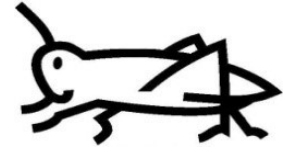




## LOCUST BULLETIN No. 76



FAO - Plant Production and Protection Division (NSP)

15 July 2021

**Situation level: DANGER in Georgia (CIT)**

**Situation level: CAUTION in Armenia (CIT), Kyrgyzstan (DMA and CIT), Azerbaijan and Uzbekistan (CIT and LMI), Kazakhstan and Russian Federation (DMA, CIT and LMI)**

**Situation level: CALM elsewhere or for the other locust pests**

### General Situation during June 2021

#### Forecast for July 2021

Moroccan Locust (DMA) fledging, mating and egg-laying continued in Caucasus and Central Asia (CCA) except for the southern regions of Central Asia (CA) where its lifecycle came to an end. Italian Locust (CIT) fledging started in Georgia and in CA countries. Migratory Locust (LMI) hopper development continued in Azerbaijan, Kazakhstan, Russian Federation and Uzbekistan. A *dangerous* situation was reported for CIT in Georgia while in other countries, the situation was classified as *caution*. During the forecast period, DMA breeding will continue in Kazakhstan and Russian Federation while CIT development will continue in Caucasus, Russian Federation and Kazakhstan. LMI hopper development will continue in northern oblasts of Kazakhstan and Russian Federation and fledging will occur in other regions. In total, more than 1 600 000 hectares (ha) have been treated in CCA since the beginning of the 2021 campaign till the end of June, which is 50 percent higher than in the same period in 2020.

**Caucasus.** DMA fledging, mating and egg-laying started in the region. CIT and LMI hopper development continued in **Azerbaijan**. Serious situation for CIT have been reported by **Georgia** for the second month in a row, while in **Armenia**

and **Azerbaijan** it was classified as “caution”. Control operations covered 61 897.5 ha, the major part being in **Georgia** (52 630 ha).

**Central Asia.** DMA natural cycle came to an end in most provinces of **Afghanistan, Tajikistan, Turkmenistan** and **Uzbekistan**, where control operations are over. DMA mating and egg-laying was in progress in **Kazakhstan** and **Kyrgyzstan**. CIT fledging, mating and egg-laying continued in all CA countries. LMI hopper development continued in **Kazakhstan, Russian Federation** and **Uzbekistan**. According to received reports, over 1 520 000 ha were treated since the start of the campaign, as of late June, in CA countries and Russian Federation against locusts and grasshoppers.

### Weather and Ecological Conditions in June 2021

In **Caucasus**, the weather conditions were warm and within the norm. Natural vegetation was drying out.

In **Armenia**, average temperature in June was 22-24°C and there was no precipitation in most areas. Natural vegetation in Ararat valley and mountainous areas was dense and 10 to 40 cm tall.

In **Azerbaijan**, hot days, typical for summer, prevailed in June and average temperature and precipitation were close to the annual norm. Average monthly temperatures in Ganja-Kazakh zone were 18-20°C (14-16°C at night, 25-28°C at day, up to 30°C in some days), which is about



the climatic norm. Natural vegetation in Djeyranchel had medium density and started to dry up. Winter cereal crops were in their full maturity and harvesting started.

In Georgia, the weather was generally hot and without any precipitation, average monthly temperature ranged from 20°C to 41°C. Vegetation in most locust infested areas had medium density and started to dry up.

In **Central Asia**, the weather was highly variable, with temperatures and rainfall close to the annual norm. First decade of June was warmer than the norm and the highest temperatures were recorded in some provinces of Afghanistan and southern part of Kazakhstan. Precipitation higher than the norm fell in northern part of Kyrgyzstan and some oblasts of Kazakhstan.

In Afghanistan, the weather was generally dry and hot without any precipitation. High temperatures were recorded in the provinces of Nangarhar, Kunduz, Baghlan, Balkh, Jawzjan, Kandahar and Helmand, where air temperature in some days reached up to 48°C. Natural vegetation dried up in all provinces except Ghor and Badakhshan.

In Kazakhstan, the weather was warmer than the norm, but with lower than the norm precipitation. In the South, the weather was unstable, with both sunny and cloudy days with some rains. Average daily temperature ranged from 7.5 to 37°C with a maximum of 49°C and a minimum of 8.9°C (at night). Relative air humidity varied between 18 and 92%. Monthly precipitation in these regions was only 0.9 mm in Kyzylorda oblast and up to 20 mm in Almaty oblast. In the East, the weather was changeable with sunny and cloudy days and fluctuations of air temperature. The average daily temperature was around 18.1°C with a maximum of 34°C and a minimum of 6°C. Relative air humidity was 57.9%. Precipitation was 71 mm, which is 70% higher than the norm. In the West, the weather was variable with sunny and cloudy days and some rains. Average daily temperature ranged from 16.5°C to 42.0°C, with a maximum of 44°C and a minimum of 2.6°C. Precipitations in the form of rain ranged from 5 mm (Atyrau oblast) up to 69 mm (West Kazakhstan oblast). In the North, the weather was unstable with gusty winds and rains. Average daily temperature ranged from 11.4°C to 25.3°C, with a maximum of 37.5°C and a minimum of 4.8°C. Precipitations fell from 13 mm (Kostanay oblast) up to 50 mm (Pavlodar oblast).

In Kyrgyzstan, in all oblasts, the weather was unstable with temperature fluctuations and short rains, which was not suitable for locust development, especially in northern oblasts (Naryn, Talas and Chuy). In Jalal-Abad oblast, average

temperature was 23-25°C, with day temperatures ranging from 24 to 37°C and at nights from 11 to 22°C. In Chuy oblast, average temperature was 22-24°C, with day temperatures ranging from 21 to 35°C and at nights from 9 to 22°C. Natural vegetation in the locust infested areas was of medium density, mainly consisting of drying ephemerals, with 2-4 cm of height.

In the Russian Federation, the weather was variable but generally suitable for locust development in all Federal Districts (FD). In the Central FD, temperature was higher than usual ranging from 20 to 32°C and reaching 33°C in the warmest days. Rainfall ranged from 40 to 90 mm. In the South FD, the weather was warmer than usual with average monthly temperature of 21-23°C, reaching 36°C in Astrakhan oblast and 39°C in the Republic of Kalmykiya. Rainfall ranged from 50 to 100 mm. In North Caucasus FD, average temperature was 20°C, with maximum of 32°C, and precipitation ranged from 50 to 150 mm, which is above the norm. In Volga FD, the weather was warm, average temperatures varied from 20° to 25°C with a maximum of 36°C and rain ranged from 20 to 80 mm. In the Ural FD, the weather was warmer than the norm. Average temperatures ranged from 18° to 20°C reaching 34°C and rainfall from 10 to 50 mm. In the Siberian FD, the average temperatures was 15-17°C, reaching up to 31°C the warmest days, and rainfall ranged from 40 to 100 mm. In the Far East FD, average temperatures ranged from 14° to 18°C and rainfall from 50 to 80 mm.

In Tajikistan, temperature in the beginning of June was higher than the annual norm, reaching up to 43°C in some districts of Khatlon region, while at the end of the month it was lower than the norm. Precipitation in this month fell only in foothills and mountainous areas.

In Turkmenistan, the weather in June was hot and dry, without precipitation. Average daily temperature was 30-35°C, sometimes reaching 40-45°C. Natural vegetation was of low density and dried up. Wheat crop was harvested in June.

In Uzbekistan, air temperature was higher than the norm by 1-1.5°C in western and north-western parts of the country – in the Autonomous Republic of Karakalpakstan, Khorezm and northern part of Navoi oblasts. Average temperature in these regions ranged from 12 to 22°C at nights and 27 to 40°C during the days. In Tashkent, Syrdarya, Jizzakh, Samarkand, Bukhara and southern part of Navoi oblasts, temperature

varied from 12°C to 22°C at nights and from 25°C to 39°C at days. Temperature in Kashkadarya and Surkhandarya oblasts varied from 12-25 °C at night to 25-41°C at days. In Fergana valley, temperature varied from 12-22°C at nights to 25-39°C at days. Precipitation was close to the annual norm in most areas.

## Area treated by the end of June 2021

Afghanistan	78 383 ha
Armenia	900 ha
Azerbaijan	14354 ha
Georgia	65 860 ha
Kazakhstan	548 400 ha
Kyrgyzstan	28 600 ha
Russian Federation	264 530 ha
Tajikistan (till 21 May)	79 282 ha
Turkmenistan	43 273 ha
Uzbekistan	478 070 ha
<b>Total</b>	<b>1 601 692 ha</b>

## Locust Situation and Forecast

(see also summary on page 1)

### CAUCASUS

#### Armenia

##### • SITUATION

By the end of June, 42 455 ha were surveyed in total. Control operations were conducted on 900 ha against CIT hopper bands in Tavush region.

##### • FORECAST

*CIT development will continue in July till mid of August in Vayots Dzor, Ararat and Armavir regions.*

#### Azerbaijan

##### • SITUATION

DMA fledging, mating and egg-laying occurred in most of the infested areas while CIT and LMI hopper development continued. Treatments against DMA concerned 5 674 ha in June, reaching 11 660.5 ha since the start of campaign. Treatments against CIT and LMI started in June and covered 2 430 ha against CIT and 263.5 ha against LMI. In total, control operations were carried out over 14 354 ha since the start of the campaign, which is similar to 2020 at the same period.

##### • FORECAST

*Higher temperatures expected in July may accelerate locust development. DMA egg-laying will finish followed by die*



*-off. CIT fledging, mating and egg-laying will take place in July and LMI will continue with mating and egg-laying. Control operations against CIT and LMI will continue.*

#### Georgia

##### • SITUATION

In total, 195 000 ha have been surveyed since the start of campaign. Surveys conducted in June revealed that CIT hopper density in the border areas between Georgia, Armenia and Azerbaijan was very high, from 10 to 500 individuals per m<sup>2</sup>. Since the start of the campaign, 65 860 ha have been treated, which is almost 2.5 times higher than in the same period of 2020. Control operations against CIT continued and concerned 52 630 ha, with significant areas treated in Kvemo Kartli (27 060 ha) and Kakheti (16 020 ha) regions. In addition to locust species, control operations also concerned bush crickets (*Psorodonotus caucasicus*) to prevent crop damages.

##### • FORECAST

*DMA egg-laying will finish and the natural cycle come to an end. CIT mass fledging and mating followed by egg-laying is expected in July. CIT swarms will continue to migrate towards agricultural crops, threatening people's livelihood.*

### CENTRAL ASIA

#### Afghanistan

##### • SITUATION

DMA adults continued fledging and egg-laying in most provinces while DMA hoppers were in their 5<sup>th</sup> instar in some mountainous areas, such as Badakhshan province. Control operations continued in eleven provinces (Badghis, Baghlan, Balkh, Dikundi, Faryab, Ghor, Herat, Kunduz, Nangarhar, Sar-e-pul and Takhar) and started in four others (Kabul, Laghman, Logar and Parwan), covering in total 15 623 ha during the month. By the end of June, the total treated area since campaign start reached 78 383 ha. Largest treated areas are in Samangan (19 184 ha), Takhar (14 350 ha) and Kunduz (13 971 ha) provinces, representing more than 60% of the total treated areas.

DMA populations were reported from Dasht-e-Shiwa pasture areas of Arghanjkhah district of Badakhshan province at a very high altitude of 2600 m, where DMA was detected for the first time ever. The hoppers were in their 3<sup>rd</sup> and

4<sup>th</sup> instars by the end of June. In general, the situation in June was complicated in terms of security in almost all locust infested areas. Due to this, some planned activities, including training sessions and summer surveys of egg-laying sites could not be conducted so far.

- **FORECAST**

*Locust control operations have finished in the majority of provinces while they will continue in July in Ghor, Faryab and Badakhshan, if security situation allows. Implementation of the summer survey of egg-laying sites will also depend on the security situation.*

### **Kazakhstan**

- **SITUATION**

DMA adult survey during mating and egg-laying continued in Turkestan and Jambyl oblasts on an area of 743 400 ha, out of which 75 200 ha were infested, including 71 700 ha with densities up to 5 adults/m<sup>2</sup> and 3 500 ha with densities of up to 10 adults/m<sup>2</sup>.

CIT and LMI hopper surveys came to an end in most of regions but still continuing in northern and eastern regions, as well in Aktobe oblast. CIT hopper surveys were conducted on 11 559 100 ha, out of which 863 900 ha were found infested, with an average density of up to 5 hoppers/m<sup>2</sup> on 498 500 ha, from 5 to 10 hoppers/m<sup>2</sup> on 278 500 ha and more than 10 hoppers/m<sup>2</sup> on 86 800 ha. All areas with CIT densities exceeding the economic threshold, representing 365 300 ha, were treated.

With regard to LMI, spring egg-pod surveys were finished on 10 June and covered 80 500 ha, out of which 5 100 ha were infested. Average density of up to 1 egg-pod/m<sup>2</sup> was found on 2 600 ha, from 1 to 5 egg-pods/m<sup>2</sup> on 2 500 ha and from 5 up to 10 egg-pods/m<sup>2</sup> on 10 ha. The average number of eggs in egg-pods ranged from 40 to 110. From 2.9 to 52% of egg-pods were found parasitized. LMI hopper surveys covered 3 042 500 ha, out of which 158 500 ha were infested, with average density up to 5 hoppers/m<sup>2</sup> on 65 000 ha, up to 10 hoppers/m<sup>2</sup> on 79 500 ha and above 10 hoppers/m<sup>2</sup> on 14 000 ha. The areas with LMI hopper densities exceeding the economic threshold, over 93 500 ha, were treated.

- **FORECAST**

*DMA die-off will occur in Turkestan oblast while egg-laying will continue in Jambyl. CIT fledging followed by mating and egg-laying will take place in northern oblasts, while in the southern and western oblasts mating and egg-laying will start*



*in the third decade of July. LMI fledging is expected in first decade of July and mating and egg-laying will take place in the third decade of July in the southern and western oblasts. Hopper development will continue in the northern oblasts followed by fledging in the third decade of July.*

### **Kyrgyzstan**

- **SITUATION**

DMA hopper and adult survey covered 23 635 ha in June, out of which 18 417 ha were infested with the average density from 6 to 40 individuals/m<sup>2</sup>. DMA mass egg-laying took place at the end of the month and control operations ended. CIT hopper surveys were conducted on 1 600 ha in June, out of which 1 230 ha (in Chuy oblast) were found infested with an average density from 5 to 15 hoppers/m<sup>2</sup>. Most of the hopper populations were in the 4<sup>th</sup> and 5<sup>th</sup> instars. In total, 28 500 ha have been treated against DMA and 100 ha against CIT since the start of the campaign. Control operations were carried out by ULV vehicle-mounted sprayers AU8115M (8 units) and 5 EC sprayers mounted in tractors using the same pesticides as the previous month.

- **FORECAST**

*DMA egg-laying will continue in July. CIT hopper development will continue in Chuy, Talas and Naryn oblasts. Control operations against CIT will be pursued in Chuy oblast and as soon as stable warm weather establishes in Naryn and Talas oblasts, control operations also will start there.*

### **Russian Federation**

- **SITUATION**

Surveys of locust and grasshoppers have been conducted on a total area of 5 142 710 ha since the start of the campaign out of which 791 140 ha were found infested. Locust survey concerned 3 854 970 ha, out of which 351 060 ha were found infested with hoppers of various instars and 8 350 ha with imago. So far, control operations against locusts and grasshoppers have been carried out on a total area of 264 530 ha from the start of campaign, using 414 sprayers, including 397 ground sprayers and 17 small aircraft. Joint locust surveys were conducted between the several neighbouring oblasts and republics, in the South and North-Caucasus FDs.

- **FORECAST**

*In July, hopper development will be finished in all areas and surveys will concern only adults. Control operations will continue in most regions.*

### **Tajikistan**

- **SITUATION**

No report was received for the month of June.

- **FORECAST**

*Based on the situation in the neighbouring countries, DMA natural cycle came to the end and CIT egg-laying will take place in Sughd region.*

### **Turkmenistan**

- **SITUATION**

DMA egg-laying survey covered 50 295 ha in June, in all regions including foothill areas of Akhal (10 973 ha), Balkan (2 535 ha), Lebap (16 629 ha), Mary (16 103 ha) and desert areas of Dashoguz (4 055 ha), for a total of over 223 900 ha since the start of the campaign. Control operations were carried out on 10 536 ha in June and on 43 273 ha since the start of campaign. Chemical treatments were carried out using ULV vehicle-mounted sprayers “Wind 634 Flexigun”, AU8115, Ulvamast V4, by applying insecticides Fascord EC (alpha-cypermethrin) and Demond (deltamethrin). LMI populations observed in Akhal, Balkan and Lebap regions were with very low density, not requiring any treatment.

- **FORECAST**

*Campaign against DMA will finish in July. CIT, LMI and grasshoppers survey will continue.*

### **Uzbekistan**

- **SITUATION**

By the end of June, control operations against DMA and CIT ended in Kashkadarya, Surkhadarya, Samarkand, Jizzakh, Navoi, Bukhara, Sirdarya, Tashkent oblasts and Fergana valley. CIT and LMI fledging occurred in the Autonomous Republic of Karakalpakstan. The campaign continued and the total treated area reached 478 070 ha by the end of June. This included: 304 920 ha against DMA, mostly in Kashkadarya (113 970 ha) and Surkhadarya (98 419 ha); 75 139 ha against CIT, mostly in Karakalpakstan (35 606 ha) and Navoi (12 686 ha); 5 300 ha against LMI, including in Karakalpakstan (4 860 ha) and Jizzakh (440 ha); and besides locusts, 63 116 ha against non-swarming grasshoppers. In June, 130 tractor sprayers, 168 backpack sprayers, 1 ultra-light aircraft, 1 large aircraft, 30 different



ULV sprayers and 48 water lorries were used. Insecticides based on the following active ingredients were applied: lambda-cyhalothrin, imidacloprid, alpha-cypermethrin and fipronil.

- **FORECAST**

*DMA natural cycle will come to an end. In Karakalpakstan, CIT and LMI mating and egg-laying will continue.*

## **Announcements**

**Locust warning levels.** A color-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](mailto:CCA@Bulletins@fao.org). Monthly information received by the 1<sup>st</sup> 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.

### **Events and activities in June 2021**

- **National sessions on locust management (for staff) and Briefing sessions on spraying and pesticide risk reduction (for staff/local manpower):**
  - Afghanistan: two briefing sessions initially envisaged in June, in Balkh and in Herat, postponed to July due to in-country Covid-19 travel restrictions;
  - Azerbaijan: three training sessions of one day each delivered to the benefit of 51 Locust/Plant Protection

Expert, on 4 June in Jeyranchol steppe, Agstafa region (15 persons), 14 June Kudru steppe, Saatli region (18 persons) and 24 June in Eldar steppe, Samukh region (18 persons);

- Georgia: second of the two national sessions delivered to the benefit of 13 Locust/Plant Protection Expert in Kakheti on 22-25 June;
- Kyrgyzstan: fifth and last briefing session delivered to the benefit of 15 staff/local manpower on 8-10 June, At-Bashy and Ak-Tala districts, Naryn;

- **Practical Guidelines (PG):**

- PG on three Locusts Pests in CCA: Russian/English versions handed-over to Georgia and Russian Federation; editing/review of technical terminology finalized in Georgian and in progress in Azeri and in Kyrgyz;
- PG on pesticide risk reduction for locust control in CCA: Russian/English versions handed-over to Georgia and Russian Federation; editing/review of technical terminology finalized in Georgian and in progress in Azeri and Uzbek.

- **Two posters on Italian and Moroccan Locusts** (biology, ecology, monitoring) handed-over for Kyrgyzstan (100 units in Kyrgyz and 100 in Russian) and finalized into Georgian, Turkmen and Uzbek.

- **Human Health and Environmental Monitoring Teams:**

- Azerbaijan: three monitoring missions carried out, in Jeyranchol steppe on 1-6 June, in Kudru steppe on 11-16 June and in Eldar steppe on 22-27 June (out of the four envisaged on June/July);
- Georgia: first monitoring mission carried out in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli on 2-17 June (out of the three missions planned to August);
- Kyrgyzstan: fourth and fifth (last) monitoring missions carried out in Manas and Kara-Buura districts, Talas, on 31 May-5 June, and in At-Bashy and Ak-Tala districts, Naryn, on 14-19 June.

- **Procurement:**

- Equipment delivered: tablets to Armenia, Azerbaijan and Uzbekistan (GCP/GLO/963/USA, GCP/INT/384/JCA); and tires for motorbikes and vehicles to Tajikistan (TCP/TAJ/3806);
- Procurement in progress, at various stages, for:



entomological kits and binoculars, motorbikes, vehicles for survey/control, tractors, ULV and EC sprayers, water tank lorries, minibus, camping equipment, Protective Personal Equipment (PPE) and test-mate kits.

**Forthcoming events and activities in July 2021:**

- **National sessions on locust management (for staff) and Briefing sessions on spraying and pesticide risk reduction (for staff/local manpower):**

- Afghanistan: two briefing sessions envisaged in July, in Herat (10-12 July) and in Balkh (15-17 July);
- Azerbaijan: fourth and last training session scheduled in Ajinohur steppe (Sheki region) on 5 July.

- **Practical Guidelines (PG):**

- PG on three Locusts Pests in CCA: Russian versions to be handed-over to Azerbaijan; Georgian version to be published; and editing/review of technical terminology to be finalized in Azeri;
- PG on pesticide risk reduction for locust control in CCA: English/Russian versions to be handed-over to Azerbaijan; Georgian version to be published and editing/review of technical terminology to be finalized in Azeri and Uzbek; Translation into Turkmen to be started.

- **Two posters on Italian and Moroccan Locusts** (biology, ecology, monitoring) to be published in Georgian, Turkmen and Uzbek.

- **E-Committee on ASDC and CCALM:** meeting scheduled for 28-29 July with national staff responsible for ASDC and CCALM use and management and FAO Experts, in order to discuss forecast algorithms and visualization of GIS products.

- **Human Health and Environmental Monitoring Teams:**

- Azerbaijan: fourth and last monitoring missions envisaged in Ajinohur steppe (Shaki, Gakh) on 2-7 July 2021;
- Georgia: second monitoring mission scheduled in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli on 1-18 July (out of the three missions until August);

- **Procurement** - ongoing, with expected delivery of: tablets to Turkmenistan (GCP/INT/384/JCA); ULV sprayers to Uzbekistan (GCP/INT/384/JCA); motorbikes to Afghanistan (GCP/INT/384/JCA); reagents for test-mate kits for Tajikistan (GCP/INT/384/JCA); PPE kits to Georgia (TCP/GEO/3801) and Uzbekistan (GCP/INT/384/JCA).

