Food and Agriculture Organization of the United Nations

Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 64

FAO - Plant Production and Protection Division (AGP) 15 August 2019

Situation level: CALM everywhere for all locust pests

General situation during July 2019
Forecast until mid-September 2019

Hot and dry weather accelerated die-off of the Moroccan Locust (DMA) everywhere, with some limited swarm flights still occurring in Tajikistan. Italian Locust (CIT) and Migratory Locust (LMI) hopper development completed, followed by mating and egg-laying. Control operations were winding down in most countries except for Kazakhstan and Russian Federation. In total, about 1.8 million ha were treated since the beginning of the 2019 campaign. This is less than a half of the area treated in the same period in 2018.

Caucasus. DMA mating and egg-laying took place in **Azerbaijan** and probably in **Georgia.** CIT hopper development mostly completed in Azerbaijan and **Armenia**. Control operations were winding down in Azerbaijan with about 3 000 ha treated in July; limited treatments of 1 300 ha took place in Armenia.

Central Asia. DMA life cycle completed almost everywhere with limited swarm flights occurring in **Tajikistan.** CIT and LMI hopper development completed in all countries except **Afghanistan** followed by mating and egg-laying. In July, about 250 000 ha were treated, which is significantly lower than the area treated in July 2018.

Weather and Ecological Conditions in June 2019

Hotter than usual weather with lower than usual precipitations generally prevailed and the natural vegetation dried out in most of the traditional locust breeding areas.

In **Caucasus,** hot weather prevailed and natural vegetation dried out.

In Armenia, daily temperatures exceeded the norm and ranged from 35 to 41°C (22 to 28°C at night) in lowlands and from 32 to 37°C at foothills.

In Azerbaijan, the weather was hot and dry with average daily temperatures ranging from 32 to 40°C, which is above normal. As a result, natural vegetation on plains has dried out completely and locusts started to move towards cultivated fields nearby. In July, harvest of grain crops has finished everywhere and cotton plants were fruiting. In some areas, corn was planted after cereals.

In **Central Asia**, the weather was generally hot and dry except for South Kazakhstan, where it was cooler than usual, and the Russian Federation, where rainfall exceeded the norm in the Central and Volga Federal Districts (FD).

In Kazakhstan, the weather was generally warm and sunny. In the South, the average daily temperature were ranging from 22 to 38°C with minimum of 16°C (at night) and maximum of 45°C. Precipitation was lower than usual and amounted to 0.5-20 mm. In the East, the average daily temperature was of 13.0°C with minimum of 5°C and maximum of 34°C, which is below the norm. Precipitation was close to the norm (39 mm). In the West, the weather was mostly sunny and hot, with light rains (from 0.3 to 20.7 mm). The average daily temperature ranged from 13.7° C to 35°C, with minimum of 12°C and maximum of 46°C, which is above the norm. In the North, the weather sunny and hot with moderate rains (from 0.1 to 44.7 mm). The average daily temperature ranged from 16.5°C to 31.2°C, with minimum of 11°C and maximum of 37.2°C.

In the Russian Federation, the weather was generally warmer than usual. In the Central Federal District (FD), the average monthly temperatures were close to the norm

ranging from 16° to 20°C. Rainfall was above the norm. In the South FD, average temperatures ranged from 22° to 34°C, which is above the norm. Rainfall was below the norm. In North Caucasus FD, average temperatures ranged from 21° to 32°C, which is close to the norm. Rainfall was significantly below the norm. In Volga FD, average temperatures ranged from 20° to 22°C and rain, which is below the norm, while rainfall exceeded the norm. In the Ural FD, average temperatures ranged from 24° to 25°C, which is close to the norm, while rainfall was below the norm. In the Siberian FD, average temperatures ranged from 21° to 25°C with very low precipitation. In the Far East FD, average temperatures ranged from 14° to 15°C , which is below the norm, while rainfall amount was close to the norm.

In Tajikistan, the weather in July was very hot with almost no rain. Usual agricultural works continued in cotton plantations. In Khatlon, average temperature was 42°C during the day and 30°C at night. In the District of Republican Subordination (DRS), average temperature weas 40°C during the day and 32°C at night. In Sughd, average temperature was 41°C during the day and 35°C at night. According to meteorological forecast, during August, temperatures will be 2 to 4°C lower than in July.

In Uzbekistan, June weather was extremely hot and dry, with temperatures ranging from 38 to 43°C and even to 46°C in semi-deserts. Such abnormally torrid weather was last observed in 1928.

Area treated in July 2019

Armenia	1 310 ha
Azerbaijan	3 303 ha
Kazakhstan	104 600 ha
Russia	94 800 ha
Tajikistan	6 845 ha
Uzbekistan	39 400 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

- **SITUATION**

Infestations of Italian locust (CIT) with density up to 15 individuals/m^2 were found on 1 310 ha in two regions, Ararat and Vajots Dzor. Chemical treatments with a pyrethroid (cypermethrin) were applied to this area.

- **FORECAST**

CIT egg-laying on very limited area will come to its end during forecast period.

Azerbaijan

- **SITUATION**

Hot and dry weather was favourable for locust development. In Kudiri plains, DMA egg-laying finished while in Jeyranchel steppe it still continued. Late-instar hoppers prevailed in CIT and LMI populations in Jeyranchel steppe and Samukhi district. Control operations were winding down: treatments against DMA have finished while they continued, on a limited area of about 3 300 ha, against CIT and LMI. They were carried out in Kudiri plains, Jeyranchel, Garasu, Padarchel and Kharamin steppes.

- **FORECAST**

DMA life cycle completed while CIT and LMI, which will escape control, will fledge and breed in August in Jeyranchel steppe. Monitoring of crop fields will continue in order to prevent losses by applying small-scale and targeted crop protection anti-locust treatments where necessary.

Georgia

- **SITUATION**

No report was received.

- **FORECAST**

Most probably, CIT will mate and lay eggs during the forecast period.

CENTRAL ASIA

Afghanistan

- **SITUATION**

No detailed report was received. Control operations against DMA ended in June.

- **FORECAST**

DMA annual cycle completed with eggs remaining in the soil until next spring.

Kazakhstan

- **SITUATION**

DMA. During mating and egg-laying, surveys were conducted on 1 578 000 ha out of which 155 100 ha were infested, including with densities exceeding 5/m^2 on 69 400 ha.

CIT hopper surveys covered 11 945 900 ha, of which 973 400 ha (8%) were infested including 395 500 ha (3.3%) above ET, which were treated. Surveys during mating and egg-laying covered 3 668 800 ha out of which 204 200 ha were infested, including 80 700 ha above ET.

LMI hopper surveys covered 3 516 400 ha out of which 282 700 ha were infested including 164 600 ha above ET, which were treated. Surveys during mating and egg-laying covered 416 000 ha out of which 11 200 ha were infested.

The total area of anti-locust treatments since the beginning of 2019 campaign amounted to 567 400 ha, which is about a half of the area treated by the same time in 2018.

- **FORECAST**

DMA completed its annual cycle with eggs remaining in the soil until next spring, when hatching is expected at a larger scale compared to 2019.

CIT and LMI will continue mating and laying eggs at a lower scale than in 2018.

Kyrgyzstan

- **SITUATION**

No reports was received.

- **FORECAST**

DMA completed its life-cycle with eggs remaining in the soil until next spring. CIT will continue mating and egg-laying in Naryn and Talass

Russian Federation

- **SITUATION**

During hopper and adult surveys, hoppers were found to infest 394 440 ha including 270 320 ha (68.5%) above ET. Adults infested 109 840 ha including 70 370 ha (64%) above ET. The scale of locust infestations in 2019 is about 40% lower than in 2018. In addition, grasshopper nymphs infested 946 560 ha including 113 000 ha (12%) above ET. Adult grasshoppers infested 240 760 ha including 14 160 ha (6%) above ET. Grasshopper infestations are slightly lower than in 2018.

More specifically, in the Central FD, locust hoppers infested 50 ha at densities from 0.31 to 4 hoppers/m^2. Grasshopper nymphs were present on 21 790 ha at densities from 4.09 to 20 hopper/m². Adult grasshoppers infested 8 370 ha with density from 2.65 to 8 individuals/m^2. In the South FD, locust hoppers were observed on 110 730 ha at densities ranging from 19.2 to 2 000 hoppers/m². Adult locust infestations were found on 30 710 ha with densities ranging from 16.34 to 400 adults/m^2. LMI swarm flights were registered in the River Volga delta. Grasshopper nymphs were also found on 70 090 ha at densities ranging from 1.51 to 30 hoppers/m². Adult grasshoppers infested 25.550 ha with densities between 1.47 and 30 adults/m^2. In North Caucasus FD, locust hopper populations were recorded on 248 700 ha at densities of 12.26-200 hoppers/m². Adult locusts infested 66 520 ha with densities ranging from 5.74 to 40 adults/m^2. CIT and DMA populations

consisted of late-instar nymphs and adults, which started to mate. Nymphs of grasshoppers were found on 195 670 ha at densities of 5.64-75 hoppers/m². In the Volga FD, locust hoppers were observed on 19 640 ha at densities of 1.4□40 hoppers/m²; adult locusts were found on 2 060 ha at densities from 1 to 3 adults/m^2. Nymphs of grasshoppers were found on 161 530 ha at densities of 2.1-40 hoppers/m². Adult locusts were found on 21 110 ha at densities from 1.52 to 10 adults/m^2. In the Ural FD, no locust hoppers were found but grasshopper nymphs were recorded on 115 710 ha at densities of 1.5□32 hoppers/m². Adult grasshoppers were found on 6 320 ha with densities from 10.6 to 20/m^2. In the Siberian FD, locust hoppers were present on 4 020 ha at densities of 0.5-2 hoppers/m². Adult locusts infested 4 450 ha at densities from 0.9 to 3 adults/m^2. Grasshopper nymphs infested 314 310 ha at densities of 4.9-72 hoppers/m^2. Adult grasshoppers infested 119 440 ha at densities of 3.54-70 adults/m^2. In the Far East FD, locust hoppers were observed on 11 300 ha with densities from 11.8 to 55 hoppers/m^2.

Grasshopper nymphs were found on 67 460 ha at densities of 3.8-18 hoppers/m². Adult grasshoppers infested 6 060 ha with densities from 0.65 to 4 adults/m^2.

A total of 347 030 ha were treated since the beginning of the 2019 campaign, mostly in North Caucasus (216 380 ha), South (84 570 ha), Siberian (29 120 ha) and Volga (14 010 ha) FDs. This is less than a half of the area treated in 2018.
2018.

- **FORECAST**

DMA completed its life-cycle with eggs remaining in the soil until they will hatch next spring. CIT and LMI will complete hopper development, fledge, produce swarm flights, mate and lay eggs.

Tajikistan

- **SITUATION**

DMA swarm flights were observed and small-scale treatments (sometimes repeated ones) were applied to prevent crop damage. CIT fledged and started mating in Sughd.

In July, control operations were winding down, with only about 6 800 ha treated mostly against swarms. The total area treated from the beginning of the campaign is 109 890 ha, which is very close to the area treated in 2018. The bulk of the treatments (92 695 ha) concerned DMA while 17 195 ha were treated against CIT.

- **FORECAST**

DMA life cycle completed with eggs remaining in the soil until they hatch next spring. CIT and grasshopper adults will mate and lay eggs.

Turkmenistan

- **SITUATION**

No report was received. In view of the situation in the neighbouring countries, DMA life cycle completed.

- **FORECAST**

DMA eggs will remain in the soil until next spring.

Uzbekistan

- **SITUATION**

DMA adults gradually died off during July, the process was accelerated by the extremely hot and dry weather.

CIT fledged and started mating and egg-laying. Treatments were in progress mostly in Karakalpakstan and Tashkent region.

LMI accomplished its hopper development in the Aral Sea zone, followed by fledging, mating and egg-laying.

Saxaul grasshopper (*Dericorys albidula*) produced an outbreaks in the deserts of Kara-Qum and Kyzyl-Qum. Mass swarm flights were observed, requiring treatments against adults from ultra-light aircraft.

In July, control operations were carried out on 39 400 ha. Overall, since the beginning of the 2019 locust campaign, 501 400 ha have been treated, including 350 000 ha against DMA (mostly in the South), 58 000 ha against CIT (in karakalpakstan, Tashkent and Fergana), 25 400 ha against *Calliptamus turanicus* (in Navoyi), 48 000 ha against LMI (in Karakalpakstan) and 20 000 ha against saxaul grasshopper. In general, the level of locust infestations in 2019 was similar to that in 2018.

- **FORECAST**

DMA completed its life cycle and eggs will remain in the soil until next spring. The scale of hatching in 2020 is expected to be similar to the one in 2019. CIT and LMI adults will continue to lay eggs. Because of high spring flooding in the Aral Sea zone, and the gradual recession of the water during the summer, late-season hatching of LMI cannot be excluded.

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 2019

- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** printing of hard-copies almost finished: 500 copies handed-over to Kyrgyzstan. Web versions available in Dari, Kyrgyz and Tajik, in addition to English and Russian on website "Locust Watch in CCA"
- **Procurement of locust survey and control equipment:**
  - Procurement of tablets for the Automated System for Data Collection (ASDC) use under the project GCP/ GLO/963/USA finalized and items delivered to Armenia, Azerbaijan and Uzbekistan.
  - Delivery of last items procured under the project GCP/INT/238/JPN to Afghanistan, Kyrgyzstan and Tajikistan finalized.
- **Human Health and Environmental aspects:**
  - Georgia: second mission of the Human Health and Environmental Monitoring Team carried out on 22-28 June in Kvemo Kartli, Kakheti.
- **Programme/projects:**
  - One-year no-cost extension (until September 2020) of project GCP/GLO/963/USA requested and official approval awaited from the donor.
  - Projects GCP/SEC/004/TUR and GCP/INT/238/JPN: terminal reports under preparation.
  - New project for funding by Japan/JICA phase 2: Letter of interest received from Turkmenistan. Project document under preparation.
- **Workshop on data analysis, forecasting and reporting in Caucasus and Central Asia (CCA) and Technical Workshop on locusts in CCA,** respectively planned on 11-12 and 13-15 November, 2019 (venue to be confirmed): arrangements started.

Forthcoming events and activities in July 2019

- **Practical Guidelines on pesticide risk reduction for locust control in CCA:** hard copies dispatched to Afghanistan (500 copies) and Tajikistan (600 copies).
- **Human Health and Environmental aspects:** Georgia: fourth mission of the Human Health and Environmental Monitoring Team scheduled in August 2019 in Kakheti.
- **Workshop on data analysis, forecast and reporting in CCA and Technical Workshop on locusts in CCA:** FAO official letters of invitation to be issued.