | |
| | 3.4. Enhance preparedness for risk reduction - contingency plans | | | | |
| | R4 - Improved response mechanisms to locust outbreaks | | | | |
| | 4.1. Allow early reaction and appropriate control operations | | | | |
| | 4.1.1. Strengthen human capacities (techn. consultations on control) | | | | |
| | 4.1.2. Strengthen operational capacities (control equipment) | | | | |
| | 4.1.3. Enhance public-private partnership | | | | |
| | 4.2. Promote less harmful pesticides and alternatives to conventional pesticides | | | | |
| | 4.2.1. Develop ULV formulations and related techniques | | | | |
| | 4.2.2. Propose alternatives to conventional pesticides (demonstration) | | | | |
| | 4.2.3. Encourage registration of more pesticides | | | | |
| | R5 - Impact on human health and the environment mitigated and monitored | 18,713 | 18,713 | | |
| | 5.1. Mitigate impact of locust control operations on human health and the environment | | | | |
| | 5.1.1. Strengthen human capacities (techn. assistance) | | | | |
| | 5.1.2. Strengthen operational capacities (PPE) | | | | |
| | 5.1.3. Pesticides and empty containers management | | | | |
| | 5.1.4. Produce extension material for mitigating impact of locust treatments | | | | |
| | 5.2. Monitor impact of locust control operations on human health and the environment | 18,713 | 18,713 | | |
| | 5.2.1. Strengthen human capacities (techn. assistance) | | | | |
| | 5.2.2. Strengthen operational capacities (Testmate, environmental material, etc.) | | | | |
| | 5.2.3. Develop integral system for environmental and health monitoring | 18,713 | 18,713 | | |
| | 5.2.4. Facilitate impact assessment & analysis of material (residue analysis) | | | | |
| | R6 - Public information and awareness increased | | | | |
| | 6.1. Develop awareness and education among local populations | | | | |
| | 6.2. Enhance visibility of locust issues and management and of related donor support | | | | |
| | 6.2.1. Prepare and implement a communication plan | | | | |
| | 6.2.2. Create and update a website on locusts in Caucasus and Central Asia | | | | |
| | Other | 63,049 | 63,049 | 0 | |
| | Supervision, coordination, management of the Programme | | | | |
| | Reporting and Evaluation | 19,700 | 19,700 | | |
| | TSS | 43,349 | 43,349 | | |
| | Sub-total | 279,342 | 234,762 | 5,580 | 39,000 |
| | Support cost | 19,320 | 18,900 | 420 | 0 |
| | Total | 298,662 | 253,662 | 6,000 | 39,000 |

SESSION 3: DEVELOPING MONITORING AND ANALYSING SYSTEMS

Developments of ASDC and CCALM in 2019 (situation update, issues encountered, lessons learnt and recommendations) and next steps for 2020 (Item 9)

52. The FAO International Consultant, GIS Expert, informed on the developments of ASDC and CCALM in 2019. She said that a total of 66 tablets (with a 10" screen) were purchased by FAO for ASDC use this year (see above paragraph 46). Thus, the total amount of tablets which were purchased from 2014 to 2019 was of 191, for the following countries: 43 tablets for Afghanistan, 7 for Armenia, 31 for Azerbaijan, 18 for Georgia, 20 for Kazakhstan (still to be transferred), 27 for Kyrgyzstan, 1 for Russian Federation, 45 for Tajikistan, 5 for Turkmenistan and 14 for Uzbekistan. As far as training is concerned, during 2019, 205 locust specialists from six countries, i.e. Armenia, Azerbaijan, Georgia, Russian Federation, Turkmenistan and Uzbekistan, benefitted from a total of 18 regional and/or national sessions (see paragraphs 33 to 43 on trainings), thanks to the USAID project, the FAO Regular Programme or on countries' own funds. In Kazakhstan, it is planned to introduce ASDC and CCALM to the benefit of 20 local specialists during the training scheduled in November 2019.
53. It was indicated that during the 2019 locust campaign, the seven countries which has been using ASDC previously continued to do so, as follows: Georgia and Russian Federation (initially pilot country for ASDC testing) and Afghanistan, Armenia, Azerbaijan, Kyrgyzstan and Tajikistan (since 2017). In total, 1 368 entries were received from 89 ASDC users from these seven countries (compared with 911 entries from 68 users in 2018). In addition to the above, 132 test entries from Uzbekistan and 42 test entries from Turkmenistan were received during the training on ASDC use. During this training, modifications were identified in the Uzbek and Turkmen translation of the FAO Locust Survey and Spray Monitoring Forms, with the corrected online version of ASDC now available. There were no entries from Kazakhstan in 2019 since ASDC has not been introduced in that country yet.
54. The GIS Expert indicated that the overall goal was to ensure that in the coming years, all or most of the CCA countries will use ASDC, together with CCALM. She explained what kind of trainings and other activities would be needed to reach this ambitious goal. Participants then discussed and agreed upon on the following recommendations for 2020 national locust campaigns: (a) to countries: continue to use the ASDC as much as possible during locust surveys (and send information even in the absence of locusts) and control; conduct CCALM testing and release (even in the absence of specific sources of external financing); (b) filling out the survey and locust control forms should be an integral part of the responsibilities of locust experts, and in this regard, Master-Trainers need to be educated during continuing education courses on national and/or other budget; (c) to FAO: organize a Training-of-Trainers on locust management, including ASDC use, primarily for countries not yet covered; and continue to provide remote technical assistance to countries to resolve any difficulties or problems; (d) to FAO and countries: to the extent possible, contribute to ensure that the required number of tablets is available. To Kazakhstan specifically, it was recommended that national experts use FAO standard survey and spray monitoring forms in ASDC in the bordering areas with the Russian Federation and Uzbekistan and test the system for entering data from tablets, mobile phones or computers in Kazakh language.
55. During the discussions, the Delegate from the Russian Federation reiterated, as in the previous years, interest in using ASDC and noted that the Master-Trainers who had participated in the ToT regional sessions in 2019 were in turn able to train 47 local specialists in the Orenburg, Stavropol and Volgograd Regions. He added that the Russian Agricultural Center wished to organize in 2020 a regional seminar on locust monitoring and information management, including ASDC and CCALM, in its branch of the Orenburg region with participation of experts from neighboring countries. The Delegate from Azerbaijan also stressed his country's interest in using the GIS and

requested that additional Master Trainers be trained so that ASDC be used over the whole national territory.

56. A few constraints in using ASDC were mentioned. The Delegates from Afghanistan, Georgia and Tajikistan referred to staff turn-over (trained personnel leaving) and the related need to ensure training of the new young inexperienced people. The Delegates from Kyrgyzstan and Tajikistan also mentioned financial issues, respectively for organizing training sessions (to be delivered by Master-Trainers at national level) and for covering Internet costs for ASDC use. In addition, the Delegate from Kyrgyzstan noted that in 2019, due to a malfunction of some tablets, field information had to be recorded in paper format mainly; he added that these data would be entered into CCALM before the end of the year.
57. The Delegate from Kazakhstan expressed concern regarding the introduction of ASDC and CCALM in parallel to the country's own newly developed electronic system in plant protection services; he suggested that a module be created for transferring some of the locust data to the CCALM database.
58. The Delegate from the Russian Federation asked if ASDC would include information on the management and disposal of empty pesticide containers. The GIS Expert clarified that, during treatments, operators could insert this information directly in the system, as they can select (from a list) the actions taken for empty containers. She also proposed to insert further information such as the number of disposed drums, which is indeed the main missing information according to the Russian Federation.
59. Regarding CCALM, the GIS Expert reported that in 2019, training on system use was provided during the ToT organized in Georgia to the benefit of nine participants from Armenia, Azerbaijan, Georgia and Russia. CCALM (basic and advanced functions) was also introduced to a total of 16 participants from Uzbekistan and Turkmenistan. Further, the GIS Expert informed about the functionalities of CCALM, including the creation of various products using ASDC data collected by CCA countries, and drew attention to all changes made in 2019. She emphasized that the effective functioning of CCALM depends on the widespread use of ASDC by all CCA countries. She also demonstrated to Delegates a new CCALM interface for displaying Normalized Difference Vegetation Index (NDVI) derived from MODIS satellite data updated every 16 days on ladsweb.modaps.eosdis.nasa.gov. Last, the GIS Expert addressed the future developments of CCALM in 2020 and shared with the participants the recommendations made regarding the development of this tool. The details can be found in the corresponding Working Paper.

Results of the Workshop on Locust Data Analysis, Forecast and Reporting in CCA and steps forward (Item 10)

60. The workshop on locust information analysis, forecasting and reporting in the Caucasus and Central Asia was held in Tashkent, Uzbekistan, on 11-12 November 2019, with participation of the ten countries involved in the Programme. The following officers were elected as Officers of the Workshop: Chairman - Mr Utkir Mirzoev (Uzbekistan), Deputy Chairman - Mr Alexander Malko (Russian Federation); Drafting Commission - Mr Tural Javadzade (Azerbaijan), Mr Andrey Zhiviykh (Russian Federation), Mr Alexandre Lachininsky (FAO) and Ms Nadiya Muratova (FAO). Three sessions were held on the following issues: Development of monitoring systems and analysis of locust situations in 2019 and recommendations for 2020; Locust forecast using CCALM; Locust reporting: how to make it standardized and informative?

61. As a result of the discussions, the following suggestions and recommendations were formulated by FAO and country representatives (formulators are indicated between parenthesis when relevant):

- **Regarding the strengthening of human resources – to countries and FAO, subject to available resources:**
 - Conduct field training during survey and control operations considering the difficulties in determining the age of locusts and infested areas (Azerbaijan, Tajikistan).
 - Organize a ToT regional session on locust monitoring and information management, including ASDC and CCALM, in Orenburg region (Russian Federation, Kazakhstan).
 - Conduct ASDC refresher/training courses at the national level before the start of the locust campaigns (Kyrgyzstan, Tajikistan).
 - Organized ToT for new ASDC Master-Trainers (Afghanistan, Turkmenistan)
 - Conduct an Asian Migratory Locust survey and training on locust monitoring and information management, including ASDC and CCALM, in Karakalpakstan (Uzbekistan).
 - Organize specialized annual trainings/seminars to the benefit of information officers on data verification (ASDC), analysis, forecast and reporting, as well as on CCALM management and use, including QGIS, also allowing exchange of experience; and arrange Skype meetings every month, seasonally or as needed (FAO and all countries).
- **Regarding equipment – to countries and FAO:**
 - Ensure that enough tablets are available to cover the whole locust survey and control activities (Georgia, Azerbaijan, Turkmenistan).
- **Regarding manuals and guidelines – to FAO:**
 - Prepare electronic guidelines for determining the maturity of locusts and their morphometric measurements (Russian Federation);
 - Identify funding for publishing the monograph on the Italian Locust (Russian Federation).
 - Translate ASDC and CCALM manuals into national languages (all countries).
 - Ensure the release of video manuals on the use of ASDC, CCALM and QGIS in Russian and English with subtitles in national languages (all countries).
- **Regarding ASDC – to countries and FAO:**
 - To all countries: continue to use ASDC as much as possible during locust survey (and send information even in the absence of locusts) and control activities (FAO).
 - To Kazakhstan: test ASDC in Kazakh language in areas adjacent to the Russian Federation and Uzbekistan (FAO).
 - To all countries and FAO: continue to support national staff in using the ASDC at the workplace (during continuing education courses on a national and/or other budget).
 - To FAO: provide remote technical assistance to countries to resolve any difficulties or problems associated with the use of ASDC.
- **Regarding CCALM – to countries and FAO:**
 - To all countries: designate at least two information officers with appropriate education and skills who will be responsible for managing CCALM at the national level (FAO).
 - For the Russian Federation: appoint representatives for certain regions for CCALM management at the national level (Russian Federation).
 - To FAO: due to the lack of transliteration/use of national languages of place names in OpenStreetMap in CCALM, use other cartographic materials (Georgia, Russian Federation).
 - To FAO and countries: translate CCALM interface into national languages and provide the opportunity to fill out FAO forms through the WEB interface in these languages with the corresponding field names and drop-down lists.
 - To all countries and FAO: in order to expand the possibility of creating CCALM products for the second administrative level (district), prepare and enter into CCALM database relevant

historical data on areas infested by locusts; areas infested by locusts exceeding the EPV; as well as the treated area - starting from 2000 (if available) until now (FAO).

- **Regarding the development prospects of CCALM – to countries and FAO:**

- To FAO and countries: create an e-Committee of representatives from interested CCA countries and FAO experts (Information Officers) to jointly discuss and expand the list of CCALM GIS products in the following areas:
 - Define algorithms for determining locust hatching periods using temperature satellite data for subsequent distribution;
 - Make a comparative analysis of water spills in the current and past years in the territories of Uzbekistan, Kazakhstan and the south of the Russian Federation from April to September using data from remote sensing of the Earth from space;
 - Enter in CCALM database data on average daily air temperature and daily rainfall from February to September for CCA countries from open sources of the World Meteorological Organization;
 - Analyze the index of vegetation conditions, calculated on the basis of long-term data on the vegetation index NDVI and giving a relative estimate of the driest or wettest years based on the presence or absence of vegetation cover.
- To Kazakhstan and Russian Federation: to eliminate duplicate activities and fill out the FAO locust survey and spray monitoring forms, consider developing a module linking CCALM and the national databases developed in the Russian Federation and Kazakhstan (Russian Federation, Kazakhstan).

- **Regarding reporting and national bulletins – to countries:**

- Improve the quality of information in national monthly bulletins.
- If possible, send information separately for each of the three locust species.
- Send national bulletins to FAO by the first day of the following month.
- In regional monthly bulletins, present the forecast for the period of one month.
- Train a specialist in computer mapping to improve the quality of bulletins (Afghanistan).

- **General recommendations – to countries and FAO:**

- Ensure high-level support for the wide use of ASDC and CCALM at the national level.
- Improve CCALM according to recommendations made by CCA users, especially during the forthcoming years of testing.
- Link ASDC/CCALM management to the forthcoming discussions of long-term regional cooperation on locust in CCA.

62. While reviewing the Workshop results, proposed recommendations and next steps presented by the GIS Expert, the Delegate from Afghanistan stressed that there are no GIS/cartography specialists in Afghanistan and asked how this issue could be addressed. The GIS Expert explained that FAO will not train experts on cartography (requiring a University course) but will train new Master-Trainers on ASDC/CCALM. She reminded that it is important that two staff from the Ministry of Agriculture, Irrigation and Livestock (MAIL), Afghanistan, be officially appointed for CCALM management and use in order to take the maximum benefit from FAO trainings on locust monitoring and information management as well as on ASDC and CCALM and then to carry out correct data analysis and forecasting. The GIS Expert also clarified that once basic information is mastered, additional training can be provided to the Afghan specialists. The Russian Delegate informed that there is a special Programme in Russian Universities supporting free courses for student from Africa and Asia (additional information should be requested at Ministerial level in Afghanistan). Upon request of the Russian Federation, the FAO Agricultural Officer/Locust Management explained that the electronic draft version of the Practical Guidelines on the three locust species in CCA is available on-line, in English and Russian, and can be distributed to the countries until funds are available for the printed version.

63. The Delegate from Kyrgyzstan informed that three specialists had been appointed in his country to check all data at the end of the locust campaign. In 2017 and 2018, these specialists have been trained by the GIS Expert. He reminded that this is a continuous and long process, which is also time consuming. In their case, the work is carried out by young experts who check the paper forms and insert data in the system. In fact, as funds for business trips have been reduced in Kyrgyzstan, he explained that only a few regional specialists could be involved compared to previous years, leading to a shortfall in ASDC data collection and transmission. However, operators have been asked to fill paper forms to be inserted in the system afterwards.
64. The Delegate from the Russian Federation expressed his appreciation for the work done so far by the countries, explaining that with the availability of more and more concrete information, the result of the joint work represents a common growth.

SESSION 4: RISK REDUCTION FOR HUMAN HEALTH AND THE ENVIRONMENT

Monitoring impact of locust control operations (Item 11)

Developing a global system for health and environmental monitoring of locust control operations, including on-the-job training on monitoring techniques, June 2019, Georgia (Item 11 a)

65. The Delegate from Georgia presented the "Pilot activity to develop an integral system for human health and environmental monitoring of locust control in Georgia", under Result 5.2 of the Programme. The FAO International Consultant, Senior Environmental Expert, Mr H. Van der Valk, visited Georgia from 30 May to 7 June 2019 to develop a proposal for the structure and functioning of a monitoring system and conduct on-the-job training on monitoring techniques during locust control operations. During his mission, together with four specialists of the Phytosanitary Department of the National Food Agency (NFA), the Senior Environmental Expert visited several sites in Kakheti Region, around and south of the town of Dedoplistskaro, where chemical treatments had been and were carried out against Moroccan and Italian Locusts. At this occasion, from 2 to 5 June 2019, on-the-job training was provided with various monitoring activities, 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 Experts. Following the field visits and discussions held between the national stakeholders and the FAO International Consultant, a plan was drafted to develop such an integral system, which included required resources and trainings.
66. The Delegate from Georgia thanked FAO for the provision of technical assistance and specific monitoring equipment. He underlined that no major incident had been reported both on human health and environment. In fact, he explained that although locust control is mainly carried out close to pastures and farms, which can be particularly risky for cattle, local population is always informed and treatments are carried out in compliance with FAO recommendations. Other measures taken include: checking PPE worn by operators in the field, organizing awareness campaigns through media and TV channels, carrying out analysis on water samples. Some further recommendations were provided by the Environmental Expert during the training, such as: use gloves made of nitrile; change the type of masks used by operators during treatments, which do not fulfill FAO requirements; use overalls made of cotton and not disposal ones. The Delegate also informed that the Environmental Expert showed how to use the Test-mate kit and reagents, the latter delivered for the Training, as well as how to collect and prepare vegetation samples for laboratory residue analysis, which was deemed very useful. It was said that after the training, trainees acquired sufficient experience to continue this activity.

Monitoring impact of locust control operations: Human Health and Environment Monitoring Teams' work in Azerbaijan and Georgia, May-September 2019 (Item 11 b)

67. As part of the overall above-mentioned activity, a small-dedicated team was set up in Georgia to be responsible for monitoring the quality and efficacy of treatments as well as the impact of locust control operations on human health and the environment. Specific tasks and a tentative workplan were established concerning additional field monitoring missions to be carried until the end of the 2019 locust campaign. The Delegate from Georgia presented the activities implemented by the specialized Human Health and Environmental Monitoring Team, set up in Georgia with the operational and technical support of the FAO Programme (in particular, thanks to the USAID project). The Team, composed of three specialists, carried out three one-week missions: one in June and one in July in Kakheti and Kvemo kartli regions and the latter in September 2019 in Kvemo kartli region to collect samples for pesticide residue analysis in vegetation.
68. The Delegate from Georgia explained that the monitoring missions started with medical check of operators (12 persons). The "Pesticide use passport" was introduced for the first time. In addition, equipment was checked, sprayers calibrated, Human Health and Environmental Monitoring Form Forms filled and cholinesterase levels were also established (by taking blood samples of operators in order to assess cholinesterase inhibition after exposure to organophosphate pesticides, which was repeated at the end of the campaign). He stated that no major problem was detected; the staff respected safety requirements and worked in compliance with FAO recommendations, minimizing the risks. Monitoring activities on non-target organisms were also undertaken by the team and focused primarily on bees, representing a big issue in Georgia during control operations. Two farmers having beehives at 1 km away from the spraying area were selected. A statistical approach was used, including also standard mortality rate. After ten days, it was assessed that the mortality rate has not changed, showing that the treatments were not a major problem. He instead stressed the importance of empty pesticide containers management. The Delegate requested the possibility to employ local private companies, with the support of the USAID project, for the containers disposal, as there is no local facility to stock the empty drums. He also informed that the final report on the missions by the Human Health and Environmental Team has to be finalized and sent to FAO by the end of November 2019.
69. The Delegate of Georgia also explained that the Monitoring Team carried out sampling on two pesticides (i.e. deltamethrin and chlorpyrifos) over a period of ten days, during the third mission in September 2019, with the objective to conduct pesticide residue analysis. The aim was to understand whether the withdrawal period for livestock was correct and inform farmers accordingly. He explained that the laboratory provided results but that the figures still need to be clarified. The Delegate noted that the monitoring activities carried out were very useful and that the next year they might have the opportunity to conduct such work again under the FAO Programme, although it requires a lot of work and time.
70. During the discussions, the FAO Agricultural Officer/Locust Management explained that this was a pilot activity and that Georgia made a lot of efforts. However, being a long-term activity, it cannot be finalized in one year but it has to continue and it requires hard work. For example, checking effects on non-target animals takes a long time. At the question to what exactly Georgia would like to focus next year, the Delegate replied that the biggest problem is managing pesticide in the presence of bees. The Delegate from Kyrgyzstan reminded that during the Japan/JICA project, when the Human Health and Environmental Monitoring Team was established, a doctor was present during the missions of the first year. He recommended that the specialists learn well how to take blood samples, as well as to include an entomologist in the Team who can identify non-target animals. The Delegate of Georgia replied that doctors were not invited as this is not their field (in Georgia) and that there is limited availability of specialists they can invite, including entomologists.

71. The Delegate from Azerbaijan reported on the monitoring activities of the Human Health and Environmental Monitoring Team, which was set up in 2019 thanks to the FAO Programme. He reminded that the pilot activity had been organized in Azerbaijan in 2017 with on-the-job training delivered by the FAO International Consultant, Environmental Expert; the Ministry of Health had also been involved in the activity and discussions. Although it was not possible to do it in 2018, the Team was set up in 2019, including three members. Before undertaking the missions, very useful advice was provided by the Environmental Expert during a Skype meeting held in the FAO Partnership and Liaison Office in Baku with the team members.
72. Four human health and environmental monitoring missions were carried out from May to June 2019 in Kudru Plain, Hajigabul, Jeyranchol Plain and Ajynohur Plain (the number of mission and their locations had been decided depending on the presence of locusts). They included the following activities: filling FAO forms, including the pesticide use passport, equipment check, assessment of the impact of control operations on non-target animals and management of empty containers. No cholinesterase analysis was carried out since organophosphate insecticides are not used in the country. However, doctors undertook medical checks before and after treatments and no problems have been reported. During the fourth mission, treatments were finished already. He also explained that awareness campaign for local population is organized before locust operations start, usually through interviews (press), and this was done as much as possible in line with the recommendations by FAO. He concluded by saying that the Team does not have much experience yet being the first year of implementation of this activity. He also indicated that mission reports were prepared as well as a final one was sent to FAO.
73. The FAO Agricultural Officer/Locust Management informed that the Environmental Expert could not be present via Skype during the discussion due to another commitment. However, he had left some comments for the two countries, which were read to the Delegates; they will also be translated and sent to them at a later stage. To Delegate from Azerbaijan explained that the four monitoring missions were carried out in very remote sites. Regarding the Pesticide use passport, it was implemented for the first time and non-experienced operators may have difficulties in filling it. He also stressed that next year, the forms will be filled before the start of the campaign and checked at the end.

Progress made on control operations, pesticides and biopesticides and on safety and environmental precautions (Item 12)

74. The Delegate from Kazakhstan indicated that control operations are not carried out by his organization, the State Institution "Republican Methodological Center for Phytosanitary Diagnostics and Forecasts", State Inspection Committee in the Agricultural Sector, Ministry of Agriculture. He noted that the agenda/content of the Technical Workshop as well as of the regional Workshop on Locust Data Analysis, Forecast and Reporting in CCA are very useful and will be taken into account.
75. The Delegate from the Russian Federation indicated that trainings on locust spraying techniques were delivered in St. Petersburg: special attention was given to calibration and settings of sprayers. He also informed that efficacy assessment of biological control was also carried out. There are only two officially registered bio-pesticides against locusts in Russian Federation (*Green barrier* and *Metharizium*). In addition, he said that pesticides are used according to standards; usually before and during the campaign, the "Russian Agricultural Center" informs farmers about main rules concerning treatments and reminds them about safety measures. After treatments, pesticide residue analysis is also conducted and farmers can request themselves the laboratory to undertake such analysis. In 2019, a forum on accumulation/disposal of empty pesticide drums was organized, resulting that more than 1 000 empty drums were collected in Russia and disposal will be arranged based on a system used in Germany.

76. The Delegate from Tajikistan informed that both EC and ULV sprayers are used for locust control. A total of about 800 people were hired for control operations this year. He noted that vehicles and motorcycles received in the framework of the Japanese funded project were very good, although the number of motorcycles is not sufficient for surveys. Other methods are used such as involving local population to detect locusts. He also informed about the tents (for 12 people) received through the Japan/JICA project and remarked that camping beds are indeed required. He also indicated that during the 2019 campaign, no major problem was observed but he stressed the lack of some equipment, in particular water tankers for transporting water for pesticide treatments. He informed that work is going on regarding testing of new biopesticides (Actorofit), with encouraging results (70 percent locust mortality in six days). In 2020, it is planned to test two more biopesticides, Avermectin and Beauveria. About chemical pesticides, he informed that insecticides are received from China every year; this year, due to the holiday period in China when the campaign started, it was decided to import them from Turkey, causing a delay. In fact, pesticides remained blocked in Turkmenistan, who did not provide the authorization to transport them throughout the country. Eventually, they reached Tajikistan thanks to the permit provided by Afghanistan to transit in their country.
77. The Delegate from Tajikistan informed that PPE kits were used by operators and that the Practical Guidelines on risk reduction, prepared thanks to the Japan/JICA project, were distributed. He stressed that, thanks to the training provided to the Master-Trainers, the State Entity "Locust Control Expedition" (SE-LCE), Tajikistan, has independently delivered trainings in various districts. This year, a total of 150 specialists were trained. One problem is related to the Internet connection (which is not supported by project funds anymore). He explained that local communities are involved (they also bring their pesticide) and assist as much as possible. Pesticide, PPE equipment, cotton overalls and other disposable items come from the state budget every year. As far as empty containers management is concerned: they are collected and recycled and resulting funds are used for charity. No major problem was incurred during transportation and cleaning of empty pesticide containers. The Delegate informed that SE-LCE is committed in reducing the risk posed by pesticides on human health and the environment.
78. The Delegate from Turkmenistan informed that local population is usually invited to attend planning meetings before the campaign during with areas to be treated are designated. Tenders to procure pesticides take place in February. In the country, there is no system for recycling the empty containers, which are collected and eliminated.
79. The Delegate from Afghanistan reiterated the lack of trained GIS specialists and the need to fill this gap.
80. The Delegate from Armenia informed that all pesticides undergo registration requirements and that the Rotterdam Convention was signed. Media is informed about the location and timing on pesticide use for chemical treatment.
81. The Delegate from Azerbaijan informed that pesticides are procured with tender process. The most used are pyrethroids. There is interest in procuring Insect Growth Regulators (IGRs) (Deflubenzuron) as well as in biological treatments. He said that empty containers are collected and carried to regional centers where storage facilities are located. There is one field site where all pesticides are stored; the Department of regulation of phytosanitary and agrochemical services, State Agency for Agrarian Services, is also involved in this process. To a question from the Delegate from Kyrgyzstan on the efficiency of EC versus ULV, the Delegate from Azerbaijan informed that in 2018 ULV pesticide was used with a very good effect.
82. The Delegate from Georgia explained that 60 pesticides for locust control are registered in the country, including organophosphates. However, since chlorpyrifos is banned in the EU, the country urgently needs to find a good replacement for it starting from next year. Two new types of pesticides with slow action (IGRs) are used in some part of the campaigns. Four new pesticides

have been recently registered. Training on risk reduction on human health is carried out. The biggest problem remains the disposal of empty pesticide containers.

83. The Delegate from Uzbekistan informed that 56 pesticides are registered against locust and also three biological products. A factory producing chemicals is located in Uzbekistan, which are exported to Afghanistan, Tajikistan, and Turkmenistan. Medical check-ups are conducted on operators. He explained that factories collect empty drums and recycle them producing other drums. In the past, drums were buried, which is not safe. The Delegate from Uzbekistan also explained that in the country locust hotspots are located close to cultivated areas. He requested donors to support Novacrid (biopesticide), which would stop migrations of locusts between Turkmenistan and Uzbekistan and between Tajikistan and Uzbekistan. He asked JICA and FAO to support this issue, to save the environment. The FAO Agricultural Officer/Locust Management reminded that in the new JICA project, it is planned to conduct tests with Novacrid over limited areas in Uzbekistan with participants from other countries and assess its advantage and disadvantages.
84. Referring to the new envisaged JICA project, the Delegate from Tajikistan proposed to take into accounts specificities of each recipient country, reminding that in the previous Japan/JICA, 57 percent of the budget was allocated to Tajikistan. He asked that funds be shared proportionally among countries and that the project duration be of three years. He indicated that the allocated amount of equipment for Tajikistan is not sufficient. The FAO Agricultural Officer/Locust Management reminded that during the 2017 Technical Workshop, all concerned countries, FAO and the donor discussed jointly and agreed upon on the activities. He indicated that the project duration is of five years and that the interests of all countries were taken into consideration. Recently, countries were requested to provide an updated list of equipment according to their most recent needs. Based on that, the project was finalized. He stressed that the Project Document is about one hundred pages, that it has been discussed over three years and that it is currently going through the internal process both in FAO and JICA. He reminded that the final project budget is not yet confirmed and that it is not possible to open the discussion now. He also confirmed that the second phase includes six countries. The Representative from JICA, Ms Abe, confirmed that countries provided their needs. The project approval depends on JICA and Japanese Government.

ANY OTHER BUSINESS

85. The Agricultural Officer/Locust Management made a PowerPoint presentation on locust natural enemies. He explained that natural enemies are beneficial organisms, which can keep locust populations under control. At the same time, natural enemies often become severely affected by pesticide anti-locust treatments because most of the pesticides used are broad-spectrum neurotoxins. He presented mostly birds and arthropods with an emphasis on blister beetles, tachinids and bombyliid flies. Measures to reduce the negative impact on natural enemies include the use of less toxic insecticides, for example IGRs and biopesticides. A part of the presentation was thus devoted to entomopathogenic fungi and in particular, *Metarhizium acridum*, which is the most efficient biopesticide against locusts.

ADOPTION OF THE REPORT

86. Considering the reduced duration of the Workshop, from five to three days, as well as the limited number of FAO staff participating in the Workshop this year, it was agreed that the Report would be prepared after the Workshop. The workplan for Year 9 (see paragraph 52 and Table 3) was nevertheless endorsed by all countries during the closing session. The draft Report, once available, will be shared with all countries for comments by a given deadline and afterwards the report will be considered as approved by all participants.

CLOSING REMARKS

87. The FAO Agricultural Officer/Locust Management asked countries to pay attention to the new directions taken, which include strengthening further regional cooperation and national capacities for prevention as well as bio-pesticide use and human health and environmental monitoring. He indicated that when the locust situation is calm, the countries should pay more attention to ASDC or other monitoring activities and urged them not to lose this opportunity next year. He reminded that the FAO Programme started in 2011, that activities could be implemented thanks to projects and donors. However, he stressed, that in the long prospective, countries cannot rely always on donors and this is the reason why the creation of a Commission on locust issues in CCA is supported for long-terms sustainable cooperation. In this regard, FAO is going to organize high-level meetings in the various countries to advocate for it. This will be a long process and funds will eventually depend primarily on countries, whatever there is or not from external assistance. He also reminded that currently there are three FAO Commissions on Desert Locust in different geographical areas, which work very well. He concluded by thanking everyone for the active participation, reminding once again to prepare the monthly locust bulletins and hoping that the 2020 locust campaign would not bring problems.

88. The Chairman ended the session by wishing everybody good work, success and good health.

ANNEXES

Annex I - List of participants

| NAME | TITLE & AFFILIATION | TEL. | E-MAIL ADDRESS | FULL ADDRESS |
|------------------------------|---|--|--|--------------------------------|
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| Mr Rustam AKHMEDOV | Interpreter | | | |
| Mr Nizam YULDASHBAEV | Interpreter | | | |

Annex II - Provisional Agenda

Opening

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

Session 1: National 2019 locust campaigns and forecasts for 2020

4. National locust campaigns in 2019, forecasts for 2020 and preparation of the next campaigns (countries' presentations)

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

5. Overview on Programme implementation in 2019 and funding situation
6. Regional cooperation in 2019:
 - a) Joint-Survey: Armenia, Azerbaijan, Georgia, Russian Federation, May 2019 (countries' presentation)
7. National capacities' development in 2019
 - a) Training-of-Trainers (ToT) on locust management - Regional sessions:
 - Locust monitoring and information management, including the Automated System for Data Collection (ASDC) and the Caucasus and Central Asia Locust Management System (CCALM), Armenia, Azerbaijan, Georgia, Russian Federation, February/March 2019 (countries' presentations)
 - Locust spraying and pesticide risk reduction, including ASDC, Armenia, Azerbaijan, Georgia, Russian Federation, March 2019 (countries' presentations)
 - b) ToT on locust management - National sessions:
 - National sessions on locust monitoring, spraying and pesticide risk reduction, including ASDC use, Armenia, Azerbaijan, Georgia, Russian Federation, April-June 2019 (countries' presentations)
 - c) Training sessions
 - Regional Training on locust monitoring and information management, including ASDC and CCALM, Uzbekistan and Turkmenistan, September 2019 (countries' presentation)
 - d) Equipment to strengthen operational capacities: update on delivery to CCA countries
8. Programme of work during 2020

Session 3: Developing monitoring and analysing systems

9. Developments of ASDC and CCALM in 2019 (situation update, issues encountered, lessons learnt and recommendations) and next steps for 2020
10. Results of the Workshop on Locust Data Analysis, Forecast and Reporting in CCA and steps forward

Session 4: Risk reduction for human health and the environment

11. Monitoring impact of locust control operations

- a) Developing a global system for health and environmental monitoring of locust control operations, including on-the-job training on monitoring techniques, June 2019, Georgia (country's presentation)
- b) Monitoring impact of locust control operations: Human Health and Environment Monitoring Teams' work in Azerbaijan and Georgia, May-September 2019 (countries' presentations)

12. Progress made on control operations, pesticides and biopesticides, and on safety and environmental precautions (countries feedback)

Closing

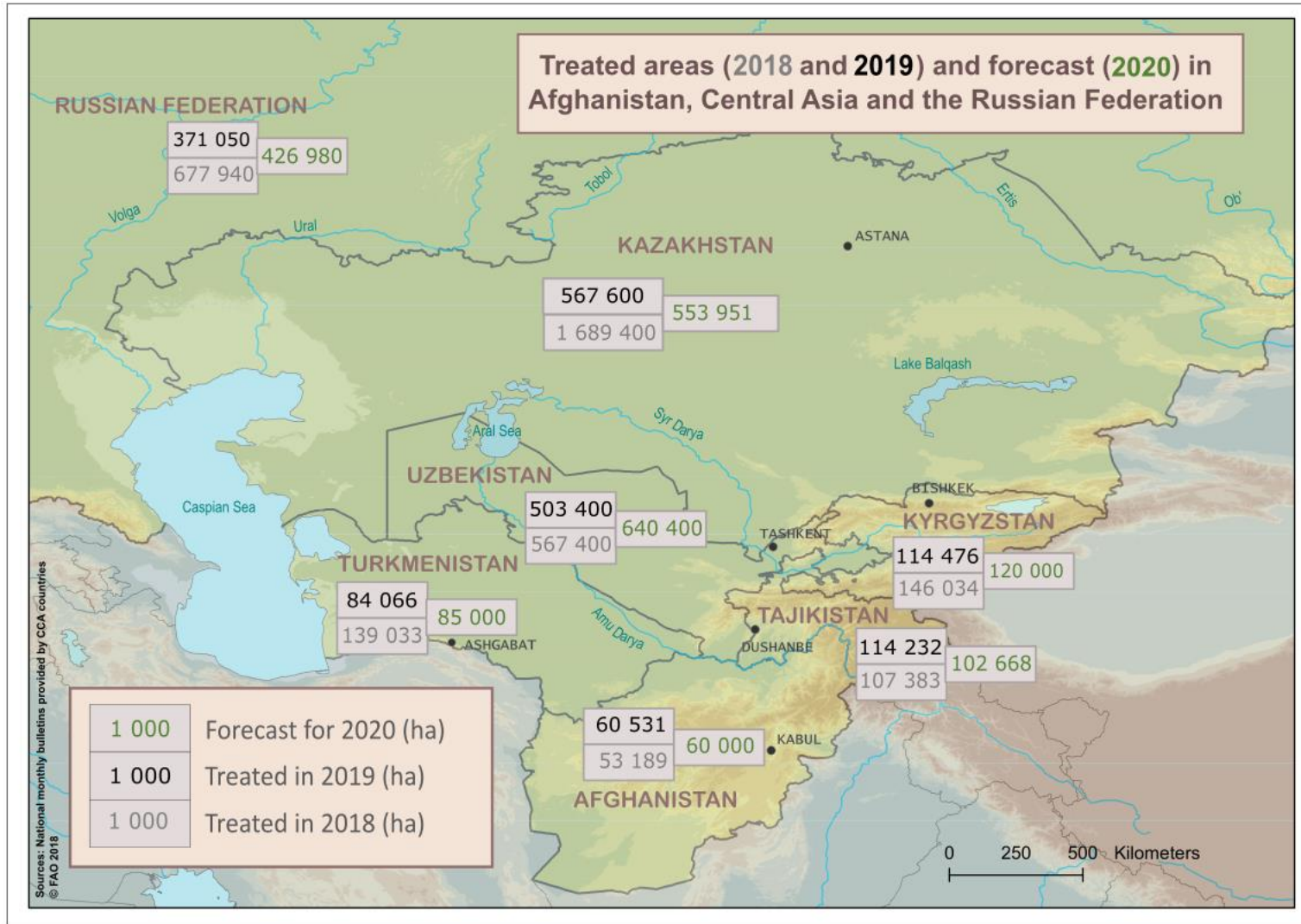
13. Any other business

14. Closure address

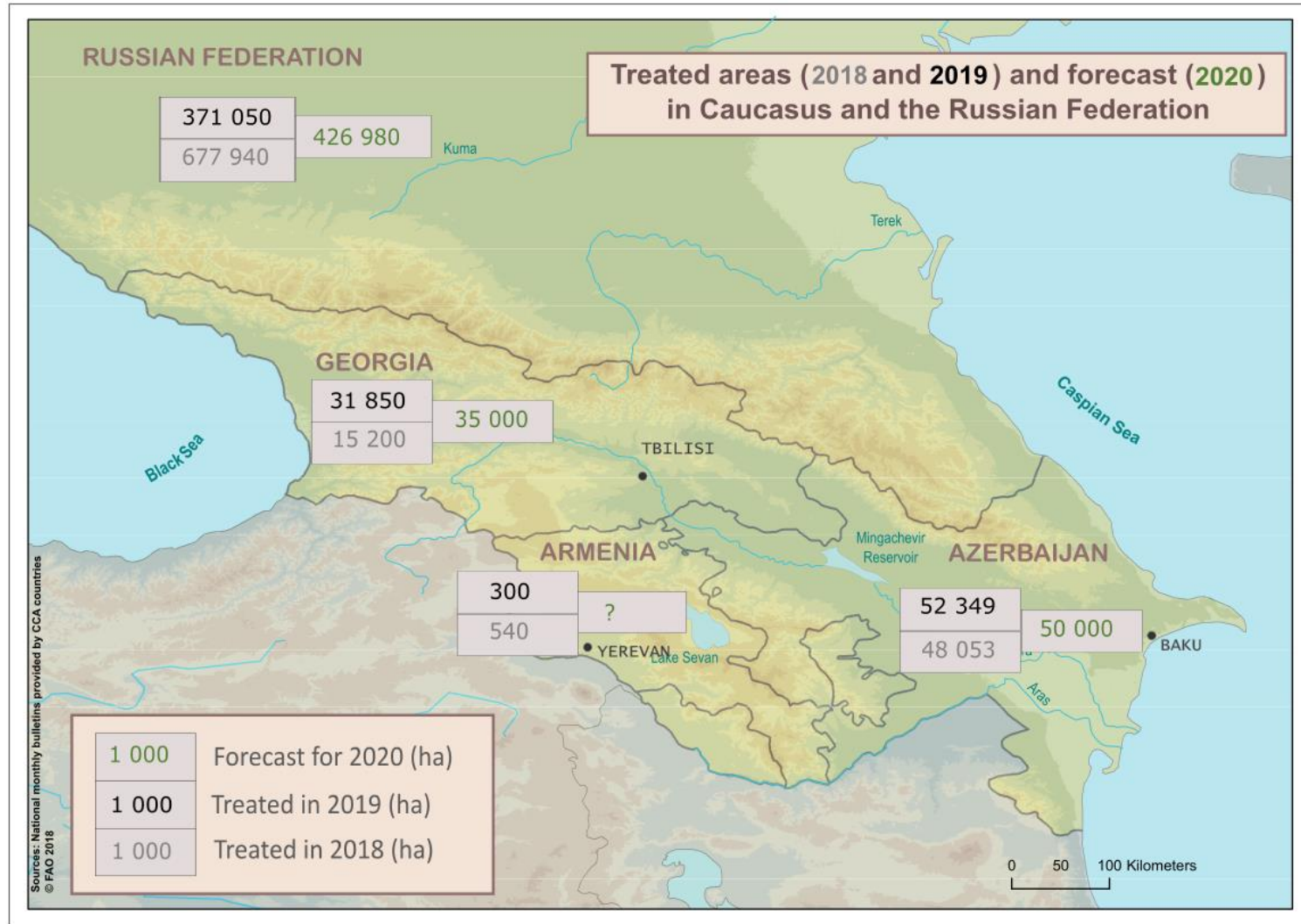
All working papers will be available on the FAO website "Locust Watch in CCA" at:
<http://www.fao.org/ag/locusts-CCA/en/index.html>

Annex III - Maps of treated areas in 2018 and 2019 and forecast for 2020 in CCA countries

Map of Central Asia and the Russian Federation



Map of Caucasus



Annex IV - Implementation of the Programme during Year 8 (1 October 2018- 30 September 2019): budget and tentative expenditures (except Japan/JICA project)

| Res. & Act. | Description | TOTAL EXPENDITURES (USD) YEAR 8 (1 Oct. 2018- 30 Sept. 2019) | | GCP/GLO/963/USA USAID project | | GCP/SEC/004/TUR FTPP project | | TCP/KAZ/3701 TCPf project | | FAO Regular Programme (RP) | |
|--|-------------|---|-------------------|----------------------------------|-------------------|---------------------------------|-------------------|------------------------------|-------------------|----------------------------------|-------------------|
| | | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 |
| R1 - Regional cooperation | | 62,000 | 32,425 | 37,000 | 0 | 25,000 | 27,325 | | | | 5,100 |
| 1.1. Facilitate regional exchanges to manage locust situations | | 25,000 | 32,425 | | | 25,000 | 27,325 | | | | 5,100 |
| 1.1.1. Create/maintain regular regional information sharing of standardized data (Nat. Cslt for bulletins) | | 0 | 0 | | | | | | | | |
| 1.1.2. Allow direct experience exchange (technical workshop) | | 25,000 | 32,425 | | | 25,000 | 27,325 | | | | 5,100 |
| 1.2. Develop coordination, including through transboundary policy | | 0 | 0 | | | | | | | | |
| 1.3. Identify the best long-term solution for sustainable regional cooperation | | 37,000 | 0 | 37,000 | | | | | | | |
| R2 - National capacities | | 174,000 | 74,964 | 174,000 | 74,964 | | | | | | |
| 2.1. Training-of-Trainers (ToT) programme - locust management | | 174,000 | 74,964 | 174,000 | 74,964 | | | | | | |
| 2.2. Make available/accessible background documentation on locust pests | | 0 | | | | | | | | | |
| a Biblio & Material to be made available (e-committee) | | | | | | | | | | | |
| b Monographies | | | | | | | | | | | |
| c Guidelines | | | | | | | | | | | |
| 2.3. Allow internships and post-graduate formation | | | | | | | | | | | |
| a One-month internship | | | | | | | | | | | |
| b Fellowship: 2 or 3-year diploma for 3 students & E-committee | | | | | | | | | | | |
| 2.4. Promote and support applied research | | | | | | | | | | | |
| a Two grants for applied research | | | | | | | | | | | |
| b Entomological and chemical equipment for 6 laboratories | | | | | | | | | | | |
| R3 - Locust issues and disasters better anticipated and mitigated | | 150,497 | 110,537 | 132,000 | 96,218 | | | 18,497 | 14,319 | | |
| 3.1. Improve survey operations for better field locust monitoring | | 18,497 | 25,754 | | 11,435 | | | 18,497 | 14,319 | | |
| 3.1.1. Strengthen human capacities (techn. consultations on survey) | | 18,497 | 25,754 | | 11,435 | | | 18,497 | 14,319 | | |
| 3.1.2. Strengthen operational capacities (survey equipment) | | 0 | | | | | | | | | |
| 3.2. Organize regular cross-border surveys | | 10,000 | 11,660 | 10,000 | 11,660 | | | | | | |
| 3.3. Develop monitoring and analyzing systems | | 122,000 | 73,123 | 122,000 | 73,123 | | | | | | |
| 3.3.1. Extend use of Geographical Information System and remote sensing | | 122,000 | 0 | 122,000 | 73,123 | | | | | | |
| 3.3.2. Improve forecasting | | 0 | | | | | | | | | |
| 3.4. Enhance preparedness for risk reduction - contingency plans | | 0 | 0 | | | | | | | | |

| Res. & Act. | Description | TOTAL EXPENDITURES (USD) YEAR 8 (1 Oct. 2018- 30 Sept. 2019) | | GCP/GLO/963/USA USAID project | | GCP/SEC/004/TUR FTPP project- | | TCP/KAZ/3701 TCPf project | | FAO Regular Programme (RP) | |
|-------------|---|---|-------------------|----------------------------------|-------------------|----------------------------------|-------------------|------------------------------|-------------------|----------------------------------|-------------------|
| | | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 | Budget Year 8 | Expend. Year 8 |
| | R4- Improved response mechanisms to locust outbreaks | 9,540 | | | | | | 9,540 | 0 | | |
| | 4.1. Allow early reaction and appropriate control operations | | | | | | | 9,540 | 0 | | |
| | 4.1.1. Strengthen human capacities (techn. consultations on control) | | | | | | | 9,540 | 0 | | |
| | 4.1.2. Strengthen operational capacities (control equipment) | | | | | | | | | | |
| | 4.1.3. Enhance public-private partnership | | | | | | | | | | |
| | 4.2. Promote less harmful pesticides and alternatives to conventional pesticides | | | | | | | | | | |
| | 4.2.1. Develop ULV formulations and related techniques | | | | | | | | | | |
| | 4.2.2. Propose alternatives to conventional pesticides (demonstration) | | | | | | | | | | |
| | 4.2.3. Encourage registration of more pesticides | | | | | | | | | | |
| | R5 - Impact on human health and the environment mitigated and monitored | 61,549 | 48,742 | 56,549 | 42,381 | 5,000 | 4,141 | | | | 2,220 |
| | 5.1. Mitigate impact of locust control operations on human health and the environment | | 2,220 | | | | | | | | 2,220 |
| | 5.1.1. Strengthen human capacities (techn. assistance) | | | | | | | | | | |
| | 5.1.2. Strengthen operational capacities (PPE) | | | | | | | | | | |
| | 5.1.3. Pesticides and empty containers management | | | | | | | | | | |
| | 5.1.4. Produce extension material for mitigating impact of locust treatments | | 2,220 | | | | | | | | 2,220 |
| | 5.2. Monitor impact of locust control operations on human health and the environment | 61,549 | 46,522 | 56,549 | 42,381 | 5,000 | 4,141 | | | | |
| | 5.2.1. Strengthen human capacities (techn. assistance) | 0 | 0 | | | | | | | | |
| | 5.2.2. Strengthen operational capacities (Testmate, environmental material, etc.) | 5,000 | 9,915 | | 5,774 | 5,000 | 4,141 | | | | |
| | 5.2.3. Develop integral system for environmental and health monitoring | 56,549 | 36,607 | 56,549 | 36,607 | | | | | | |
| | 5.2.4. Facilitate impact assessment & analysis of material (residue analysis) | 0 | 0 | | | | | | | | |
| | R6 - Public information and awareness increased | 0 | 600 | | | | | | | | 600 |
| | 6.1. Develop awareness and education among local populations | | | | | | | | | | |
| | 6.2. Enhance visibility of locust issues and management and of related donor support | | 600 | | | | | | | | 600 |
| | 6.2.1. Prepare and implement a communication plan | | 600 | | | | | | | | 600 |
| | 6.2.2. Create and update a website on locusts in Caucasus and Central Asia | | | | | | | | | | |
| | Other | 73,949 | 59,587 | 49,049 | | 24,900 | 26,142 | | | | 33,445 |
| | Supervision, coordination, management of the Programme | 14,000 | 47,377 | | | 14,000 | 13,932 | | | | 33,445 |
| | Reporting and Evaluation | 30,600 | 10,950 | 19,700 | | 10,900 | 10,950 | | | | |
| | TSS | 29,349 | 1,260 | 29,349 | | 0 | 1,260 | | | | |
| | Sub-total | 531,535 | 326,855 | 448,598 | 213,563 | 54,900 | 57,609 | 28,037 | 14,319 | | 41,365 |
| | Support cost | 47,138 | 27,201 | 31,402 | 12,775 | 13,773 | 13,424 | 1,963 | 1,002 | | |
| | Total | 578,673 | 354,056 | 480,000 | 226,338 | 68,673 | 71,032 | 30,000 | 15,321 | | 41,365 |

Annex V - Bilingual List of National Focal Points

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| ENGLISH | RUSSIAN |
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