Food and Agriculture Organization of the United Nations

Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 91

FAO - Plant Production and Protection Division (NSP)
Locusts and Transboundary Plant Pests and Diseases Team (NSPMD)

17 August 2023

Situation level: DANGER in Russian Federation (DMA)

Situation level: CAUTION in Georgia and Kyrgyzstan (CIT), Kazakhstan and Russian Federation (CIT, LMI)

Situation level: CALM elsewhere or for the other locust pests

General Situation during July 2023
Forecast for August 2023

Moroccan Locust (DMA) natural cycle completed in all Caucasus and Central Asian (CCA) countries while mating and egg-laying continued in the Russian Federation. The Italian Locust (CIT) and the Asian Migratory Locust (LMI) started mating and egg-laying in CCA. The situation with DMA was considered *dangerous* only in the north Caucasus Federal District of the Russian Federation. It was classified as *caution* for CIT in Georgia and Kyrgyzstan, as well as for CIT and LMI in Kazakhstan and the Russian Federation. It became *calm* for other species or in the other countries. Summer surveys of adults and egg-laying sites continued in all countries. Control operations in July covered 513 121 hectares (ha) in CCA and in total 2 590 326 ha since the beginning of the 2023 campaign, which is 37% higher than during the last two campaigns (1 891 926 ha in 2022 and 1 898 300 ha in 2021). During the forecast period, DMA life cycle will be completed in the Russian Federation and CIT life cycle will come to an end in Caucasus, Kyrgyzstan and Uzbekistan. CIT and LMI mating and egg-laying will continue in Kazakhstan and the Russian Federation.

Caucasus. DMA mating and egg-laying ended in the region. In **Azerbaijan** and **Georgia** the situation with CIT required attention due to swarm flights while it was *calm* in **Armenia.** No LMI was observed this year in Azerbaijan. Due to the emergency situations announced in several districts in the south of the **Russian Federation** because of swarms attacking crops**,** the situation with DMA was considered as *dangerous*, while it was classified as *caution* for CIT in all areas and for LMI in the Russian Federation. Control operations in Caucasus and the Russian Federation were conducted on an area of 105 807.5 ha in July and on 217 411.5 ha from the start of the campaign, which is 32% lower than 2022 (288 882 ha). There were no locust treatments conducted this year in Armenia, and other Caucasus countries reported a decrease of treated areas, as compared to 2022. In August, CIT breeding will continue in the Caucasus countries as well as for both CIT and LMI egg-laying in the Russian Federation.

Central Asia. DMA natural cycle came to an end in all countries**.** CIT hopper development continued in **Kazakhstan** and **Kyrgyzstan,** where in some areas fledging and mating started. In **Uzbekistan**, CIT mating and egg-laying continued**.** Control operations were completed in **Afghanistan**, **Tajikistan**, **Turkmenistan** and **Uzbekistan**. Treatments against locusts and grasshoppers in July covered 407 314 ha, reaching 2 372 915 ha since the start of the 2023 campaign, which is 48% higher than in 2022 at the same period (1 603 044 ha). Although all countries reported an increase of infested and treated areas in 2023, the most significant increase occurred in Kazakhstan, as forecasted, and amounted to more than half of the whole treated area in CCA. For the forecast period, CIT breeding will continue in Kazakhstan and Kyrgyzstan, as well as LMI egg-laying in

Kazakhstan. Life cycle of LMI will come to an end in Uzbekistan.

Weather and Ecological Conditions in July 2023

In **Caucasus** and the **Russian Federation**, the weather conditions were close to the norm.

In Armenia, the temperature was close to annual norm. In the mountainous areas, it was 6-9ºC at nights and 21-29ºC at days; in the valleys, it was 16-21ºC at night and 36-39ºC at days. Harvesting of winter cereals was completed in the valleys while it continued in the mountainous areas.

In Azerbaijan, the weather in July was close to annual norm in Djeyranchel steppe and higher than the norm in Kudri steppe, the main locust breeding areas. The temperature averaged 25-27ºC in Djeyranchel (19-24ºC at night, 28-33ºC at day, up to 35-39ºC in some days) and 27-29ºC in Kudri (20-25ºC at night, 31-36ºC at day, up to 38-40ºC during the hot days). The precipitation was close to annual norm. Harvesting of winter cereals was completed and the natural vegetation dried up in locust-infested areas.

In Georgia, during the first decade of July, the temperature was lower than the norm and the precipitation was higher than the norm. Such weather conditions slowed down CIT hopper development. The weather conditions during the second half of the month were close to annual norm. The average monthly temperatures ranged from 18ºC to 37ºC and precipitations was higher than the norm. Natural vegetation dried up in most pasture areas.

In the Russian Federation, the weather conditions in all Federal Districts (FD) were mainly close to the annual norm and suitable for locust development, except in the Siberian FD. In the Central FD, the average temperature varied from 14 to 25°C, reaching 29.5°C at maximum. Rainfall in the reporting period averaged 75 mm. In the South FD, the average monthly temperature was 21-30°C, reaching up to 35.6°C. Precipitation averaged 60 mm. In North Caucasus FD, the average monthly temperature was 20-27°C, with a maximum of 35°C, and precipitations averaged 40 mm. In Volga FD, the average temperatures varied from 16 to 25°C with a maximum of 34°C. The rainfall was lower than the norm and averaged 25 mm. In the Ural FD, the daily temperature averaged 21-25°C, reaching 41°C during the hottest days. Rainfall in this period averaged 17 mm. In the Siberian FD, the average daily temperature in July ranged from 18 to 22°C, with a maximum 33°C, which was lower the norm. Precipitation averaged 52 mm. Such weather conditions slowed down locust development. In the Far East FD, the

temperature averaged 12-19°C with a maximum of 28°C. Rainfall in this period averaged 28 mm.

In **Central Asia**, the weather conditions were generally close to the norm. Higher temperature than the norm was observed only in some parts of Kazakhstan and Uzbekistan. Precipitation was close to the norm in all areas, except in some regions of Kazakhstan, where it was lower than the norm.

In Afghanistan, the weather was hot and dry, close to norm.

In Kazakhstan, the weather was generally hot and the temperature was close to the norm while a deficit of precipitations was registered in some areas. In the South, the weather was hot, and the average daily temperatures ranged from 21 to 35°C with a maximum of 44°C and a minimum of 17°C. Monthly precipitation was mostly lower than the norm varying from 0.1 to 30 mm. In the East, the temperature was higher than the norm, while the precipitation was lower than the norm. The average daily temperature was around 22°C with a maximum of 42°C and a minimum of 12°C. Precipitations ranged from 4.8 mm to 32 mm. In the West, the average daily temperature ranged from 19.5°C to 37.0°C, with a maximum of 45°C and a minimum of 14.5°C. Rainfall ranged from 4 (lower than the norm) to 152 mm (significantly higher than the norm) in various areas. In the North, the weather was changeable, with strong winds and rainfalls. Average daily temperature ranged from 17.8°C to 30.5°C, with a maximum of 37°C and a minimum of 6.3°C. Precipitations varied from 2 to 59 mm, which was lower than the norm in most areas.

In Kyrgyzstan, the average monthly temperature and precipitation were close to the norm. Temperature raised up to 39°C in the valleys during the days and up to 32°C in the mountainous areas, while it dropped down at nights to 11°C in the valleys and 3°C in the mountainous areas. In Osh region, the average temperature was 24-26°C, ranging from 23 to 39° C at day and from 14 to 25°C at night. Precipitation amounted to 9-16 mm in the valleys and 27-44 mm in the mountainous areas. In Naryn region, the average temperature was 17-19° C, ranging from 17 to 32°C at day and from 3 to 16°C at night. Precipitations were close to the annual norm (24-41 mm). Natural vegetation in the locust-infested areas started to dry out.

In Tajikistan, the weather conditions were close to the norm. Average monthly temperature was 23-29°C, reaching up to 42°C in some southern districts. Torrential rains in the beginning and end of month resulted in floods in some mountainous districts of central and northern part of the country.

In Turkmenistan, the weather was hot and most of the days were sunny and only for two days there were rains. The average daily temperature was 32-35°C, and in some days it reached 44°C.

In Uzbekistan, the weather was hot and the temperatures were for 1-1.5°C higher than the norm in most parts. Average temperature in the Autonomous Republic of Karakalpakstan, Khorezm and northern part of Navoi regions was 28-29°C. In the days it reached 42-45°C in desert areas, dropping to 20-25°C at nights. In the southern part of Tashkent, Syrdarya, Jizzakh, Samarkand, Bukhara and southern part of Navoi regions, the temperature was close to the norm and in some parts higher the norm for 1-1.5°C. The average temperature was 26-30°C and up to 38-45°C at day time and 20-27°C at nights. Average temperature in Kashkadarya and Surkhandarya regions was also higher the norm for 1-1.5°C, reaching 29-31°C. The temperature during the day ranged from 35°C to 45ºC and from 22 to 30ºC at night. In Fergana valley, the monthly temperature was close to the norm and varied from 30-39ºC at daytime to 19-24ºC during the nights. The precipitation in this period was close to the norm, 4-6 mm rainfall was recorded in the valleys and 15-49 mm in the foothills.

Area treated in July 2023

Information on areas chemically treated since the start of the 2023 campaign is provided in brackets.

Afghanistan	0 (42 726) ha
Armenia	0 (0) ha
Azerbaijan	3297.5 (8151.5) ha
Georgia	12 370 (40 480) ha
Kazakhstan	374 197 (1 612 045) ha
Kyrgyzstan	9500 (48 280) ha
Russian Federation	90 140 (168 780) ha
Tajikistan	0 (129 021) ha
Turkmenistan	1690 (44 952) ha
Uzbekistan	21 927 (495 891) ha
Total	**513 121.5 (2 590 326.5) ha**

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

- **SITUATION**

More then 30 000 ha were surveyed in July, reaching 60 000 ha during the last two months, and no CIT was observed. Grasshoppers with densities below the economic threshold (1 to 3 individuals/m^2) were observed in the valleys and mountainous areas. Although no control operations were conducted in 2023 from the state budget, which is mainly due to the absence of CIT and low density of non-swarming grasshoppers, it should be noted that control operations carried out by the farmers in their agricultural lands against other pests (more then 130 000 ha in 2023) also serve as limiting factor for locust and grasshoppers' development and their spread.

- **FORECAST**

Non-swarming grasshoppers mating and egg-laying will start in August.

Azerbaijan

- **SITUATION**

DMA lifecycle came to an end in most areas and CIT started egg-laying at the end of the reporting period. No LMI was observed in 2023. DMA treatment covered 87.5 ha in July and 3513 ha from the start of campaign, while control operations against CIT were carried out on 3210 ha in July and 4638.5 ha from the start of campaign. Overall, 3297.5 ha were treated in July, and the total treated area since the start of the campaign reached 8151.5 ha, which is three times lower than in the same period of last year (25 497 ha were treated in 2022). Chemical controls were carried out by applying pyrethroid insecticides, a.i. alpha-cypermethrin (ultra-low volume - ULV) and cypermethrin (Emulsifiable Concentrate - EC) by using sprayers mounted on vehicles (for ULV) and on tractors (low volume - LV) for EC pesticides.

- **FORECAST**

DMA lifecycle will be completed everywhere. CIT

egg-laying will be completed and natural die off will start in August.

Georgia

- **SITUATION**

Locust survey was conducted on 88 780 ha in July and in total on 166 810 in 2023. CIT was in adult stage, and rarely in the last hopper instar and its fledging started at the end of reporting period. Treatments covered an area of 12 370 ha in July, and 40 480 ha in total since the start of campaign, which is 54% lower than in 2022 (74 945 ha). Control operations were carried out using eleven ULV sprayers (Micron AU8115) and nine LV sprayers (MMT Hunter), both mounted on vehicles, using insecticides with a.i. teflubenzuron ULV and a.i. lambda-cyhalothrin, both ULV and EC.

- **FORECAST**

CIT mating and mass egg-laying will take place in August followed by die-off by the end of the month.

Russian Federation

- **SITUATION**

Surveys of locusts and grasshoppers covered in July a total area of 939 960 ha, out of which 342 970 ha were found infested, including 258 970 ha by adults and 84 000 ha by hoppers of various instars. DMA infestations were observed in South and North Caucasus FDs on 123 710 ha, with more than 98% infested areas in North Caucasus (122 060 ha). CIT was present in six out of seven FDs (except Far East FD) on an area of 156 280 ha, with the majority of infested areas in South and Volga FDs. LMI was observed in South, North Caucasus and Siberia FDs on a total area of 13 750 ha, with more than half of it in South FD. Overall, 90 140 ha were controlled chemically in July, and 168 780 ha since the start of campaign, which is 10% lower than the same period of 2022 (186 110 ha).

- **FORECAST**

DMA life cycle will come to an end in all areas. CIT and LMI fledging followed by mating and egg-laying will occur, and control operations will be continued against these species.

CENTRAL ASIA

Afghanistan

- **SITUATION**

DMA life cycle came to an end in all areas, control operations had been completed at the end of June in all provinces. Summer survey of egg-laying sites being conducted, including with the support of FAO emergency project.

- **FORECAST**

DMA eggs will remain in the soil until next spring. Survey of egg-laying sites will continue in early August.

Kazakhstan

- **SITUATION**

DMA survey of adults during mating and egg-laying was completed by mid-July covering a total area of 766 900 ha, out of which 349 142 ha were infested. An average density of up to 1 individual/m² was recorded on 47 083 ha, up to 5 individuals/m² on 101 800 ha, from 5 to 10 individuals/m^2 on 108 959 ha and more than 10 individuals/m^2 on 91 300 ha. CIT hoppers' survey covered an area of 12 864 920 ha in 2023, out of which 2 466 529 ha were found infested. CIT adult survey during mating and egg-laying covered an area of 4 352 737 ha, out of which 782 087 ha were infested. Control operations were continued in July against CIT and LMI on 374 197 ha, and reaching 1 612 045 ha since the start of campaign, which is 66% higher than in same period of 2022 (971 220 ha) or 2.6 times higher than in 2021 (625 900 ha). From this total treated area, 78 797 ha were treated against DMA (16 620 ha in 2022), 1 334 251 ha against CIT (761 100 ha in 2022) and 198 997 ha against LMI (193 500 ha in 2022).

- **FORECAST**

DMA eggs will remain in the soil till next spring. CIT mating and egg-laying will continue in August. LMI hopper development will continue in Kostanay, Abay, Almaty and West Kazakhstan regions, while mating and egg-laying will start in other areas.

Kyrgyzstan

- **SITUATION**

During the DMA adult survey in July, 2400 ha were found infested, with an average density from 5 to 25 adults/m^2. DMA continued egg-laying and started to die off. CIT surveys were conducted on 11 540 ha in July, out of which 8664 ha were infested, mostly in Naryn region (8394), with an

average density from 10 to 25 hoppers/m^2. CIT populations in Chuy region reached their 5th instars, while in Naryn they were mainly in 3rd and 4th instars by the end of the reporting period. CIT appeared in some areas, where last treatments were conducted in 2004. Control operations were carried out on 9500 ha in July and on a total area of 48 280 ha since the start of campaign which is close to the area treated in previous year (47 440 ha). Treatments were carried out using seven ULV vehicle-mounted sprayers AU8115M and five EC sprayers mounted on tractors, with pesticides a.i. alpha-cypermethrin EC, a.i. chloprpyrifos ULV and a.i. deltamethrin ULV.

- **FORECAST**

DMA natural life cycle will come to an end. CIT fledging followed by mating and egg-laying will continue, massive control operations are planned to take place in Naryn region in early August.

Tajikistan

- **SITUATION**

DMA and CIT completed their lifecycle in all areas. A total area of 203 705 ha has been surveyed, which is 10% more than planned, out of which 129 536 ha were found infested. Control operations were finished in all areas in the last decade of June on a total area of 129 021 ha since the beginning of the campaign, which is 9% higher than in 2022 (117 070 ha) and close to the area treated in 2021 (130 503 ha). The majority of treatments were applied against DMA (113 981 ha) with only 6575 ha treated against CIT and 8465 ha treated against non-swarming grasshoppers. Chemical pesticides with a.i. lambda-cyhalothrin, alpha-cypermethrin and chlorpyrifos+cypermethrin were applied by EC sprayers, TOS -600 and 2000, Agromaster, and ULV sprayers Micron AU8115 and Micron AU8000.

- **FORECAST**

All species have completed their life cycles and their eggs will remain in the soil till the next season. Summer surveys will continue in egg-laying areas.

Turkmenistan

- **SITUATION**

DMA lifecycle came to an end in all areas, including in Bakherden and Gyzylarbat districts. Locust surveys continued on 3240 ha in July. Chemical treatments were completed in early July, including 960 ha in Akhal and 730 ha in Balkan. Overall, the total treated area in the country reached 44 952 ha since the start of the campaign, which is 14% higher compared to last year (38 701 ha), but close to the treated area in 2021 (43 387 ha). Control operations were carried out using ULV vehicle-mounted sprayers Micron AU8115, as well as EC sprayer "Wind 634 Flexigun" operated by the tractor Class 340 Axoss. EC insecticides with a.i. alpha-cypermethrinand lambda cyhalothrin, and Suspension concentrate (SC) with a.i. imidacloprid + alpha-cypermethrin) were applied.

- **FORECAST**

Locust eggs will remain in the soil till next spring. Survey of egg-laying sites will continue in August.

Uzbekistan

- **SITUATION**

DMA natural cycle came to an end in all areas. CIT and LMI mating and egg-laying continued mainly in Karakalpakstan. Control operations in July were conducted on 21 927 ha, reaching 495 891 ha since the start of the campaign, which is 22% higher as compared to the same period in 2022 (406 018 ha) and close to the total treated area in 2021 (503 876 ha). This included 278 383 ha against DMA, 92 674 ha against saxaul grasshopper (*Dericorys albidula*), 81 700 ha against CIT and 43 134 ha against other non-swarming grasshoppers. No treatment was carried out against LMI in 2023. Insecticides used in 2023 campaign included the following: a.i.: lambda-cyhalothrin, lambda-cyhalothrin + imidacloprid, alpha-cypermethrin and imidacloprid, all in EC formulations.

- **FORECAST**

DMA eggs will remain in the soil till next spring. CIT and LMI life cycles will come to an end in Karakalpakstan.

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. 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.

Events and activities in July 2023

- **Technical Workshop on Locusts in CCA, 20-24 November 2023, Bishkek, Kyrgyzstan:** invitations dispatched.
- **E-Committee on Caucasus and Central Asia Locust Management System (CCALM)** held on 26 and 27 July with all CCA countries.
- **Trainings:**
  - **Azerbaijan:** fifth and the last briefing session held on 7 July, to the benefit of 17 participants in Guba district.
- **Human Health and Environmental Monitoring Teams:**
  - **Azerbaijan:** fifth and last monitoring mission carried out on 6-10 July in Guba;
  - **Georgia:** third and last monitoring mission started on 27 July – 7 August, in Kakheti, Mtskheta-Mtianeti and Kvemo-Kartli;
  - **Kyrgyzstan:** fifth and last monitoring missions carried out on 12-17 June in At-Bashi, Ak-Tala and Naryn districts;
  - **Tajikistan:** as part of the second set, three missions carried out on 3-5 July in Vakhsh and on 10-12 July in Kulob, Khatlon, as well as on 28-30 July in DRS.

- **Procurement in progress**, at various stages: vehicles for survey/control operations, water-tank lorry, camping equipment (GCP/GLO/917/USA & GCP/INT/384/JCA).

Forthcoming events and activities in August 2023:

- **Human Health and Environmental Monitoring Teams:**
  - **Tajikistan:** as part of the second set of mission, last mission scheduled on 1-4 August; visit of Uzbek experts in Sughd, to take part in field monitoring activities, postponed accordingly.
- **Procurement** ongoing, with expected delivery of pick-up vehicles for Uzbekistan, GPS for Azerbaijan, IT equipment for Georgia and Armenia.

FAO 2023
CC7415EN