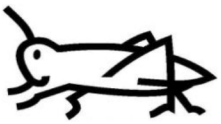
Food and Agriculture Organization of the United Nations

Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 49



FAO - Plant Production and Protection Division (AGP) *15 June 2017*

Situation level: THREAT in Kazakhstan and Tajikistan

Situation level: CAUTION in Afghanistan, Kyrgyzstan and Russia

Situation level: CALM in Armenia, Azerbaijan, Georgia and Uzbekistan

General Situation during May 2017
Forecast until mid-July 2017

Weather conditions, which were unsuitable for locusts in early spring, continued to locally delay or hamper their development but recent warming up of temperatures boosted Moroccan Locust (DMA) adult appearance. As a result, DMA fledging started in probably all Central Asian (CA) countries as well as in Azerbaijan and egg-laying was reported in Tajikistan and Uzbekistan. During the forecast period, DMA fledging and egg-laying will generalize in all countries of usual DMA distribution area (i.e. all CCA countries but Armenia) and DMA life cycle will come to an end in southern CA countries. Italian Locust (CIT) hopper development will continue and fledging will start in southern CA countries while hatching and hopper development will generalize in Armenia and Georgia. Migratory Locust (LMI) hopper development will continue in Kazakhstan, Russia and Uzbekistan. So far, 1.5 million ha have been treated in CCA countries mainly against DMA hopper bands (more than 87%), which represents twice the area treated during the same period in 2016.

Caucasus. While DMA fledging started in **Azerbaijan**, DMA hopper development was still in progress in **Georgia**. CIT hatching was reported in late May in **Armenia** and should not start before June in Georgia. Control operations were carried out on 16 200 ha in Azerbaijan only.

Central Asia. DMA hopper development was in progress in all CA countries and fledging started. Egg-laying began in Tajikistan and Uzbekistan and probably in their two southern neighboring countries, Afghanistan and Turkmenistan. CIT hopper development was in progress throughout the region and LMI hatching started in the three countries where the species is distributed, i.e. Kazakhstan, Russia and Uzbekistan. Since the beginning of the 2017 locust campaign, almost 1.5 million ha have been treated against the three locust pests of which 87% against DMA.

Weather and Ecological Conditions in May 2017

In Caucasus, cool weather prevailed except in Azerbaijan. In Central Asia, conditions became suitable for hopper development, especially in southern countries.

In **Caucasus**, the weather was still cool and delaying locust hatching and hopper development except in Azerbaijan.

In Armenia, daily temperatures ranged from 16 to 22°C in lowlands and from 3 to 18°C at foothills, where rains fell at times.

In Azerbaijan, the weather was mostly warm and suitable for rapid hopper development. The average monthly temperature was of 16/22°C, reaching a maximum of 24/26°C at the end of the month. No rain fell except on 16-22 May throughout the country. South- easterly and north-westerly winds prevailed at a speed of 3 to 4-6 m/s and up to 14-16 m/s in gusts. The natural vegetation cover was dense but drying out in all traditional locust habitats. Cultivations were at maturity and winter cereal harvest started.

In Georgia, the temperatures were relatively low (ranging from 6° to 25.5°C) and frequent medium to heavy rains –which is unusual at that period of the year-fell, amounting 25.5 mm. These conditions slowed down locust development. Natural vegetation was green with a medium to high cover.

In **Central Asia**, the weather was hot in the southern countries and still variable elsewhere.

In Afghanistan, more rains fell than in May 2016; vegetation was green in most areas and started drying in some others.

In Kazakhstan, variable weather continued to prevail with temperature increase of about 7°C as compared to April. In the South, the weather was variable with sunny days and some rains, whose amount ranged from 5 to 52 mm. The average daily temperature ranged from 5.6 to +29.5°C (representing an increase of approximately 7°C as compared to the previous month) with minimum of +0.9°C (at night) and maximum of +39°C. Relative humidity varied from 25 to 100%. North-westerly and south-easterly winds prevailed at a speed of 1-9 m/s. In the East, the weather was unstable with sunny days and precipitation (amounting 23.7 mm) in the form of rain and snow. The average daily temperature was of 14.2°C (representing an increase of almost 10°C as compared to the previous month) with minimum of - 2.0°C (at night) and maximum of 35°C. Relative humidity was of 56.8%. North-westerly and south- easterly winds prevailed at a speed of 1-5 m/s and up 15 m/s in gusts. In the West, the weather was variable with sunny days and rains, whose amount ranged from 5.0 to 43.8 mm (maximum amount reported in Aktobe). The average daily temperature ranged from +6.7°C to 25.0°C (an increase of about 7°C as compared to April), with minimum of -0.2°C and maximum of 28.0°C. The wind direction was variable with prevailing south-easterly and south-westerly winds at a speed of 1.4-10 m/s and up 15 m/s in gusts. In the North, the weather was variable with cool days, cloud cover and rains, ranging from 2.0 to 66.7 mm. The average daily temperature ranged from +1.5 to 23.8°C with minimum of -4°C and maximum of 31.0°C. Relative humidity ranged from 24 to 94%. South-westerly and north-westerly winds prevailed at a speed of 1-17 m/s and up to 26.7 m/s in gusts.

In Kyrgyzstan, the average monthly temperature was within the norm throughout the country. In the South, average temperatures ranged from 17 to 19°C in the plains and from 13 to 16°C at foothills, with minimum of 5°C at night during the 1st decade and maximum of up to 31°C during the 3rd one. In the North, average monthly temperature ranged from 16 to 18°C, with minimum of 5°C at night during the 1st decade and maximum of 30°C during the 3rd one. The monthly amount of precipitation was within the norm in the plains (53-73 mm) and above it at foothills (83-91 mm).

Natural vegetation was green with a medium cover and a height of 5-8 cm.

In the Russian Federation, the weather was variable in the southern Federal Districts (FD) and temperatures slightly increased as compared to April. In the southern regions of the Central FD, temperatures were below average and ranged from 0 to 20°C. In North Caucasus and South FDs, variable weather prevailed. Average daily temperatures ranged from 12 to 29°C. In Volga FD, average temperatures ranged from 7 to 24°C and rain fell exceptionally. In the Siberian FD, the weather conditions were characterized by low temperatures (3/24°C) nevertheless within average long-term data.

In Tajikistan, the weather was warm with temperatures ranging from 12 to 16°C at night and 28 to 32°C during the day in Khatlon and no rain fell. In Region of Republican Subordination (RRS), rains fell on 10-11 May. In Sughd, the average temperature ranged from 16 to 18°C at night and 24 to 28°C during the day; heavy rains fell on 23-25 May and temperatures increased during the five last days of the month reaching 32/34°C. As per forecast from the National Meteorological Centre, temperatures in June should be higher by 3/5°C than the previous years. In southern Khatlon, harvest of onions, apples and stone fruits started.

In Uzbekistan, the weather was hot in May with temperatures of 38/47°C during the day and of 24/29°C at night, representing an increase of 25°C as compared to April. In the South, day temperatures ranged from 43 to 48°C throughout the month while they were of 30/34°C at foothill and in mountainous areas from mid-month. Due to heavy rains in March and April, spring vegetation of ephemerals and ephemeroids persisted in May.

Area treated in May 2017

Afghanistan	97 706 ha (1st April-20 May)
Azerbaijan	16 200 ha
Kazakhstan	599 900 ha
Kyrgyzstan	28 715 ha
Russia	232 900 ha
Tajikistan	49 453 ha
Uzbekistan	235 000 ha (10 April-30 May)

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• **SITUATION**

During surveys carried out during the 3rd decade of May on 4 750 ha of lowlands in Ararat, Armavir and Lori provinces, 10 ha were found infested by 1st instar hoppers of the Italian Locust (CIT) at a density of 2-3 hoppers/m².

• **FORECAST**

CIT hatching followed by hopper development will continue and fledging should start by the end of the forecast period. It is planned to survey 34 000 ha in June.

Azerbaijan

• **SITUATION**

Hopper development of the Moroccan Locust (DMA) continued and fledging started, which were boosted by suitable weather conditions (relatively warm temperatures as well as short-term rains during the 3rd decade of May). In three of the six traditional DMA habitats, namely Djeranchel and Eldar steppes in the North-west, Garasu and Padar plains in the South-east and Kharamin plains in the South, the same situation prevailed at the end of the month with presence of 4-5 instar hopper bands and beginning of fledging. Ground spraying operations using pyrethroids were carried out on 16 200 ha against late instar hopper bands and young adults in the two first of the above-mentioned areas.

• **FORECAST**

Due to warm and suitable conditions, mass DMA

fledging is expected during the 1st half of June and will be followed by adult maturation, mating and egg-laying for hoppers having escaped control operations.

Georgia

• SITUATION

Because of the rainy weather, it was not possible to carry out surveys as originally planned. Some DMA hatching was observed during the 1st week of May in Kvemo Kartli region, Marmeuli district, close to the border with Azerbaijan. Neither hopper band nor crop damage was reported. A similar situation prevailed in Kakheti region. Low temperatures and frequent rains have probably hampered DMA hopper development.

• FORECAST

As per weather forecast, rains should continue in June, which will further slowdown DMA development and will also delay Italian Locust (CIT) hatching, which should not start before the 1st decade of June.

CENTRAL ASIA

Afghanistan

• SITUATION

The locust campaign started on 1st April in Baghlan and later on in nine other provinces in northern Afghanistan, namely Badghis, Balkh, Faryab, Ghor, Herat, Kunduz, Samangan, Sar-i-Pul and Takhar, according to weather conditions. Up to 30th April, 1-3 instar DMA hoppers were observed, with prevalence of 1-2 instars. From 20th May, 3rd instar prevailed in Badghis, Faryab, Ghor, Samangan, Sar- i- Pul and Takhar but 4-5 instar hoppers were also observed. Based on surveys in the all above-mentioned provinces, ground control operations were carried out on 97 706 ha against 2-5 instar hopper bands from 1st April to 20th May, using one Insect Growth Regulator in Ultra-Low Volume (ULV) formulation and pyrethroids (in Emulsifiable Concentrate - EC - and ULV formulations); a total of 23 779 litres were sprayed.

To be noted that prior to the launch of the 2017 locust campaign, local rural populations, in particular farmers and herders, were requested to inform plant protection service offices of locust hatching.

• FORECAST

DMA fledging, which has probably started during the 3rd decade of May in some part of the infested provinces, will continue during the 1st half of June while mating followed by egg-laying should begin during the same period.

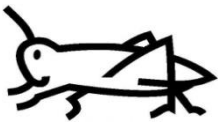
Kazakhstan

• SITUATION

DMA hopper surveys were carried out on more than 2.1 million ha of which almost 855 000 ha were infested, including 531 400 ha (25%) above the economic threshold (ET). A total of 531 300 ha were treated up to 30th May.

CIT spring egg-bed surveys were carried out on almost 290 000 ha and egg-pods were found on 90 700 ha (31.5%); the average number of eggs per pod ranged from 9 to 46 and 0.1 to 84.0% of egg-pods were damaged. Spring/summer surveys were also carried out, on more than 1.8 million ha, of which 269 500 ha were infested by 1-3 instar hopper bands including 141 700 ha (7.7%) above ET. The most infested provinces were in the South (Almaty and Zhambyl with 32 300 ha and 24 400 ha infested above ET by 1-3 instar hopper bands) and in the West (Aktobe, 26 000 ha; West Kazakhstan, 37 300 ha; 1-2 instar hopper bands), representing 84.7% of the whole area infested above ET. A total of 72 500 ha were treated.

Spring surveys of Asian Migratory Locust (LMI) egg-beds were carried out on 60 700 ha and egg-pods were found on 12 000 ha; the average number of eggs per pod ranged from 18 to 95 and 0.2 to 24% of egg-pods were damaged. LMI hopper surveys were carried out in three oblasts on 185 800 ha of which 33 400 ha were infested by 1-2 instar hopper bands, including 19 500 ha (10.5%) above ET. Almaty was the



most infested oblast (16 700 ha above ET). A total of 16 100 ha were treated.

• **FORECAST**

In South-Kazakhstan, DMA mating and egg-laying will take place during the 1st and 2nd decades of June while in Zhambyl mass fledging will occur during the 1st decade of June, followed by mating and egg-laying during the two next decades. CIT hopper development will come to an end in the South and the West and continue in the North; mass fledging should start by mid-June in the South. In June, LMI hopper development will come to an end and fledging will occur in the South and the West while hopper development will continue in the North.

Kyrgyzstan

• **SITUATION**

During DMA surveys carried out on 35 127 ha in the three western provinces, 30 250 ha were found infested by 4-5 instar hopper bands at a density of 12-35 hoppers/m², of which 18 800 ha in Jalal-Abad, 6 015 ha in Batken and 5 435 ha in Osh. DMA fledging started in late May and imagos prevailed in early June; some mating was observed. Together with DMA and causing mixed infestations like in 2016, CIT was also present in these three provinces as 3-4 instar hopper bands. In Chui, only CIT was present; 6 430 ha were surveyed, of which 4 100 ha were infested by CIT hopper bands at a density of 5-35 hoppers/m². Ground control operations were carried out on 28 715 ha in the three western provinces, mainly against DMA infestations (Jalal-Abad, 21 600 ha; Batken, 6 015 ha; Osh, 1 100 ha) using pyrethroids and organophosphates.

• **FORECAST**

Control operations against DMA should be completed by 20th June in the three western provinces but CIT should be present there until the end of June. It is expected that 1 000-2 000 ha of CIT infestations will have to be controlled in Chui and 3 000-4 000 ha in Talas; CIT hatching should start during the 2nd decade of June in Naryn; up to 15 000 ha should be treated against CIT.

Russian Federation

• **SITUATION**

During surveys, locust hopper infestations were found on 332 300 ha, including 209 300 ha above ET. DMA hopper development was in progress and almost completed while CIT and LMI hatching started. Grasshopper infestations were identified on 232 100 ha, including 4 900 ha above ET. As a whole, the average density of hoppers was of: 1.5-4/m² in the Central FD; 53.3/m² in the Southern FD; 26.3/m² in the North Caucasus FD; 0.5-4.0/m² in the Volga FD; 1.1-6.0/m² in the Ural FD; 2.4-5.0/m² in the Siberian FD; and 0.17-0.8/m² in the Far East FD. A total of 232 900 ha were treated against hopper bands, mainly of DMA.

• **FORECAST**

In June, hopper development of all locust species will continue.

Tajikistan

• **SITUATION**

Locust mass hatching was completed throughout the country by mid-May due to suitable weather conditions. DMA hopper development continued in Khatlon; fledging occurred and mass egg-laying started in the southern districts. CIT mass hatching was reported in nine out of the 14 districts of Sughd, where hopper bands of 2-3 instar were present. No other CIT populations were observed during surveys carried out elsewhere in the country. In May, a total of 49 453 ha were treated against locust hopper populations of which 80% against DMA (mainly in Khatlon but also in some mountainous areas of Sughd, close to Kyrgyzstan) and 20% against CIT, using pyrethroids (41%) and organophosphates (59%).

• **FORECAST**

DMA egg-laying will generalize in the central and northern parts of the country and then come to an end everywhere during the forecast period. CIT hopper development will continue, fledging will occur with egg-laying starting by the end of the forecast period. It is expected that control operations will be carried out for another 30 days, mainly against CIT populations.

Turkmenistan

• **SITUATION**

No bulletin was received for the month of May. DMA egg-laying has probably already started; consequently, control operations should have been completed.

• **FORECAST**

No further development is expected this year.

Uzbekistan

• **SITUATION**

DMA fledging started on 20 May and was followed by egg-laying. In grouped populations, density ranged from 30 to 45 adults/m²; 5th instar DMA hopper bands were still present in mountainous areas of Navoiy, Samarkand and Tashkent provinces. CIT hatching started by mid-May in the Aral Sea area. LMI hatching began from the 2nd decade of May mainly along the lake banks (Tigrovy Khvost, Zhiltirbas, Macbalkul, Karamish, Sudochiy). Control operations, which had started on 10th April, were still in progress. So far, a total of 235 000 ha have been treated (165 000 ha against DMA, 50 000 ha against CIT and 20 000 ha against LMI), mainly in Kashkadarya (101 000 ha) and Surkhandarya (55 000 ha) provinces.

• **FORECAST**

During the forecast period, DMA life cycle will come to an end. CIT and LMI hopper development will continue and fledging of the two species will start by the end of the forecast period.

Announcements

Locust warning levels. A colour-coded scheme indicates the seriousness of the current situation for each of the three main locust pests: green for calm, yellow for caution, orange for threat and red for danger. The scheme is applied to the Locust Watch web page dedicated to the current locust situation ("Locust situation now!") and to the regional monthly bulletin header. The levels indicate the perceived risk or threat of current locust infestations to crops and appropriate actions are suggested for each level.

Locust reporting. During calm (green) periods, countries should report at least once/month and send standardized information using the national monthly bulletin template. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks and upsurges, updates should be sent at least once/week. Affected countries are also encouraged to prepare decadal bulletins summarizing the situation. All information should be sent by e-mail to CCA-Bulletins@fao.org. Monthly information received by the 5th of each month will be included in the CCA Locust Bulletin to be issued by mid-month; otherwise, it will not appear until the next bulletin. Reports should be sent even if no locusts were found or if no surveys were conducted.

May 2017 events and activities

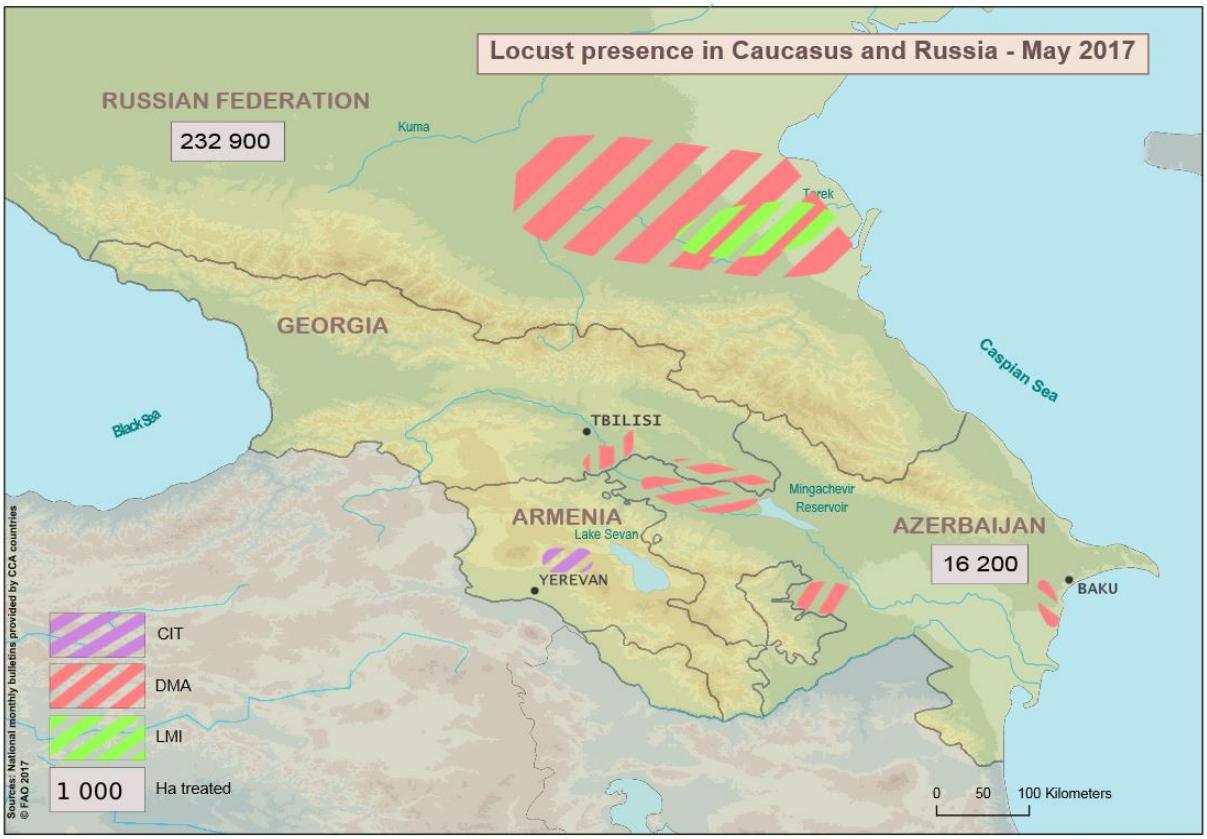
- **Practical Guidelines on locust pests in CCA:** English translation reviewed by the author.
- **Practical Guidelines on risk reduction related to locust control**: draft under preparation.
- **Training-of-trainers on locust management:** One-day briefing session on locust spraying and risk reduction held in Kyrgyzstan on 15 May in Jalal-Abad to the benefit of 11 staff and local manpower.
- **Automated System for Data Collection (ASDC):** to be operationally used in as much CCA countries

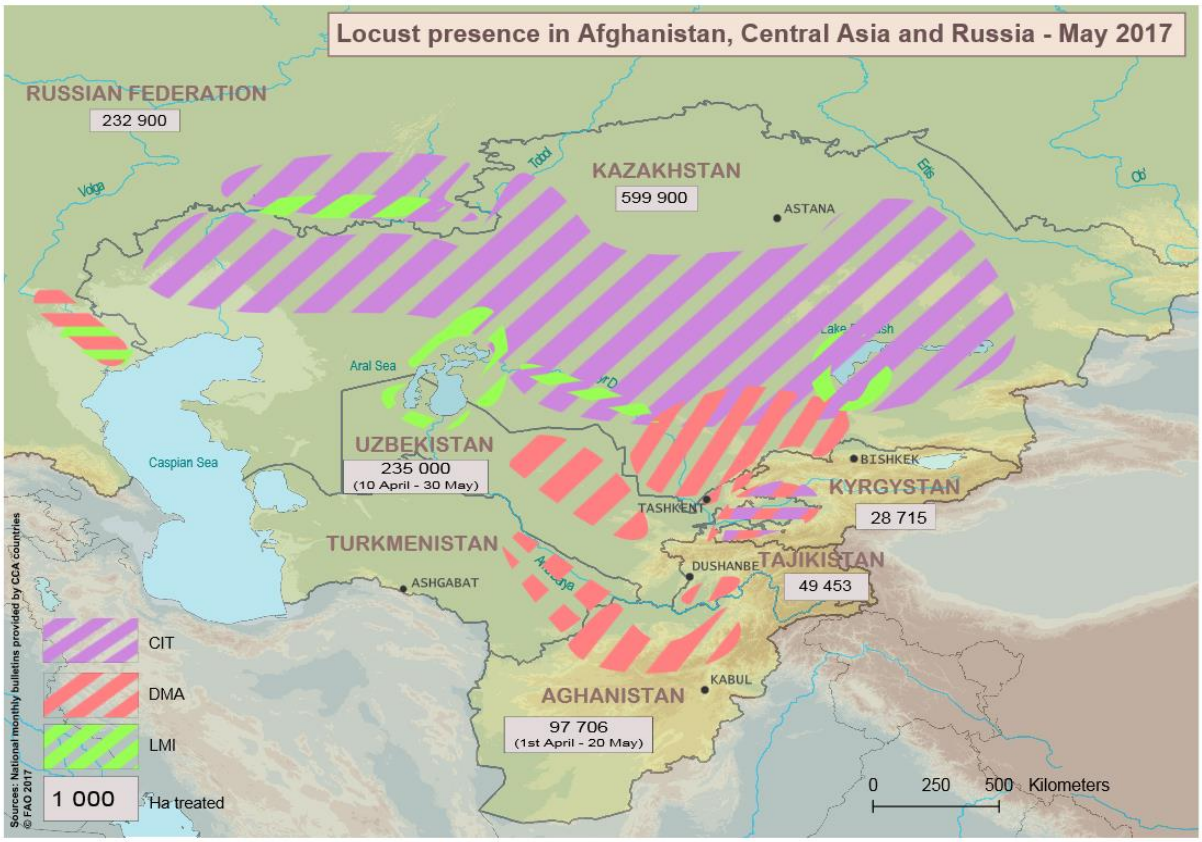
as possible, using either tablets, smartphones or web-operator application on computers.

- **Tablets for ASDC use** under procurement/delivery to Afghanistan (36 units) and cancelled until further notice for Georgia (15 units).
- **Caucasus and Central Asia Locust Management (CCALM):** database for data analysis and forecast (advanced functions) under test during the 2017 locust campaign.
- **Joint or cross-border surveys:**
  - Cross-border survey between Kyrgyzstan (Batken) and Tajikistan (Sughd) involving nine Locust Experts (four Kyrgyz and five Tajik ones) and the FAO Agronomist (Plant Protection/Locusts) held on 3-8 May 2017.
  - Joint survey between Afghanistan and Tajikistan involving 10 Locust Experts (five/country) and the FAO Agronomist (Plant Protection/Locusts) held in Khatlon, Tajikistan on 26-31 May 2017.
- **Human Health and Environmental issues:** field monitoring missions carried out by the Human Health and Environmental Monitoring Teams, with FAO technical and operational support, held in Jalal-Abad on 22-26 May (Aksy district) and 31 May-4 June (Nooken district) in Kyrgyzstan and postponed in Tajikistan.
- **Procurement of locust survey and control equipment**: process ongoing in the framework of project GCP/INT/238/JPN to the benefit of Afghanistan, Kyrgyzstan and Tajikistan.

Forthcoming events and activities in June 2017

- **Practical Guidelines on locust pests in CCA:** draft under peer review.
- **Practical Guidelines on risk reduction related to locust control:** draft available in English.
- **Training-of-trainers on locust management:** one-day briefing sessions on locust spraying and risk reduction to the benefit of approx. 15 national Locust Experts per session scheduled in Kyrgyzstan and Tajikistan (at least one session/country in June).
- **Human Health and Environmental issues**:
  - Development of an integral system for health and environmental monitoring of locust control operations in Azerbaijan, including on-the-job training on monitoring techniques to the benefit of four technical staff and a medical doctor - Mission of the FAO International Consultant, Environmental Expert, scheduled on 4-14 June 2017.
  - Field monitoring missions to be carried out by the Human Health and Environmental Monitoring Teams in Kyrgyzstan and Tajikistan (at least one mission each in June).
- **Procurement of locust survey and control equipment**: process ongoing in the framework of project GCP/INT/238/JPN to the benefit of Afghanistan, Kyrgyzstan and Tajikistan.





Last updated in June 2017

For more information, visit: www.fao.org/locusts-cca/