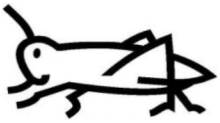
Food and Agriculture Organization of the United Nations

Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 50



FAO - Plant Production and Protection Division (AGP) *17 July 2017*

Situation level: THREAT in Kazakhstan (CIT)

Situation level: CAUTION in Afghanistan (DMA), Georgia (CIT), Kyrgyzstan, Russia (DMA) and Tajikistan (DMA and CIT)

Situation level: CALM in Armenia, Georgia (DMA), Turkmenistan and Uzbekistan

General Situation during June 2017 Forecast until mid-August 2017

Weather conditions were globally suitable for locust development throughout the region. As a result, DMA breeding was in progress in all Central Asian (CA) countries and probably also in Azerbaijan and Georgia. At the beginning of the forecast period, natural disappearance of this locust pest will progressively start from southern to northern countries. Italian Locust (CIT) hopper development was still in progress in Armenia and Russia while fledging started in Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan and already occurred in Tajikistan, where mating began. Fledging and breeding will generalize in all concerned countries during the forecast period and be followed by completion of the life cycle. Migratory Locust (LMI) hopper development was in progress in Kazakhstan, Russia and Uzbekistan and fledging started in Kazakhstan; fledging and breeding will generalize during the forecast period. In June, around 1.8 million ha were treated in CCA countries, for a total of 3.3 million ha since the start of the campaign, which represents an increase by 19% as compared to 2016.

Caucasus. DMA breeding was probably in progress in **Azerbaijan** and **Georgia**, where the numbers were low, and its life cycle is likely to be completed by the end of July. CIT hopper development was in progress in **Armenia** and fledging started in Georgia. Control operations were carried out on 4 437 ha in these two countries.

Central Asia. DMA adults only were present in late June in CA countries; disappearance of the species started in the southern countries while maturation, mating or egg-laying was in progress in northern countries. CIT mating was in progress in Tajikistan, fledging started in Kazakhstan, Kyrgyzstan and Uzbekistan and hopper development continued in Russia. LMI hopper development was almost completed in Uzbekistan, fledging started in Kazakhstan and hopper development was in progress in Russia. In June, a total of almost 1.79 million ha were treated against the three locust pests of which almost

50% against CIT (almost 40% against DMA and 10% against LMI).

Weather and Ecological Conditions in June 2017

In Caucasus (Armenia and Georgia), relatively warm but rainy weather prevailed. In Central Asia, the weather conditions continued to be suitable for hopper and adult development but vegetation started to dry out.

In **Caucasus**, the weather was relatively warm but rainy.

In Armenia, the weather was changeable. Average temperatures ranged from 19 to 32 °C in lowlands and from 15 to 22 °C at foothills during the day and from 10 to 19°C at night. Rains and thunderstorms, whose amount exceeded the average level, fell at foothills.

In Georgia, the temperatures ranged from 10.1 °C to 31.7 °C. The monthly rainfall amounted 66 mm, which is quite important for this period. The natural vegetation started to dry out –although later than usual- and there were green areas; overall, its density was medium to dense.

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

In Afghanistan, the weather was very hot and dry. The average daily temperature ranged from 23/25 °C to 35/37 °C, with a maximum up to 42 °C, and relative humidity varied from 37 to 85%. Vegetation was green to drying or dry depending on the regions.

In Kazakhstan, variable weather continued to prevail and temperature increased by about 5 °C as compared to June. In the South, the weather was variable with sunny days and some rains, whose amount ranged from 8 to 43 mm. The average daily temperature ranged from 12.6 to 34.5 °C with minimum of 9 °C (at night) and maximum of 40 °C. Relative humidity varied from 16 to 100%. North-westerly and north- and south-easterly winds prevailed at a speed of 1-10 m/s and up to 27 m/s in gusts. In the East, the weather was unstable with rains (57.0 mm). The average daily temperature was of 19.9 °C with minimum of 5.0 °C (at night) and maximum of 33 °C. Relative humidity was of 53.3%. South-easterly winds prevailed at a speed of 1-12 m/s. In the West, the weather was variable with sunny days and rains, whose amount ranged from 0.8 to 65.7 mm. The average daily temperature ranged from +10.2 °C to 30.5 °C, with minimum of 4.2°C and maximum of 34.0 °C. The wind direction was variable with southerly, westerly, north- and south-westerly winds at a speed of 0.9-10 m/s. In the North, the weather was variable with sunny and cool days, cloud cover and rains, whose amount ranged from 10.3 to 99.0 mm. The average daily temperature varied from 8.4 to 28.0 °C with minimum of 2.5 °C and maximum of 37.0 °C. Relative humidity ranged from 20 to 92%. North- and south-westerly winds prevailed at a speed of 1-8.0 m/s and up to 17.0 m/s in gusts.

In Kyrgyzstan, the average monthly temperature was 1-2 °C above the norm throughout the country. In the South, average temperatures ranged from 23 to 35 °C in the plains and from 17 to 19°C at foothills. In the plains, daily temperatures ranged from 27 to 38 °C and from 12 to 23 °C during the night. At foothills, daily temperatures ranged from 21 to 32 °C and from 6 to 27 °C during the night. Monthly precipitations were within the norm in the plains (13 to 39 mm) and at foothills (30 to 92 mm). In the North, average temperatures ranged from 22 to 34 °C. Daily temperatures ranged from 25 to 36 °C and from 10 to 21 °C during the night. Monthly precipitations were above the norm in some areas (31 to 42 mm) and within the norm at foothills (30 to 92 mm). Natural vegetation was dry with a medium cover and a height of 4-8 cm.

In the Russian Federation, the weather was variable in the Southern and North Caucasian Federal Districts (FD), where temperatures ranged from 18 to 35 °C and rains and thunderstorms occurred locally. In the

southern regions of the Central FD, temperatures were below average, ranging from 15 to 26 °C and some rains fell. In Volga FD, average temperatures ranged from 13 to 26°C and precipitations, sometimes as thunderstorms, were in the average. In the Siberian FD, daily temperatures ranged from 16 to 32 °C, within average long-term data.

In Tajikistan, weather was hot with exceptionally high temperatures (3 to 6 °C higher than last year at the same period). Minimal daily temperatures ranged from 36 to 39 °C at foothills and maximum exceeded 42 °C in the Khatlon valleys. From June 14 to 26, strong winds with short-term rains prevailed. As per forecast from the National Meteorological Centre, weather in July should be very hot with 44 °C in the south and up to 41 °C in the central part of the country and Sughd. In southern Khatlon, harvest of onions, potatoes and stone fruits was completed. Grain harvesting was in progress from the south to the north. Cotton continued to grow up.

In Turkmenistan, the weather was cloudy and windy during the first ten-day period and, in general, very hot with average temperature of 35 to 38 °C. Forecast indicated that July should be hotter.

In Uzbekistan, the weather was a bit less hot in June than in May (decrease by up to 7 °C) with temperatures of 38/42 °C during the day and of 21/27 °C at night. In the South, day temperatures ranged from 40 to 42 °C throughout the month while they were of 30/34°C at foothills and in mountainous areas from mid-month. Contrary to what happened in 2016, spring vegetation of ephemerals and ephemeroids was still green at foothills and in mountainous areas but desiccation started.

Area treated in June 2017

Afghanistan	97 706 ha (1st June-8 July)
Armenia	1 000 ha
Georgia	3 437 ha
Kazakhstan	1 073 900 ha
Kyrgyzstan	37 108 ha
Russia	337 880 ha
Tajikistan	47 447 ha
Turkmenistan	5 960 ha
Uzbekistan	195 000 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• **SITUATION**

During surveys carried out at the end of June on 38 840 ha in four villages of the Ararat Province, 26 532 ha were found infested by grasshoppers and Italian Locust (CIT) at an average density of 0-2 individuals/m². Out of that area, 1 000 ha infested by CIT 3rd and 4th instar hopper bands, at a density of 5-8 hoppers/m², were treated.

• **FORECAST**

CIT hopper development will come to an end and mass fledging will occur during the forecast period, followed by adult maturation and mating; egg-laying should not start by the end of July.

Azerbaijan

• **SITUATION**

No report was received for the month of June due to extensive field operations.

• **FORECAST**

DMA mating and egg-laying will continue at the beginning of the forecast period and will be probably completed before the end of July with natural disappearance of adults.

Georgia

• **SITUATION**

In June, an area of 60 000 ha was surveyed in Kakheti (east) and Kvemo Kartli (southeast) regions. Due to prevailing rainy conditions in May and June, DMA hopper development was hampered and populations may have been drastically reduced.

Fledging occurred probably in June followed by egg-laying. As these weather conditions did not allow carrying out usual DMA surveys, there was no reliable or detailed information on the actual DMA situation. CIT hoppers, at a density of 15-20 individuals/m², and imagos, at a density of about 5 adults/m², were observed at the following approximate proportion: late instar hoppers-65% and immature adults-35%. Some damages, mainly due to CIT, were locally reported on vineyards, sorghum, sunflowers, melons, watermelons, vegetables and winter pastures, which were still under threat. A total of 3 437 ha were treated with ground sprayers using two pyrethroids (alpha-cypermethrin and deltamethrin) and one organophosphate (chlorpyrifos).

• **FORECAST**

DMA egg-laying will come to an end and adults will progressively disappear. CIT hopper development will be completed and mass fledging will occur during the forecast period, followed by adult maturation and mating with egg-laying starting from late July. Control operations against CIT will continue in Kakheti and Kvemo Kartli regions.

CENTRAL ASIA

Afghanistan

• **SITUATION**

Monitoring of the DMA situation continued in June in ten provinces of northern Afghanistan, namely Badghis, Baghlan, Balkh, Faryab, Ghor, Herat, Kunduz, Samangan, Sar-i-Pul and Takhar. Ground control operations, using pyrethroids (in Emulsifiable Concentrate –EC- and Ultra-Low Volume –ULV- formulations) and one Insect Growth Regulator (in ULV formulation), were carried out on 97 706 ha against from 1st June to 8th July. While anti-locust campaigns end usually by mid-June, control operations against DMA adults continued this year due to results from cross-border survey between Afghanistan and Tajikistan (DMA presence near the border with likely swarm movements).

• **FORECAST**

DMA fledging will come to an end in early July and be followed by mass mating and egg-laying by mid-month with likely completion of the life cycle by the end of July.

Joint survey and control operations against DMA swarms will continue in Kunduz and Takhar provinces (near Tajik border).

Kazakhstan

• **SITUATION**

Survey and control operations against DMA hopper populations continued in June on 75 100 ha and 99 600 ha (including areas with infestations above the economic threshold - ET- identified in May) respectively. Overall, hopper surveys were carried out on almost 2.2 million ha during the 2017 locust campaign, of which 923 700 ha were infested, including 632 900 ha above ET (29%); a total of 610 900 ha have been treated against DMA hopper bands up to 27th June.

Spring/summer surveys of CIT hopper bands continued in June covering more than 8.6 million ha, of which 1 421 600 ha were infested including 722 700 ha (8.3%) above ET. CIT fledging started in the South, where 5th instar hoppers and imagos were observed; elsewhere (central, western and eastern regions), hopper development was in progress and 3rd to 5th instar hoppers were present. The most infested provinces were in the South (Almaty, 73 400 ha infested above ET), in the centre (Karaganda, 91 100 ha), in the North (Kostanay, 150 900 ha) and in the West (Aktobe, 159 600 ha; West Kazakhstan, 94 800 ha), representing 79% of the whole area infested above ET. In June, 782 200 ha were treated against CIT hopper bands.

The last egg-bed surveys of the Asian Migratory Locust (LMI) were carried out on 12 900 ha and egg-pods were found on 800 ha; the average number of eggs per pod ranged from 18 to 95 and 0.2 to 30% of

egg-pods were damaged. LMI hopper surveys continued and concerned almost 1.9 million ha of which 318 200 ha were infested by 3rd to 5th instar hopper bands and imagos, including 207 500 ha (11%) above ET. West Kazakhstan and Almaty were the most infested oblast (132 100 ha and 83 900 ha above ET, respectively). In June, 192 100 ha were treated against LMI hopper bands.

As a whole, 1 073 900 ha were treated against the three locust pests in June.

• **FORECAST**

DMA mating and egg-laying will continue and adults will start disappearing in South-Kazakhstan while mating and egg-laying will start in Zhambyl during the first part of the forecasting period. CIT fledging will continue in southern and western regions and be followed by mating and egg-laying while hopper development will come to an end and fledging will start in the North. LMI mating and egg-laying will occur in southern and western regions while hopper development will come to an end and fledging will generalize in the North.

Kyrgyzstan

• **SITUATION**

During DMA surveys carried out on 14 015 ha in the three western provinces, 11 562 ha were found infested by imagos at a density of 3-25 adults/m², of which 2 735 ha in Jalal-Abad, 4 267 ha in Batken and 4 560 ha in Osh. DMA populations were also observed in Chui. Mating and mass egg-laying came to an end. During this 2017 locust campaign, the two most infested provinces were Jalal-Abad and Batken. Mixed infestations of DMA and CIT continued to be observed in these three provinces. CIT surveys were also carried out on 28 433 ha in three central and northern provinces; a total of 20 754 ha were infested by CIT hoppers and imagos at a density of 5-40 individuals/m², of which 1 710 ha in Chui (with density reaching locally 50-300 hoppers/m²), 4 000 ha in Talas and 15 044 ha in Naryn. Fledging and egg-laying were in progress. Control operations against CIT infestations came to an end in Chui and Talas provinces. Ground control operations with vehicle-mounted Micronair and using pyrethroids and organophosphates were carried out on 37 108 ha against DMA (15 897 ha) and CIT (21 211 ha) infestations.

• **FORECAST**

No further DMA development is expected this year. CIT control operations will continue in Naryn until 20th July.

Russian Federation

• **SITUATION**

During locust surveys, 583 580 ha were found infested mainly by hopper bands (up to 96%); in some areas hopper populations were mixed with fledglings. DMA fledging started from mid–June. CIT and LMI hopper development continued and 3th and 4th instar hoppers were observed. Grasshopper infestations were also present on 894 990 ha, including 81 820 ha above ET. As a whole, the grasshopper and locust density was of: 0.6-2 hoppers/m² in the Central FD; 28-600 hoppers /m² and 197.5-200 adults/m² in the Southern FD; 31.8-500 hoppers/m² and 27.5-200 adults/m² in the North Caucasus FD; 0.5-15.0/m² in the Volga FD; 0.8-4.0 hoppers/m² and 0.1-1.0 adults/m²in the Ural FD; 1.5-18.0 hoppers/m² and 2.5-90.0 adults/m² in the Siberian FD; and 4.5-27.0 hoppers/m² in the Far East FD. To be noted the particularly high densities of hoppers and adults (prevalence of DMA) in North Caucasus and Southern FD. A total of 337 880 ha were treated in June, mainly against hopper bands.

• **FORECAST**

DMA fledging will continue in July, followed by mating and egg-laying. CIT and LMI hopper development will come to an end and fledging will start by mid-July. The development of other grasshopper species will continue

almost everywhere.

Tajikistan

• **SITUATION**

DMA back and forth flights were observed between northern Sughd and Batken province, Kyrgyzstan. DMA egg-laying was completed by the end of June and summer egg-bed surveys started. CIT fledging occurred and mating was in progress in some areas but egg-laying has not been observed yet. Control operations continued and a total of 47 447 ha were treated against locust populations in June of which 85% against DMA (mainly in Khatlon and Sughd) and 15% against CIT (in Sughd).

• **FORECAST**

DMA natural disappearance will start and summer egg-bed surveys will continue, mainly in Khatlon. CIT mating will come to an end and egg-laying will start. Control operations will be pursued mainly against CIT in Sughd and probably also against grasshopper infestations in Gorno-Badakhshan.

Turkmenistan

• **SITUATION**

In June, survey operations were carried out on 49 765 ha. DMA adult populations were observed and treated on 5 960 ha in Balkan and Lebap provinces, near the Iranian and Uzbek borders respectively, with local movements facilitated by windy conditions. Grasshopper species (*Dericorys albidula* and *Sphingonotus satrapes*) were observed in Daşoguz, Ahal and Mary provinces, where a total of 28 840 ha were treated.

• **FORECAST**

No further development is expected this year. The 2017 locust campaign should be completed by mid-July.

Uzbekistan

• **SITUATION**

DMA adults were still present in mountainous areas (Samarkand, Navoiy and Tashkent provinces) but natural disappearance started elsewhere. CIT fledging was observed in the Aral Sea area from mid-June. LMI hopper development continued, reaching 4th and 5th instars. Control operations were still in progress using pyrethroids (Lambda-cyhalotrin) and neonicotinoids (Imidacloprid). In June, a total of 195 000 ha were treated (100 000 ha against DMA, 65 000 ha against CIT and 30 000 ha against LMI).

• **FORECAST**

DMA life cycle will come to an end during the forecast period. CIT will mature and mate with egg-laying starting from the 3rd decade of July. LMI fledging will occur during the 1st decade of July followed by adult maturation; mating is expected during the 3rd decade. Local control operations against CIT and LMI could continue in early July.

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.

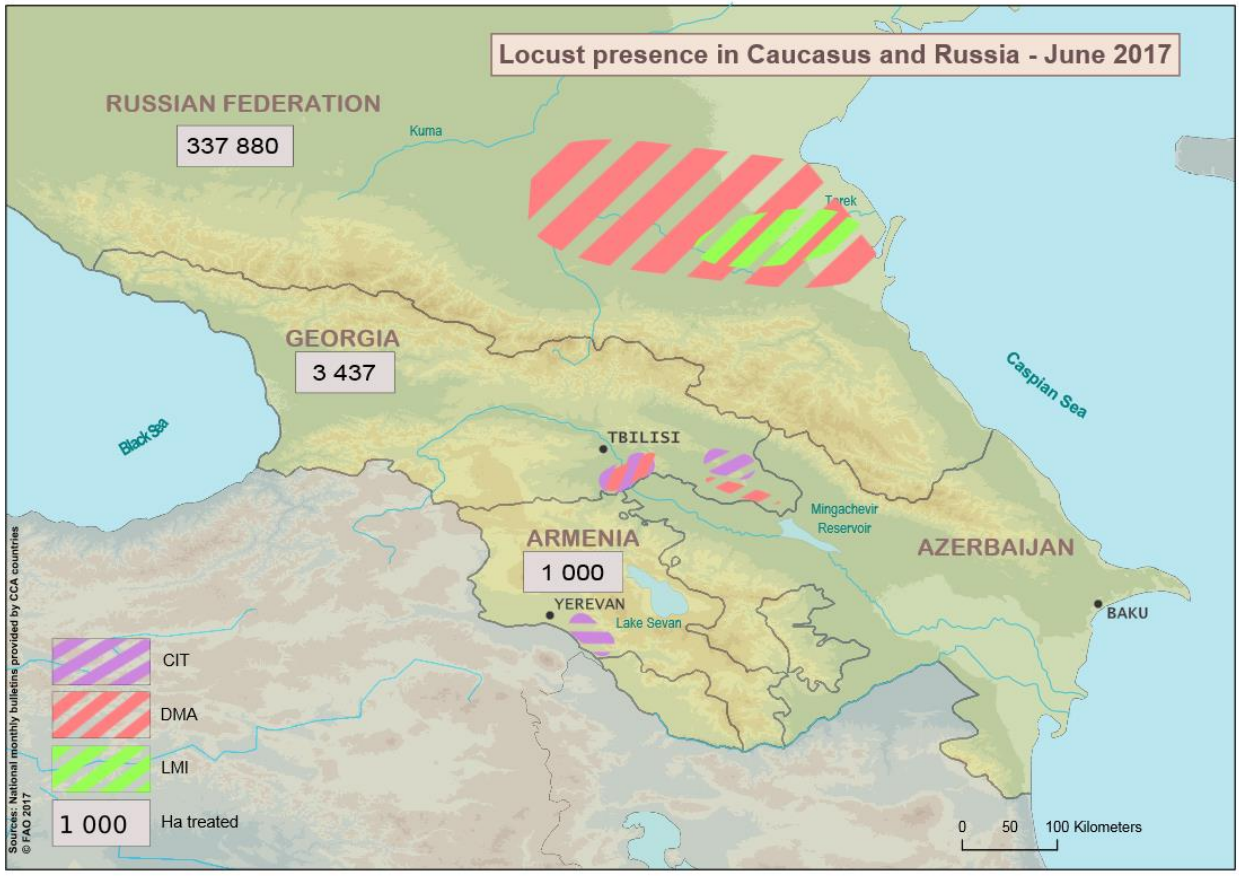
June 2017 events and activities

- **Practical Guidelines on locust pests in CCA:** peer-review of the draft.
- **Practical Guidelines on risk reduction related to locust control**: draft (English) still under preparation.
- **Training-of-trainers on locust management:** one-day briefing sessions on locust spraying and risk reduction held to the benefit of 29 staff and local manpower in Kyrgyzstan (Osh, 8 June and Batken, 21 June) and of 14 participants in Tajikistan (Sughd, 15 June).
- **Tablets for ASDC use** under procurement/delivery to Afghanistan (36 units).
- **Human Health and Environmental issues:**
  - Field monitoring of impact of locust control operations by the Human Health and Environmental Monitoring Teams: three monitoring missions carried out in Kyrgyzstan (Jalal-Abad, 31 May-4 June; Osh, 13-17 June and 27 June-1 July); and one mission in Tajikistan (Sughd, 15-19 June).
  - Development of a 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, Mr Harold Van der Valk, held on 4-14 June 2017.

- **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 July 2017

- **Practical Guidelines on locust pests in CCA:** peer-review of the draft.
- **Practical Guidelines on risk reduction related to locust control:** draft available in English.
- **Training-of-trainers on locust management**:
  - Last one-day briefing sessions on locust spraying and risk reduction to the benefit of approx. 15 national Locust Experts per session scheduled in Naryn, Kyrgyzstan, in early July.
  - Refresher course/on-the-job training on locust spraying and risk reduction to the benefit of three Afghan Master-Trainers scheduled on 19-22 July 2017 in Georgia (Dedoplistskaro and Sighnaghi municipalities) with the assistance of the National Food Agency of the hosting country.
- **Human Health and Environmental issues**: last field monitoring mission to be carried out by the Human Health and Environmental Monitoring Team in Naryn, Kyrgyzstan, in mid-July.
- **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.
- **Annual Technical Workshop on Locusts in CCA:** final confirmation of funds' availability expected during the month and, if confirmed, arrangements to be started.



Last updated in July 2017

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