Food and Agriculture Organization of the United Nations

Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 72

FAO - Plant Production and Protection Division (NSP) 18 September 2020

Situation level: CAUTION in Georgia (CIT)

Situation level: CALM elsewhere or for the other locust pests

General situation during August 2020 Forecast for September 2020

Italian and Asian Migratory Locusts (CIT and LMI) finished mating and egg-laying and started to die-off in most countries and generally, the situation was calm. In five countries – Afghanistan, Kazakhstan, Tajikistan, Turkmenistan and Uzbekistan – anti-locust treatments had finished in July. In the other five countries, campaign continued. About 10 000 ha were treated in Georgia, Kyrgyzstan and the Russian Federation each; additionally, small areas were treated in Azerbaijan and Armenia, which brought the area treated in August to 30 794 ha and the total area of anti-locust treatments during 2020 campaign to just under two million hectares, which is close to 2019 level but slightly lower than the forecast for 2020. In general, COVID-19 pandemics created difficulties in implementing locust monitoring and control activities in CCA.

Caucasus. CIT mating and egg-laying continued in **Azerbaijan,** where treatments were applied to a small area of 704 ha, in **Armenia,** where 100 ha were treated, and in **Georgia;** in the latter country CIT situation remained quite threatening**.** In total, less than 10 000 ha were treated in Caucasus in August.

Central Asia. CIT and LMI continued mating and egg-laying and started to die-off in **Kazakhstan** (both species)**, Kyrgyzstan** (CIT)**, Russian Federation** (both species)**, Tajikistan** (CIT) and **Uzbekistan** (both species)**.** About 21 350 ha were treated in Kyrgyzstan and Russia.

Weather and Ecological Conditions in August 2020

Weather was generally hot and dry in both Caucasus and Central Asia, providing favorable conditions for locust egg-laying, except for some areas of Kazakhstan and Russia where abundant rains fell.

In **Caucasus**, similar to July, the weather remained very hot and dry throughout August.

In Azerbaijan, the weather was hot and dry with no rains at all. The natural vegetation cover completely dried out. Average temperatures were 29-32ºC (up to 37-39ºC), which is higher than the climatic norm.

In Armenia, the weather was hot and dry with temperatures between 30 and 35ºC in the daytime and 17-24ºC at night.

In Georgia, the weather was hot and dry with minimum temperatures 20ºC and maximum of 38ºC. Vegetation in locust-infested areas was of very low density and dried out.

In **Central Asia**, the weather was mostly hot; in some areas of Russia and Kazakhstan, significant amounts of precipitations fell.

In Afghanistan, weather was hot and dry.

In Kazakhstan, the weather was mostly warm, with little rain. In the South, the weather was dry, with 1 – 23.5 mm of precipitations, below the norm. The average daily

temperature ranged from 14 to 26°C with minimum of 12°C (at night) and maximum of 39°C. In the East, the weather was mostly sunny. The average daily temperature ranged was 18° C with minimum of 8°C and maximum of 32°C. Precipitations ranged from 1 to 17.5 mm, which is below the norm. In the West, the weather was changeable. The average daily temperature ranged from 18°C to 25°C, with minimum of 14°C and maximum of 36°C. Precipitations ranged from 1 to 20 mm (below of the norm). In the North, the weather was mostly warm and rainy. The average daily temperature was from 18°C, with minimum of 7°C and maximum of 30°C. Precipitations varied from 1 to 25 mm (below the norm).

In Kyrgyzstan, the weather was mostly hot. In Naryn oblast, average monthly temperatures ranged from 18 to 20ºC, which is close to the norm. More specifically, in the first half of the month, temperatures ranged from 8-13ºC at night and from 20-25ºC to 26-31ºC during the day; the amount of precipitations (13-28 mm) was close to the norm. In the second half of the month temperatures were several degrees cooler but still within the norm. In Talas oblast, average monthly temperatures ranged from 18 to 20ºC, which is close to the norm. More specifically, temperatures ranged from 8-13ºC to 14-19ºC at night and from 23-28ºC to 30-35ºC during the day; the amount of precipitations (6-12 mm) was close to the norm. Natural vegetation (grasses and *Artemisia* spp. mixed with ephemerals) dried out.

In the Russian Federation, the weather was mostly warm with high rains locally and generally favorable for locust development. In the Central Federal District (FD), the average monthly temperatures ranged from 17.1° to 20°C (up to 31ºC) and rainfall ranged from 30 to 43 mm, which is close to the norm. In the South FD, the weather was hot with average temperatures ranging from 21.5° to 23.7°C (sometimes reaching 35ºC). Precipitations averaged from 11 to 24 mm, which is below the norm. In North Caucasus FD, average temperatures ranged from 21° to 22.8°C with maximum up to 34.6ºC and rain fell close to the norm ranging from 30 to 84 mm. In Volga FD, average temperatures ranged from 15° to 17°C with maximum up to 32ºC and rain ranged from 50 to 100 mm, which is above the norm. In the Ural FD, the weather was unstable, with temperatures from 16.7 to 19.2ºC and rainfall from 32 to 102 mm, above the norm. In the Siberian FD, the average temperatures ranged from 17° to 19°C (sometimes up to 33ºC) and rainfall ranged from 45 to 106 mm, above the norm. In the Far East FD, the weather was cool and wet with average temperatures ranging from 12° to 18.6°C and rainfall ranging from 58 to 232 mm, which is significantly above the norm.

In Tajikistan, the weather was warm and dry although temperatures were slightly below normal. In Khatlon oblast, the average temperature was 27°C at night and 34°C during the day; in Sughd oblast, the average temperature ranged from 20°C at night to 31ºC during the day. In Districts of Republican Subordination (DRS) average temperatures ranged from 18ºC at night to 34ºC during the day. Precipitations were very low.

In Turkmenistan, the temperatures and precipitations were close to the multiannual norm.

In Uzbekistan, weather was very hot and dry. Average daily temperatures ranged from 23 to 31°C, up to 35°C in Karakalpakstan. Precipitations were very low, only 2.5 mm on an average.

Area treated in August 2020 / Total 2020

Afghanistan	0 ha /	90 584 ha
Armenia	100 ha /	1 230 ha
Azerbaijan	704 ha /	32 390 ha
Georgia	8 640 ha /	72 510 ha
Kazakhstan	0 ha /	514 500 ha
Kyrgyzstan	11 000 ha /	77 655 ha
Russia	10 350 ha /	480 390 ha
Tajikistan	0 ha /	113 459 ha
Turkmenistan	0 ha /	75 493 ha
Uzbekistan	0 ha /	527 436 ha
TOTAL	30 794 ha /	1 985 647 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

- **SITUATION**

Italian Locust (CIT) surveys were conducted in total on 80 000 ha out of which 1 230 ha were found infested by CIT hoppers at a density between 0 and 2 individuals per m^2 in Ararat (1 030 ha), Artashat (100 ha) and Kotajk (100 ha) districts. The latter area was treated in August with neo-nicotinoid acetamiprid. In total, 1 230 ha were treated in

2020.

- **FORECAST**

CIT will complete its annual cycle and eggs will stay in soil until hatching next spring.

Azerbaijan

- **SITUATION**

LMI and CIT continued egg-laying in August, which mostly finished in the second half of the month, then started to die off. Chemical treatments against CIT only were conducted on a limited area of 704 ha with pyrethroid insecticides in ULV formulations by vehicle-mounted sprayers. In total, anti-locust treatments covered 32 390 ha in 2020.

- **FORECAST**

All three species completed their life cycle and their eggs will stay in soil until they hatch next spring. Egg-pod surveys will start in September.

Georgia

- **SITUATION**

CIT continued swarm flights and egg-laying, and the situation was critical in several areas. In total, over 220 000 ha were surveyed against locusts. Chemical treatments continued in Kakheti, Kvemo-Kartli, Mtskheta-Mtianeti, Samtskhe-Javakheti, Shida-Kartli and Tbilisi, with 8 640 ha treated in August. This brought the total area of treatments during 2020 campaign to 72 510 ha, which is extremely high for the country.

- **FORECAST**

CIT will finish egg-laying and complete its natural cycle. Eggs of CIT and DMA will remain in soil until they hatch next spring.

CENTRAL ASIA

Afghanistan

- **SITUATION**

No report was received. DMA had completed its annual cycle earlier. In total, 90 584 ha were treated against locusts in 2020.

- **FORECAST**

DMA eggs will remain in soil until they hatch next spring.

Kazakhstan

- **SITUATION**

DMA egg-pod surveys conducted from June to August covered 1 632 100 ha out of which 202 470 ha were infested, including with densities below 5 egg-pods per m^2 on 104 150 ha, from 5 to 10 egg-pods per m^2 on 63 700 ha and over 10 egg-pods per m^2 on 34 620 ha.

CIT mating and egg-laying surveys covered 12 929 000 ha out of which 758 300 ha were infested including 286 500 ha with densities below 5 egg-pods per m^2 on 455 200 ha, from 5 to 10 egg-pods per m^2 on 229 400 ha and above 10 egg-pods per m^2 on 73 700 ha. LMI mating and egg-laying surveys were conducted on 2 782 000 ha out of which 213 500 ha were infested, including with densities below 500 adults per ha on 120 200 ha, between 500 and 1 000 adults per ha on 81 200 ha and above 1 000 adults per ha on 12 100 ha. No chemical treatments took place in August. During this campaign, chemical treatments against DMA, CIT and LMI took place on 514 500 ha, which is close to the forecasted area for 2020 (553 951 ha).

- **FORECAST**

Natural cycle of all three locust species completed; eggs will stay in soil until they hatch next spring.

Kyrgyzstan

- **SITUATION**

CIT populations were mating, egg-laying and started to die-off. Chemical treatments against CIT were implemented on 11 000 ha including 8 700 ha in Naryn and 2 300 ha in Talas oblasts. Against both locusts, pyrethroid insecticides alpha-cypermethrin and lambda-cyhalothrin were used. Treatments were applied by three vehicle-mounted ULV sprayers. This brings the total treated area to 77 655 ha in 2020, which is lower than the forecast (120 000 ha), the sanitary situation having hampered the operations.

- **FORECAST**

CIT natural cycle completed; eggs of both CIT and DMA will stay in soil until they hatch next spring.

Russian Federation

- **SITUATION**

CIT and LMI continued mating and egg-laying and started to die off. Since the beginning of the 2020 campaign, locust surveys covered in total 7 052 740 ha out of which 516 680 ha were infested with hoppers and 154 640 ha with adults. Grasshopper surveys were implemented on 7 895 880 ha out of which 961 870 ha were infested with hoppers and

454 240 ha with adults. In the South Federal District (FD), locust infestations covered the largest area in the country and densities were the highest. Locust (CIT, DMA and LMI) hopper surveys took place on 2 037 710 ha out of which 196 580 ha were infested with an average density of 29/m^2 and a maximum density of 3 000/m^2. Adult surveys were conducted on 1 057 870 ha out of which 68 430 ha were infested with an average density of 22 individuals/m^2 and a maximum density of 1 000 adults/m^2. In North Caucasus FD, locust (CIT, DMA and LMI) hopper surveys were conducted on 1 060 800 ha out of which 288 580 ha were infested with an average density of 15.65 hoppers/m^2 and a maximum density of 350 hoppers / m^2. Adult locust surveys were conducted on 413 850 ha out of which 65 800 ha were infested with an average density of 9 individuals/m^2 and a maximum density of 200 individuals/m^2. In the Central FD, CIT hopper surveys were conducted on 83 160 ha out of which 5 090 ha were infested with an average density of 0.42 individuals/m^2 and a maximum density of 7 individuals/ m^2. In the Volga FD, CIT hopper surveys were conducted on 453 250 ha out of which 18 930 ha were found infested with an average density of 0.7 hoppers/m^2 and a maximum density of 50 hoppers/m^2. In the Ural FD, out of 262 620 ha surveyed, locust hoppers were found on 400 ha with very low densities, below 1 individual/m^2. In the Siberia FD, CIT hopper surveys were conducted on 137 630 ha out of which 7 090 ha were infested with an average density of 0.4 hoppers/m^2 and a maximum density of 4 hoppers/m^2. Adult surveys were conducted on 124 180 ha out of which 7 680 ha were infested with an average density of 0.2 individuals/m^2 and a maximum density of 3 individuals/ m^2. In the Far East FD, only grasshopper surveys were conducted on 285 210 ha out of which 125 530 ha were infested with an average density of 2.85 hoppers/m^2 and a maximum density of 56 hoppers/m^2. In August, 10 350 ha were treated, which brought the total area of 2020 anti-locust treatments to 480 390 ha. Treatments were conducted by 636 units of ground sprayers and 37 aircraft.

- **Forecast**

CIT and LMI will complete natural cycles and die-off. Eggs of all three species will stay in soil until hatching next spring.

Tajikistan

- **Situation**

In August, locust mating, egg-laying and egg-pod surveys took place on 140 548 ha including 82 120 ha in Khatlon oblast, 42 716 ha in Sughd oblast, 14 902 ha in DRS and 810 ha in Gorno-Badakhshan. CIT populations completed their natural cycle. No treatments took place in August (they ended on 23 July) and the total area treated during 2020 campaign was 113 459 ha. Because of COVID-19 restrictions, certain areas remained undertreated, particularly near borders with Afghanistan, Kyrgyzstan and Uzbekistan.

- **Forecast**

Eggs of both CIT and DMA will stay in soil until they hatch next spring. Due to undertreated in 2020 areas, it is expected that in 2021 locusts will expand their infestations, particularly near borders with neighboring countries.

Turkmenistan

- **Situation**

No report was received. Based on the situation in the neighboring countries, DMA completed its natural cycle. The total area treated in 2020 was 75 493 ha.

- **Forecast**

DMA eggs will remain in the soil until hatching next spring.

Uzbekistan

- **Situation**

CIT and LMI continued mating and egg-laying and started to die-off. Anti-locust treatments were over in July. The total area treated since the beginning of the campaign was of 527 436 ha.

- **Forecast**

Eggs of all three locust species will stay in the soil until hatching next spring.

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 1st 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 August 2020

- **Briefing sessions on locust spraying and pesticide risk reduction, Kyrgyzstan:** 5th and final session delivered by Master-Trainers to 10 spraying staff/local manpower on 4-6 August 2020, in At-Bashy and Ak-Talaa districts, Naryn region.
- **Human Health and Environmental Monitoring Teams:**
  - Kyrgyzstan 5th and last monitoring mission carried out on 6-12 August in At-Bashy and Ak-Talaa districts, Naryn region;
  - Georgia: pesticide residue analysis on vegetation samples collected by the Human Health and Environmental Monitoring Team in progress (objective: assess re-entry period for livestock).
- **Equipment for Kyrgyzstan** (TCP Project):
  - Pesticides: after laboratory analysis, first order delivered (10 000 l in EC formulation) and second order issued (6 590 l in ULV formulation);
  - Cholinesterase kits: under custom clearance.
- **New project GCP/INT/384/JCA - Central Asia**: Project Document sent to the concerned countries for signature; signed version already received from Afghanistan, Kyrgyzstan and Uzbekistan (mid-August/early September).
- **Webinar for suppliers from Russia and the wider Eurasian region on FAO procedures and requirements for the supply of locust control chemical and biological agents to FAO pest management operations worldwide** held on 6 August 2020.

Forthcoming events and activities in September 2020 and beyond

- **Practical Guidelines on the three locust pests in CCA**: approval as official FAO publications.
- **Training sessions:**
  - Azerbaijan: remote session on Automated System for Data Collection (ASDC) and Caucasus and Central Asia Management System (CCALM) to be delivered to the benefit of about 25 Experts on 11 and 18 September by GIS Expert;
  - Kyrgyzstan: remote Refresher Course on locust monitoring and information management, including ASDC and CCALM, to be delivered to the benefit of seven Master-Trainers on 5-9 October 2020 by FAO Agricultural Officer/Locust Management and GIS Expert.
- **Human Health and Environmental Monitoring Teams – Georgia:** laboratory report on pesticide residue analysis on vegetation samples to be received and reviewed.
- **Equipment for Kyrgyzstan** (TCP project) – to be delivered**:**
  - Second order of pesticides (after laboratory analysis);
  - Personal Protective Equipment (PPE);
  - Cholinesterase kits (after finalization of custom clearance process).
- **Other equipment:**
  - Tablets for ASDC use (purchased in 2019) to be transferred to Kazakhstan (20 units) and shipped to Turkmenistan (five units) in September, with four entomological kits to the latter country.
- **Pesticides Referee Group (PRG):** services in charge of locust management and research centers invited to submit, by 31st October, data on efficacy and environmental/health effects of insecticides intended for locust and grasshopper control to PRG-data@fao.org
- **New project GCP/INT/384/JCA - Central Asia:** project operational start after receipt of funds by FAO; Budget revision to be done based on funds effectively received

(depending on exchange rate); and First Project Steering Committee (PSC) to be organized immediately after (via zoom); in parallel, signature awaited from Kazakhstan, Tajikistan and Turkmenistan.

- **Annual Technical Workshop:** two/three-day Workshop to be held remotely (via zoom) in the second half of November (invitation will follow).

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