



## LOCUST BULLETIN No. 53



FAO - Plant Production and Protection Division (AGP)

20 April 2018

**Situation level: CAUTION in Tajikistan for DMA only**

**Situation level: CALM everywhere for the three locust pests**

### General situation during March 2018 Forecast until mid-May 2018

Moroccan Locust (DMA) hatching started much earlier than last year in southern Central Asian countries, namely Afghanistan, Tajikistan and Uzbekistan (and probably Turkmenistan), as a result of a cool winter and an early spring warming, both seasons being sometimes also dry. For this reason, DMA situation is already considered as critical in Tajikistan. During the forecast period, DMA hopper development will continue in those four countries while hatching will start in Kazakhstan and the Russian Federation as well as in Azerbaijan and Georgia. Italian Locust (CIT) hatching may start by the end of the forecast period in some Caucasian and Central Asian countries. So far, almost 57 000 ha have been treated against DMA hopper bands.

**Caucasus.** No locust hatching was reported so far. DMA hatching should start respectively during the 2nd and 3rd decade of April in Azerbaijan and Georgia while CIT hatching is not expected before the end of the forecast period.

**Central Asia.** While egg-pod surveys were in progress in Kazakhstan, Kyrgyzstan and the Russian

Federation, DMA hatching started in **Afghanistan**, **Tajikistan** and **Uzbekistan** - and probably also in Turkmenistan - up to 20 days earlier than in 2017. It started on 2<sup>nd</sup> April in **Kyrgyzstan**. A total area of a bit more than 60 000 ha was treated in the above-mentioned three countries where DMA hatching started in March. DMA hopper development will continue with fledging starting from the end of the forecast period; hatching will start elsewhere. CIT hatching should start by the end of the forecast period.

### Weather and ecological conditions in March 2018

The weather was warmer than usual in almost all Caucasian and Central Asian countries, already resulting in early hatching in southern Central Asia (CA) countries.

In **Caucasus**, the weather was warming with temperatures higher than in March 2017.

In Armenia, during March, daily temperatures ranged from -2 to +10°C in lowlands and from -3 to +15°C at foothills and were much higher than in March 2017.

In Azerbaijan, the weather was mostly cool in March (average temperatures of 6/8°C) with significant precipitations. Wind speed was of 6-9 m/s. The natural vegetation cover was low with green sprouts.



In Georgia, the weather conditions during the winter period and early spring were neither very cold nor rainy; therefore, egg-pods should not have been damaged and egg survival should be high. The vegetation cover was green and dense.

In **Central Asia**, the weather was warmer than usual in all countries except in the Russian Federation. Therefore, locust hatching started earlier than usual.

In Afghanistan, warm weather prevailed in March with temperatures exceeding 22°C. Almost no rain fell, in particular in the southern, western, northern and northeastern parts of the country. These conditions resulted in early locust hatching.

In Kazakhstan, the weather was variable but warmer than in March 2017. In the South, the weather was variable, mostly cold with precipitations in the form of rain and snow (up to 88 mm). The average daily temperature ranged from -7 to +23°C with minimum of -9°C (at night) and maximum of +26°C, which corresponds to much higher temperatures than in March 2017. Relative humidity ranged from 17 to 100%. North-easterly and south-westerly winds prevailed at a speed of 1-8 m/s and up to 20 m/s in gusts. In the East, the weather was unstable with important temperature variations and precipitations as rain and snow (up to 68.9 mm). The average daily temperature was of -1.8°C (8°C more than in March 2017) with minimum of -28°C (at night) and maximum of +15°C. The soil was frozen up to 150-170 cm. Relative humidity was of 81.7 %. The wind direction was variable but south-easterly and south-westerly winds prevailed at a speed of 1-3 m/s. In the West, the weather was variable with sunny and rainy days (up to 22.8 mm). The average daily temperature ranged from -19°C to +10.5°C, with minimum of -24°C and maximum of +15.0°C, i.e. bigger variations than in March 2017. Relative humidity was of 60-94 %. The wind direction was variable with prevailing south- and north-easterly prevailing at a speed of 0.8-10 m/s. In the North, the weather was variable with sunny, cool, cloudy, rainy and snowy days (up to 28 mm). The average daily temperature ranged from -22.5°C to 4.5°C

with minimum of -27.3°C and maximum of +8°C, i.e. bigger variations than in 2017. The snow cover varied from 8 to 27 cm and the soil was frozen as deep as 100-165 cm. Relative humidity ranged from 59 to 98 %. South-westerly and south-easterly winds prevailed at a speed of 1-6 m/s and up to 20 m/s in gusts.

In Kyrgyzstan, the average monthly temperature was higher to the climatic norm by 1 to 2°C, ranging from 6 to 8°C. Temperatures ranged from 0/3°C to +2/9°C at night and from 13°C to 16°C during the day. At foothills, temperatures ranged from 2/5°C to 0/8°C at night and from 5/14°C and up to 16°C during the day. The monthly amount of precipitation was above the normal (ranging from 35 to 50 mm and from 32 to 58 mm at foothills).

In the Russian Federation, the weather was colder than usual, except in the North Caucasus Federal District (FD) where it was warmer and in the Far Eastern FD (within the norm). In southern regions of the Central FD, the average monthly temperature was of -6.9°C, i.e. 5°C below the normal. Rains were within the norm, amounting 59 mm. In North Caucasus FD, the weather was warm with average temperature ranging from 2.1 to 5.3°C, i.e. 1.5-2.3°C above the norm. Rains amounted 29 mm, representing 110 % of the norm. In the Southern FD, average temperatures ranged from -0.6 to 1.3°C, i.e. 0.2-7.6°C below the norm. Rains were also below the norm. In the Volga FD, the average temperatures during the 1<sup>st</sup> decade varied from -11.3 to 12.7°C, i.e. 4.5°C below the normal. Rains amount varied from 7 to 23 mm, which is 67 % below the annual average value. In the Ural FD, average temperatures ranged from 12.1 to 12.4°C, i.e. 4°C below the norm. Rains varied from 5 to 22 mm, which was within the norm. In the Siberian FD, the average temperature was of -6.7°C during and below the norm by 1°C. Rains amounted 49 mm. In the Far Eastern FD, the average temperature was of -6.5°C during the 1<sup>st</sup> decade of March and rains amounted 55 mm, both values being within the norm.



In Tajikistan, the weather was warm and dry during the 1<sup>st</sup> decade of March with average temperatures of 15-20°C, ranging from 16 to 31°C during the day and from 9 to 14°C at night. As per forecast from the National Meteorological Centre, temperatures will exceed 30°C in April in the valleys and rains should fall for 3-6 days during the 1<sup>st</sup> decade.

In Uzbekistan, because of high temperatures in February, drought was observed throughout the country in March, which was even warmer with temperatures ranging from 28 to 31°C in the South. At foothills and in mountainous areas, annual plants dried out at mid-March. Vegetation density was very low.

### Area treated in March 2018

Afghanistan	3 158 ha
Tajikistan	11 477 ha
Uzbekistan	42 000 ha

### Locust situation and forecast

(see also summary on page 1)

#### CAUCASUS

##### Armenia

###### • SITUATION

No survey or control operations were carried out as weather conditions were not yet suitable for locust hatching. The first surveys are scheduled in May.

###### • FORECAST

*No Italian Locust (CIT) hatching or hopper development is expected before May. As per preliminary forecast dated October 2017, control operations are planned to be carried out on 1 000 to 2 000 ha in 2018, which corresponds to the areas treated in 2017.*

##### Azerbaijan

###### • SITUATION

Egg-pod surveys were carried out in March to check the status of the over-wintering eggs and foresee the hatching period. They concerned about 38 % of the last the last year infested area. No hatching was observed

during these surveys. Awareness was done towards local populations and in particular farmers in order to ensure that they will alert plant protection staff when they see locust hatching.

###### • FORECAST

*Mass Moroccan Locust (DMA) hatching followed by hopper development are expected during the 2<sup>nd</sup> decade of April. Control operations will start at that time. It is anticipated that 55 000 to 65 000 ha will need to be treated during the 2018 locust campaign, an estimation similar to the one for the 2017 campaign, when a bit more than 39 000 ha were then effectively treated.*

##### Georgia

###### • SITUATION

So far, no locust activities were carried out. A good egg survival is expected as there was no excessive moisture, which could have resulted in direct damage to egg-pods or development of fungus. A total of 20 000 litres of pesticides (Deltamethrin and Chlorpyrifos) in ultra-low volume (ULV) formulation have been purchased by the National Food Agency in view of the 2018 locust campaign.

###### • FORECAST

*DMA hatching should start by the end of April. In 2018, control operations should concern 20 000 to 25 000 ha, which is less than the forecast for 2017, when 15 100 ha were then effectively treated.*

#### CENTRAL ASIA

##### Afghanistan

###### • SITUATION

As a result of suitable conditions, DMA hatching was observed in March in six out of the nine provinces where surveys have been carried out, namely: Baghlan, Balkh, Kunduz, Samangan, Sar-i-Pul and Takhar, in the northern and north-eastern parts of the country; no

hatching was seen in Badghis, Ghor and Nimroz. Control operations started immediately and 3 158 ha were treated. During the month, pesticides and equipment (including sprayers) required for the 2018 locust campaign were transferred to the concerned provinces.

• **FORECAST**

*DMA hopper development will continue in April and fledging could start by the end of the forecast period. In 2018, it is anticipated that control operations will concern about 150 000 ha as it was the case in 2017, when almost 115 000 ha were then effectively treated.*

**Kazakhstan**

• **SITUATION**

Spring surveys started in the South both for DMA and CIT. As far as DMA is concerned, 97 400 ha were surveyed in South-Kazakhstan and Zhambyl oblasts. Egg-pods were found on 89 020 ha (91 %) including at a density up to 1 egg-pod/m<sup>2</sup> on 20 130 ha, from 1.1 to 2 egg-pods/m<sup>2</sup> on 20 470 ha, from 2.1 to 5 egg-pods/m<sup>2</sup> on 30 060 ha, from 5.1 to 10 egg-pods/m<sup>2</sup> on 15 720 ha and of more than 10 egg-pods/m<sup>2</sup> on 2 640 ha. The number of eggs per pod varied from 19 to 40. From 1 to 20 % of egg-pods were found infested by parasites or affected by diseases. Because of an important increase of DMA infested areas in these two southern oblasts in 2017, it is expected that the situation could further deteriorate this year; therefore as careful as possible planning and implementation of the survey and control operations will be undertaken. Concerning CIT, an area of 750 ha was surveyed in Almaty oblast where egg-pods were found on 80 ha at a density of 1 egg-pod/m<sup>2</sup>. From 5 to 26 % of the CIT eggs were infested or affected. In the eastern, western and northern regions, preparation for spring surveys, which will start in April, was in progress.

• **FORECAST**

*DMA hatching is expected to start in early April in South-Kazakhstan and during the 2<sup>nd</sup> decade in Zhambyl, i.e. a decade earlier as compared to 2017.*



*Control operations against locusts and grasshoppers are planned on more than 1.9 million ha in 2018, which is similar to the forecast for 2017 and a bit higher (2 %) than the area effectively treated that year.*

**Kyrgyzstan**

• **SITUATION**

Spring egg-pod surveys started during the 1<sup>st</sup> decade of March. A total of 5 620 ha were surveyed and egg-pods found on 2 600 ha at an average density of 1.7 egg-pod/m<sup>2</sup>; 12 % of egg-pods were infested by parasites or affected by predators or diseases. No hatching was observed in March during these surveys, which were still in progress in northern oblasts at the end of the month. DMA hatching started on 2<sup>nd</sup> April in Jalal-Abad (Noojen district), where 800 ha were found infested the following day, and on 5<sup>th</sup> April in Osh (Aravan district). Specialists from the Department of Chemicalization and Plant Protection together with staff from the regional offices and rural districts were carrying out large-scale surveys to identify areas in view of control operations.

• **FORECAST**

*DMA mass hatching is expected during the 2<sup>nd</sup> half of April in Jalal-Abad and Osh oblasts while CIT hatching should start during the 1<sup>st</sup> half of May in Chui and Talas oblasts. Control operations should concern 120 000 ha in 2018, which is twice the forecast for 2017 and corresponds to 12 % more than the area effectively treated.*

**Russian Federation**

• **SITUATION**

Spring egg-pod surveys started in the South and North FDs. In the Republic of Dagestan, 25 ha were surveyed of which 6.9 ha were found infested at a density of 1.8 egg-pod/m<sup>2</sup>. In the Republic of Ingushetia, 170 ha out of the 620 ha surveyed were infested at a density of 0.2 egg-pod/m<sup>2</sup>. In the Astrakhan region,

1 780 ha out of the 4 430 ha surveyed were infested at a density of 0.33 egg-pod/m<sup>2</sup>. According to preliminary data, the survival rate varied from 85 to 92 % in all these areas, in line with the weather conditions suitable for locust over-wintering during the autumn/winter period.

• **FORECAST**

*In April, egg-pod surveys will intensify and be carried out in many regions to assess the status of the over-wintering egg-pods. It is planned to carry out control operations on 841 000 ha, about 9 % more than the area treated in 2017.*

**Tajikistan**

• **SITUATION**

DMA hatching was observed during the 1<sup>st</sup> decade of March in five districts (four in Khatlon and one in the Region of Republican Subordination), i.e. 18-20 days earlier than in 2017. DMA hatching continued to be observed until the end of March in all southern and southwestern districts. By the end of March, 2<sup>nd</sup> hopper instar prevailed in most of these districts. To be noted that the warm spring weather and the related low level of grass in the pastures - the usual locust habitat - will cause the rapid move of locusts in search of food towards greener areas; that will create a direct threat to agricultural areas. Therefore, the current DMA situation is considered as critical and requiring attention. As of 31<sup>st</sup> March, almost 11 477 ha had been treated against DMA hopper bands.

• **FORECAST**

*In April, DMA hatching will come to an end in all other districts while CIT hatching may start from late April. Due to the arid spring, a very quick spreading of the locust populations is expected. Control operations will continue. Overall, as per forecast, surveys will be carried out on 743 170 ha, of which 306 645 ha during spring (locust hatching), almost 229 560 ha during summer (fledging) and 206 970 in autumn (egg-laying); control operations should concern 104 000 ha in 2018, which represents an increase of 7 % as compared to the 2017 forecast but corresponds to the treated area.*



**Turkmenistan**

• **SITUATION**

No report was received. In view of the situation in the neighbouring countries, DMA hatching started probably in early March and hopper development should be in progress.

• **FORECAST**

*DMA hopper development will continue with likely fledging by the end of the forecast period. Overall, control operations should be carried out on 109 000 ha in 2018, about 83 % less than the forecast for the 2017 campaign, during which 116 000 ha were then effectively treated.*

**Uzbekistan**

• **SITUATION**

DMA hatching has been observed since 12 March in Surkhandarya, Kashkadarya and Samarkand provinces. No CIT or LMI hatching was observed so far. As of 31<sup>st</sup> March, 42 000 ha have been treated against DMA hopper bands.

• **FORECAST**

*DMA hatching is expected elsewhere by mid-April. During the forecast period, hopper development should concern all regions. CIT hatching will start during the forecast period. Control operations should be needed on 523 000 ha in 2018, about 4 % more than the forecast for 2017 and 7 % more than the area treated that year.*

**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 5<sup>th</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.

#### **January - March 2018 events and activities**

- **Project "Improvement of Locust Management in Afghanistan, Kyrgyzstan and Tajikistan" (GCP/INT/238/JPN):** 3<sup>rd</sup> Project Steering Committee held on 17 January 2018 with the three concerned countries, Japan/Japan International Cooperation Agency (JICA) and FAO (country offices and headquarter).
- **Training-of-trainers on locust management:**
  - Afghanistan – National session on locust Automated System on Data Collection (ASDC), delivered by the Master-Trainers to the benefit of 19 Afghan Locust Experts, on 12-17 March 2018 in Pul-i-Khumri city.
  - Tajikistan – Four two-day national briefing sessions on locust spraying and risk reduction, including ASDC, delivered by the Master-Trainers to the benefit of 57 Tajik Locust Experts in March 2018: in Khatlon (Jayhun, 6-7 March; Dangara, 8-9 March), RRS (Rudaki,



15-16 March) and Sughd (Khudjand and B. Ghafurov on 19-20 March).

- **Human Health and Environmental issues:** Action Plan prepared by the Kyrgyz Human Health and Environmental Monitoring Teams (including six missions from mid-April to June) and comments sent back by FAO International Consultant, Environmental Expert.
- **2018 Calendar on safety measures associated to locust control:** printed out in English, Kyrgyz, Tajik and Russian and dispatched to the attention of local populations in Kyrgyzstan and Tajikistan; Dari version (with Gregorian as well as solar and lunar Islamic calendars -starting in March) finalized.
- **Procurement of locust survey and control equipment:** ongoing process to the benefit of Afghanistan, Kyrgyzstan and Tajikistan under project GCP/INT/238/JPN as well as of Azerbaijan and Uzbekistan under project GCP/SEC/004/TUR.
- **Resource mobilization:** official letters confirming countries' interest in pursuing the Programme received from Afghanistan, Kazakhstan, Kyrgyzstan and Uzbekistan; Concept Note for the newly-envisaged project for Central Asia further discussed with Japan/JICA and reviewed, and discussions also ongoing with some countries; Exchanges with another partner, including for Caucasian countries, ongoing.

#### **Forthcoming events and activities in August 2017**

- **Training-of-trainers on locust management:** six two-day briefing sessions on locust spraying and risk reduction, including ASDC, to be delivered by the Master-Trainers from April to July 2018 in Kyrgyzstan, the first one to the benefit of about 15-20 Kyrgyz Locust Experts being scheduled on 3-4 April in Jalal-Abad (Aksy).

- **Training/Refresher course on locust monitoring and information management, including ASDC,** to the benefit of 20 Azeri Locust Experts scheduled on 30 April-4 May 2018, in Ganja, Azerbaijan (to be immediately followed by in-depth introduction of the Caucasus and Central Asia Locust Management System -CCALM- in early May).
- **Human Health and Environmental issues:** Action Plan of Human Health and Environmental Monitoring Teams expected from Azerbaijan and Tajikistan; First monitoring mission scheduled on 16-20 April in Jalal-Abad (Aksy and Nookan districts), Kyrgyzstan.
- **2018 Calendar on safety measures associated to locust control:** Dari version to be printed out and dispatched in Afghanistan.
- **Procurement of locust survey and control equipment:** ongoing process.
- **Resource mobilization:** ongoing process, including official letters confirming countries' interest in pursuing the Programme expected from other countries.



The below two maps of CCA present the areas treated in 2016 and 2017 as well as the forecast for 2018 (as per data provided during the annual Technical Workshop on Locusts in CCA, held in Dushanbe, Tajikistan, November 2017). A third map shows the locust and anti-locust situations in Central Asia in March 2018.





