Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 42

FAO - Plant Production and Protection Division (AGP) 15 May 2016

Situation level: CAUTION in Kazakhstan, Kyrgyzstan and Tajikistan (primarily DMA)

Situation level: CALM elsewhere for the three locust pests

General Situation during April 2016 Forecast until mid-June 2016

Moroccan Locust (DMA) hopper development was in progress in Azerbaijan and in all Central Asian (CA) countries, except in Turkmenistan where fledging had already occurred. Italian Locust (CIT) hatching started in Kazakhstan, Tajikistan and Uzbekistan. So far, no Asian Migratory Locust (LMI) hatching was reported. During the forecast period, DMA life cycle will come to an end in most of the CA countries, while fledging will occur in Azerbaijan, Georgia and Russia. CIT hopper development will continue in Kazakhstan, Tajikistan and Uzbekistan and start in Georgia and Russia. More than 217 000 ha were treated against DMA and CIT infestations in April.

Caucasus. DMA hatching was only reported in **Azerbaijan** where limited control operations started. It is expected during the 1st half of May in **Georgia** while CIT hatching should not start before the end of May.

Central Asia. DMA infestations were reported from all Central Asian (CA) countries. Hopper bands were present in **Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan** and **Uzbekistan**, hatching started in **Russia** while fledging began in Tajikistan and Uzbekistan and adults only were present in **Turkmenistan**. CIT hatching started in Kazakhstan, Tajikistan and Uzbekistan. More than 217 000 ha were treated against these two locust pests in the seven above-mentioned countries. During the forecast period, DMA life cycle will come to an end in most of the CA countries, CIT hatching will generalize, followed by hopper development, and LMI hatching will start.

Weather and Ecological Conditions in April 2016

While cool weather persisted in Armenia and Azerbaijan, temperatures increased elsewhere in the region. In Central Asia (CA), the weather was relatively rainy. On the whole, conditions were suitable for locust development except in Uzbekistan.

In **Caucasus**, the weather was still cool in Armenia and Azerbaijan but temperatures increased in Georgia.

In Armenia, daily temperatures ranged from +10 to 20°C in lowlands and from +3 to 15°C at foothills, where rain fell and frost occurred. The weather conditions were not good as it was already the case in 2015.

In Azerbaijan, the weather was generally cool and not suitable for egg development and hatching with average

monthly temperatures of +9/+14°C and significant rainfall. Wind speed was of 4-6 m/s. Natural vegetation was green with a dense cover; crops were at tillering stage and full development.

In Georgia, in the eastern part of the country, which corresponds to the traditional Moroccan Locust habitat, temperatures ranged from +1.1 to 33°C and monthly rainfall was of 29.6 mm. The natural vegetation was green with a medium to high density; cereals, cucurbitaceous and sunflowers were growing.

In **Central Asia**, the weather was variable and relatively rainy in April.

In Kazakhstan, the weather was variable and rainy during the first two decades. In the South, the weather was variable with clear and cloudy days and precipitation in the form of rain during the first two decades; no rain fell during the 3rd decade. The average daily temperature was of 15°C with minimum of +3°C and maximum of 27°C. Relative humidity ranged from 41 to 90%. Westerly and easterly winds prevailed at a speed of 1-7 m/s. In the East, the weather was variable and the first two decades were marked by low temperatures, night frosts, snowmelt and rains, sometimes torrential; at the end of the 2nd decade, temperatures raised up to 24°C. The average daily temperature was of +9°C with minimum of -4°C and maximum of 24°C. The monthly precipitation was of 35.4 mm and the relative humidity of 45.5-86%. South-easterly and easterly winds prevailed at a speed of 1-6 m/s, up to 14 m/s in gusts on some days. In the West, the weather was unstable with precipitation as rain during the first two decades only. The average daily temperature was of +15.2°C, with minimum of +4°C and maximum of +27°C. Relative humidity ranged from 60 to 92%. Westerly, south-easterly and north-westerly winds prevailed at a speed of 2-15 m/s. In the North, the weather was unstable with rains (from 9 to 38 mm). The average daily temperature was of +9.6°C (warmer by 1.7°C as compared to 2015) with minimum of -4°C and maximum of 25°C. Relative humidity ranged from 56 to 98%. South-westerly and north-easterly winds prevailed at a speed of 1-8 m/s.

In Kyrgyzstan, the monthly average temperature was within the norm, around 10/12°C. Temperatures ranged from +1/6°C to 8/13°C at night (with some frosts and temperatures of 0/2°C) and from 13/18°C to 22/27°C during the day. The monthly rainfall was of 79-96 mm and above normal. The vegetation was green with a dense cover and a height of 5-10 cm.

In the Russian Federation, the weather was variable and temperatures increased. In southern regions of the Central Federal District (FD), the weather conditions were quite warm with some rains. The average daily temperature was of 6.9°C during the 1st decade of April with minimum of -4.7°C and maximum of 21.8°C. In North Caucasus and South FDs, the weather was variable with average temperatures ranging from 7.6 to 19.5°C and maximum reaching up to 27.6°C. Light rains fell everywhere. In the Volga FD, the weather was cloudy and warm in early April with precipitation in the form of wet snow. By mid-month, a clear weather prevailed and the temperatures raised quickly with an average of 1-6°C and reaching 17-22°C during the warmest days. Monthly precipitation exceeded 19 mm, almost twice the norm. In the Siberian FD, the 1st half of April was characterized by warm weather and positive temperatures in most days as well as by erratic rainfalls, including wet snow; the winds were weak to strong. Average temperature was of 3.5/5.9°C, i.e. 2.1°C above the norm. In the Far Eastern FD, weather conditions were within the normal and temperatures ranged from -2 to +20°C.

In Tajikistan, during the 1st decade of April, the average temperature ranged from 9.7 (at night) to 20°C and it rained for 6 days. During the 2nd decade, the average temperature ranged from 14.3 to 23.8°C and there were 5 rainy days as well as intermittent rainfall; during the 3rd decade, the daily temperature was of

23.1°C (4.3°C warmer than in April 2015) with torrential showers with hail. Variable winds had a speed of 1-3 m/s, reaching sometimes up to 8-10 m/s in gusts (Sughd region). At the beginning of the month, the vegetation started drying out in the hills, plains and valleys. From mid-April, 80% of the vegetation was dry at the southern foothill of Khatlon region due to low rainfall and warm weather during the previous months and it started drying out in Sughd and Hissar valley. Onion and potato harvest began during the 2nd decade of April in the South and early ripening of cherries and apricots was noted. Germination of cotton, vegetables and other crops was in progress.

In Turkmenistan, April was cloudy and rainy.

In Uzbekistan, heavy rains continued in April throughout the country. Temperatures ranged from 15/18°C at night to 25/28°C during the day. Luxuriant spring ephemeral plants were developing.

Area treated in April 2016

Afghanistan	52 646 ha (March and April)
Kazakhstan	53 700 ha
Kyrgyzstan	16 667 ha
Russia	2 010 ha
Tajikistan	24 251 ha
Turkmenistan	26 124 ha (and 39 906 ha since the beginning of the campaign as per updated figure)
Uzbekistan	59 000 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• **SITUATION**

No survey operation was carried out and no locust hatching has been reported so far.

• **FORECAST**

Adjusted forecast will be available after surveys start.

Azerbaijan

• **SITUATION**

Moroccan Locust (DMA) hatching started in late April in the Eldar steppe (in the northwest of the country, along the Georgian border), where chemical treatments began.

• **FORECAST**

Mass hatching followed by hopper development will occur during the forecast period resulting in control operations that should start from early May.

Georgia

• **SITUATION**

No DMA hatching was detected in April.

• **FORECAST**

With increase of temperatures, DMA hatching is expected during the 1st half of May and CIT hatching by the end of May.

CENTRAL ASIA

Afghanistan

• **SITUATION**

Locust survey and control operations started from 3rd to 5th March onwards in five northern and north-eastern provinces, namely Baghlan, Balkh, Kunduz, Samangan and Takhar. During April, DMA hopper bands of 1st to 4th instars were present, with prevalence of 2nd and 3rd instars on 30 April. Since the beginning of the 2016 locust campaign, a total of 52 646 ha has been treated by ground teams using pyrethroids and an Insect Growth Regular, of which 13 036 ha in Baghlan, 9 540 in Balkh, 6 980 in Kunduz, 18 320 in Samangan and 4 770 in Takhar.

• **FORECAST**

DMA hatching is expected during the 2nd half of May in the other parts of its distribution area while fledging should start by the 2nd decade of May in north and north-eastern provinces. There is also a possibility of

appearance of adults from insecure areas where survey and control operations cannot be carried out.

Kazakhstan

• SITUATION

DMA spring egg-pod survey were completed on 14 500 ha in the South (South-Kazakhstan and Zhambyl oblasts). Egg-pods were found on almost 23.5% of that area. Number of eggs per pod varied from 16 to 34; from 1 to 14% of egg-pods were damaged. In South-Kazakhstan, hatching started on 1st April, 10 days earlier than in 2015. Up to 30 April, 549 000 ha were surveyed, out of which 146 000 ha were found infested by 1st to 4th instar hoppers, including 57 200 ha exceeding the economic threshold (ET). In Zhambyl, hatching started on 25 April. Surveys concerned 9 900 ha, of which 3 200 ha were found infested, including 1 200 ha over ET. A total of 53 700 ha were treated against DMA hopper bands.

CIT spring egg-pod surveys were carried out on 137 400 ha; egg-pods were found on 29 900 ha at a density up to 2 egg-pods/m² on 20 500 ha, from 2 to 5 egg-pods/m² on 4 800 ha, from 5 to 10 egg-pods/m² on 2 500 ha and of more than 10 egg-pods/m² on 2 100 ha. The number of eggs per pod varied from 8 to 50 and damaged egg-pods from 1 to 50%. The highest percentage of damaged egg-pods (40-50 %) was reported in Akmola, Almaty and West-Kazakhstan oblasts. Hatching started on 28 April in Almaty; the infested area was of 200 ha at a density up to 5 hoppers/m².

LMI spring egg-pod surveys were carried out on 34 200 ha; egg-pods were found on 4 600 ha at a density up to 2 egg-pods/m² on 3 600 ha, from 2 to 5 egg-pods/m² on 600 ha, from 5 to 10 egg-pods/m² on 200 ha and of more than 10 egg-pods/m² on 90 ha. The number of eggs per pod varied from 24 to 96 and damaged egg-pods from 1 to 37 %. The highest percentage of damaged egg-pods (37 %) was reported in West-Kazakhstan. No hatching has been observed so far.

• FORECAST

DMA fledging is expected in May in South-Kazakhstan and Zhambyl. CIT mass hatching is expected during the 1st decade of May in South-

Kazakhstan while hatching should occur during the 2nd decade of May in West- and North-Kazakhstan and during the 3rd one in East-Kazakhstan. LMI hatching should start during the 3rd decade of May in South- and West-Kazakhstan and during the 1st decade of June in North-Kazakhstan.

Kyrgyzstan

• SITUATION

From 5 April to 5 May, surveys were carried out on 22 616 ha in Jalal-Abad and Batken provinces, of which 18 430 ha were infested by large DMA hopper bands of 3rd to 5th instars mainly in Jalal-Abad (15 350 ha). The band size ranged from 0.5 to 2 ha and their density from 8 to 17 hoppers/m². Although hoppers prevailed, some adults were observed in Batken (Kadamjai district). Ground chemical control operations using pyrethroid and organophosphate were undertaken on 16 667 ha, of which 14 450 ha in Jalal-Abad and 2 217 ha Batken.

• FORECAST

During the 1st and 2nd decades of May, DMA mass hatching is expected in Batken and Osh –and will probably continue until the 3rd one- while fledging will occur in Jalal-Abad. CIT mass hatching should start during the 2nd and 3rd decades of May in Chui, Naryn and Talas provinces.

Russian Federation

• SITUATION

Spring egg-pod surveys continued in April; egg-pods were found on 131 400 ha and egg survival was estimated at 85-95%. The average density of egg-pods was of: 0.3-1/m² in the Central FD, 2.25-125/m² in the Southern FD, 0.98-45/m² in the North Caucasus FD, 0.7-4/m² in the Volga FD, 1-4.7/m² in the Siberian FD

and 0.2-1.5/m² in the Far East FD. Hatching started for grasshoppers in the South and for DMA in Dagestan and Kalmykia republics and in Stavropol krai. A total of 2 010 ha were treated in Dagestan republic and Stavropol krai.

• **FORECAST**

Grasshopper and DMA hatching will continue followed by hopper development. CIT hatching is expected in early May and LMI hatching in early or mid-May.

Tajikistan

• **SITUATION**

During surveys carried out in April and up to 1st May, 34 053 ha were found infested mainly by DMA hopper bands. From the 3rd decade of April, fledging followed by mating were observed in the southern part of Khatlon and fledging started in the southern part of the Region of Republican Subordination. In Sughd, late instar DMA hopper bands were present at a density of 40-60 hoppers/m². CIT hatching started in early April in Khatlon and on 21 April in Sughd; at the end of the month, hopper bands of 2nd to 4th instars were present. A total of 24 251 ha were treated by ground with hand-held and tractor-mounted sprayers, of which 1 400 ha against CIT.

FORECAST

Completion of DMA life cycle is expected in May in the southern parts of the country while CIT hopper development will come to an end and fledging and maybe breeding occur before the end of the month.

Turkmenistan

• **SITUATION**

During April, 26 124 ha were treated by ground against DMA adult populations, mainly close to the borders with Iran and Uzbekistan. Since the beginning of the campaign, a total of 39 906 ha were treated against locusts (updated figure).

• **FORECAST**

No further development is expected this year.

Uzbekistan

• **SITUATION**

DMA fledging started in the South, along the borders with Afghanistan, Tajikistan and Turkmenistan while DMA hopper bands of 2nd and 3rd instars were present at a density of 300-450 hoppers/m² in Jizzah, Navoiy, Samarkand and Tashkent areas. Despite an early hatching as compared to 2015, persisting heavy rains continued to slow down hopper development. CIT and grasshopper hatching was observed close to lake Aydarkul. No LMI hatching has been reported. Intensive control operations started against DMA in early April using pyrethroids, Imidacloprid and Insect Growth Regulator. So far, 59 000 ha have been treated, of which 31 000 ha in Surkhandarya, 25 000 ha in Kashkadarya and 3 000 ha in other areas.

• **FORECAST**

During the forecast period, DMA fledging will generalize, followed by mating and egg-laying. Mass CIT hatching will occur and LMI hatching will start.

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.

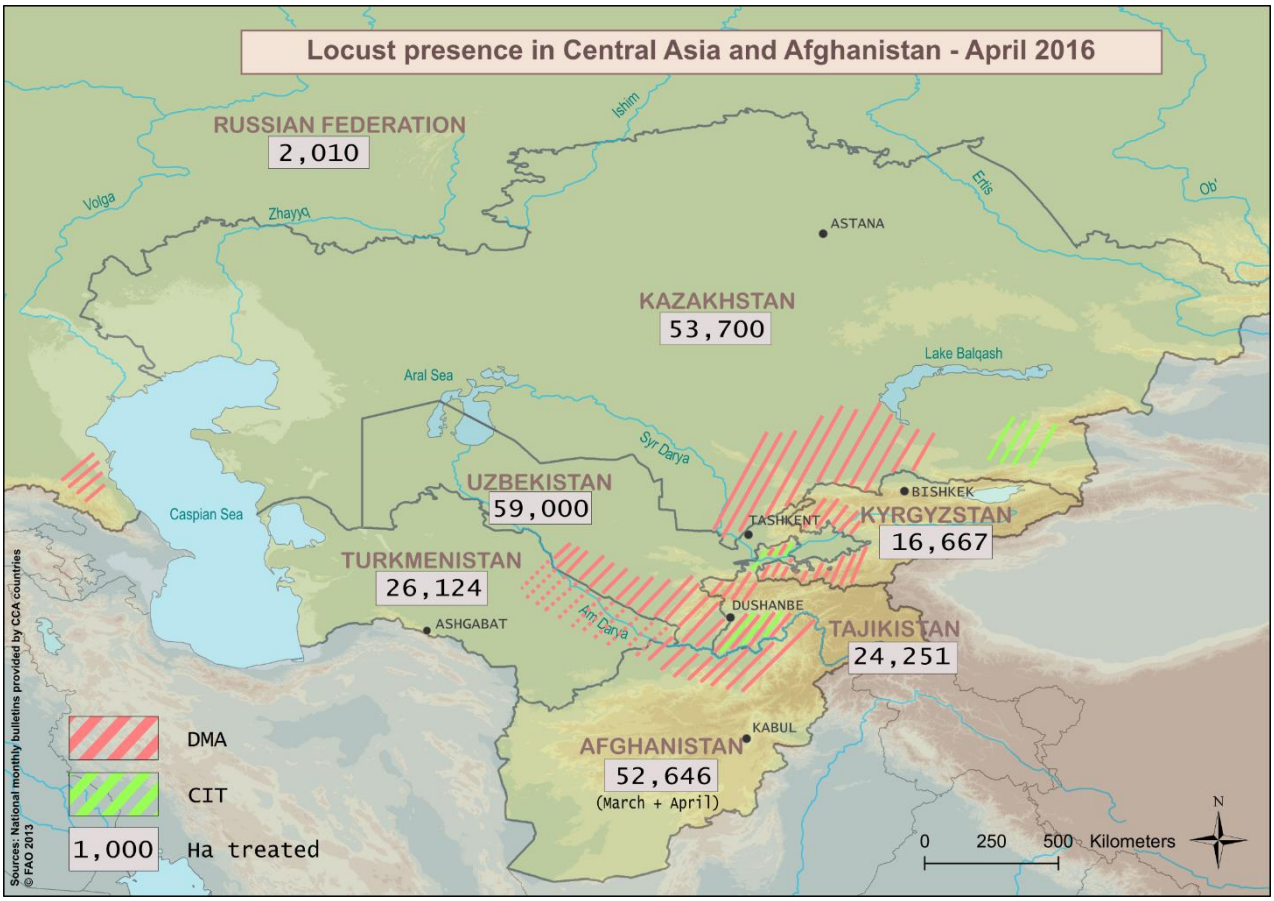
Events and activities in April 2016

- **Fellowships on locust management:** Screening of candidatures and ranking ensured by related E-committee and FAO.
- **Training-of-trainers on locust management - national sessions on locust monitoring:**
  - Three national sessions delivered in Tajikistan by the Master trainers to the benefit of 39 Locust Experts, as follows: Kurgan-Tube (Khatlon) on 12-13 April 2016, Dushanbe on 16-17 April and Khujand (Sughd) on 6-7 May.
  - One national session delivered in Kyrgyzstan (Batken) by the Master trainers for a total of 30 Locust Experts on 11-13 April 2016.
- **Locust Geographical Information System (GIS) in CCA**:
  - Automated System for Data Collection (ASDC): final versions available in English and Russian; additional translations in national languages requested to concerned countries; ASDC Manual user under preparation;
  - GIS database and database management system (basic functions) ready to be deployed and tested with ASDC field data.
- **Joint or cross-border surveys**:
  - Postponement of the cross-border survey between Tajikistan and Turkmenistan, initially scheduled in early April 2016 (new dates still to be provided).
  - Postponement of the cross-border survey between Tajikistan and Uzbekistan, initially scheduled on 21-26 April 2016 (new dates still to be provided).
- **Human Health and Environmental issues:**
  - E-Committee on management of empty drums of pesticide used for locust control: analytical report prepared and under review by FAO Experts.
  - Human Health and Environmental Monitoring Teams in Kyrgyzstan and Tajikistan: Action Plans provided to FAO for technical and operational support.
- **Procurement of locust survey and control equipment:** ongoing process in the framework of project GCP/INT/238/JPN to the benefit of Afghanistan, Kyrgyzstan and Tajikistan.
- **Annual regional Technical Workshop on Locusts in CCA:** exchanges still ongoing with Turkmenistan.

Forthcoming events and activities in May 2016

- **Fellowships on locust management:** final decision on selected students to be taken in early May; arrangements with hosting institutions to be started immediately after.
- **Locust Geographical Information System (GIS) in CCA:**
  - ASDC versions in national languages to be finalized and made available; ASDC Manual user to be released; ASDC to be used as widely as possible by countries.
  - E-Committee to start its work to develop the technical specifications for summary, analysis and forecast algorithms.

- **Joint or cross-border surveys:**
  - Joint survey in Georgia (Kakheti), scheduled on 11-13 May 2016, with participation of 13 Locust Experts from Armenia, Azerbaijan, Georgia and the Russian Federation; Mr Yene Belayneh, Senior Technical Adviser, Pests and Pesticides, United States Agency for International Development (USAID)/Office of United States Foreign Disaster Assistance (OFDA), Washington, will join the survey.
  - Cross-border survey between Kyrgyzstan and Uzbekistan (Fergana valley) scheduled on 16-25 May 2016.
- **Human Health and Environmental issues:**
  - Human Health and Environmental Monitoring Team in Kyrgyzstan: two monitoring missions to be undertaken during locust control operations carried out in Jalal-Abad in May.
  - Human Health and Environmental Monitoring Team in Tajikistan: three monitoring missions to be undertaken during locust control operations in Khatlon (two missions) and in Sughd (one mission), from late April and during May.
- **Procurement of locust survey and control equipment:** ongoing process in the framework of project GCP/INT/238/JPN to the benefit of Afghanistan, Kyrgyzstan and Tajikistan.
- **Annual regional Technical Workshop on Locusts in CCA:** final decision on venue and date in autumn 2016 to be taken.



The maps presenting the areas treated in 2014 and 2015 in CCA and the forecast for 2016 can be found at:

http://www.fao.org/ag/locusts-CCA/common/ecg/1188/en/CCA_Locust_Workshop_2015_Report_FINAL_EN.pdf