Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 41

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

Situation level - CAUTION in Tajikistan and Uzbekistan (DMA)

Situation level: CALM elsewhere for the three locust pests

General Situation during March 2016 Forecast until mid-May 2016

Moroccan Locust (DMA) hatching started up to one month earlier than usual in at least three Central Asian countries, namely Kyrgyzstan, Tajikistan and Uzbekistan –and probably also in Afghanistan and Turkmenistan- following warm winter and early spring. During the forecast period, DMA hopper development will continue in these countries while hatching will start in Kazakhstan and Russia as well as in Azerbaijan and Georgia. Italian Locust (CIT) hatching may start before the end of the forecast period in most of Caucasian and Central Asian countries. So far, more than 19 000 ha were treated against DMA hopper bands.

Caucasus. No hatching was reported so far. DMA hatching is expected to start during the 3rd decade of April in **Azerbaijan** and in **Georgia**. CIT hatching should not start 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 already started in **Kyrgyzstan**, **Tajikistan** and **Uzbekistan** (and probably also in **Afghanistan** and **Turkmenistan**) up to one month earlier than in 2015. More than 19 000 ha were treated in these three countries, where DMA hopper development will continue while hatching will occur in the others. CIT hatching should start in the forecast period.

Weather and Ecological Conditions in March 2016

In Central Asia (CA), temperatures were higher than usual, except where heavy rains fell, while weather was still cool in Caucasus. Consequently, conditions were suitable for DMA hatching and development in southern CA countries.

In **Caucasus**, the weather was generally cool in March and not yet suitable for locust hatching.

In Armenia, during March, daily temperatures ranged from -10 to +10°C in lowlands and from -15 to +3°C at foothills, where snow and rain fell and frost occurred. Snow cover persisted in some regions and, more generally, pre-sowing works were suspended due to weather deterioration.

In Azerbaijan, the weather was generally cool and not suitable for egg development and hatching in March with average monthly temperatures of +5/+8°C and significant rainfall. Wind speed was of 3-5 m/s.

The vegetation cover was still low but greening and crops were in germination or tillering.

In Georgia, in the eastern part of the country, the traditional Moroccan Locust habitat, it snowed during 5 days in January and again 5 days in February. Monthly rainfall ranged from 13 to 40 mm from November to March, which received the biggest amount. In March, temperatures ranged from -1.8 to +23.8°C.

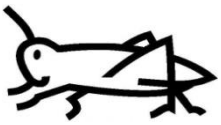
In **Central Asia**, after an exceptionally warm winter, temperatures continued to be higher than normal in early spring except when heavy rains fell as it was the case in the southwest of the Russian Federation and in Uzbekistan.

In Kazakhstan, the weather was still fresh and variable but significantly warmer than in March 2015. In the South, the weather was variable and precipitation occurred in the form of rain. The average daily temperature varied from +3.5 to +18.5°C with minimum of 0°C (at night) and maximum of +27°C. Relative humidity ranged from 25 to 98%. Westerly and south-westerly winds prevailed at a speed of 2-7 m/s. In the East, the weather was variable with sudden changes of temperatures and low precipitation as rain and snow. The average daily temperature ranged from -13 to +6°C with minimum of -19°C (at night) and maximum of +13°C. Relative humidity was of 56-86%. As a consequence of warm weather and rains, the snow cover had a maximum thickness of 30 cm during the 3rd decade of March. In the West, the weather was unstable with precipitation (up to 100 mm) as rain and snow. The average daily temperature ranged from -2°C to +13.5°C, with minimum of -4°C and maximum of +17.0°C. Relative humidity was of 63-91%. Erratic northerly and north-westerly winds prevailed at a speed of 1-15 m/s. In the North, the weather was unstable with rains (up to 78.2 mm) and snow, which began to melt. The average daily temperature was of -5°C (warmer by 1.7°C as compared to 2015) with minimum of 23.7°C and maximum of +10.8°C. The soil was frozen up to 130 cm. Relative humidity ranged from 66 to 95%. South-westerly winds prevailed.

In Kyrgyzstan, such an exceptionally warm winter had not been observed since 1964. In March, the monthly temperature was back normal and around 5-7°C. During the 1st fortnight, the temperature ranged from -5/0°C at night to 8/13°C during the day. During the 2nd fortnight, the temperature ranged from 3/8°C at night to 19/24°C during the day. The monthly amount of precipitation was above the normal in some areas (ranging from 28 mm to 111 mm at foothills).

In the Russian Federation, the weather was warmer than usual except in the Siberian Federal District (FD). In southern regions of the Central FD, the 1st decade of March was unusually warm, with average daily temperatures 8.9°C above normal; during the 2nd decade, the temperature dropped to -7°C at night. The very low precipitation (4 mm) represented 12.9% only of the monthly norm. In North Caucasus and South FDs, the weather was cloudy and characterized by high temperatures, from 3.9 to 5.2°C above historical averages of 6.0/7.8°C, sometimes reaching up to 25°C. Later in the month, the weather deteriorated with temperatures dropping to -1°C. Rainfalls were observed everywhere. In the Volga FD, the weather was abnormally warm, unstable and cloudy with insignificant rainfall; the average temperature was of -2.1°C, much higher than the usual -8°C. In the Siberian FD, the weather was variable in early March with significant day-to-day temperature fluctuations and little snowfall; average temperature of -0.5/5.5°C was below the norm.

In Tajikistan, the weather was warmer than usual in March, from 3 to 6°C more than in 2015. During the 1st decade, the average temperature ranged from 8°C at night to 22°C during the day and little rain fell. During the 2nd decade, the average temperature ranged from 11°C at night to an average of 14.6°C during the day and it rained for 2-3 days. During the last decade, the



average daily temperature was of 18.3°C and there were intermittent rains and showers with hail.

Variable winds had a speed of 1-6 m/s. At the beginning of the month, the vegetation was green in the hills, plains and valleys. From mid-March, up to 60% of the vegetation dried out at the southern foothill of Khatlon region due to low rainfall. In the South as well as in Sughd and Hissar valley, mass flowering of fruit trees occurred during the first two decades of March. Cotton, vegetable and other crop sowing started.

In Uzbekistan, after a warm and dry early spring, there was a sharp fall of temperature following heavy rains throughout the country from 12 March to 2 April. From mid-March, the daily temperatures at foothill ranged from 5/8°C at night to 12/15°C during the day. Spring ephemeral plants were slowly developing.

Area treated in March 2016

Kyrgyzstan	100 ha
Tajikistan	5 814 ha
Turkmenistan	7 569 ha
Uzbekistan	6 000 ha

Locust Situation and Forecast

(see also summary on page 1)

CAUCASUS

Armenia

• **SITUATION**

No survey operations were carried out as weather conditions were not yet suitable for locust hatching.

• **FORECAST**

No Italian Locust (CIT) hopper development is expected before May. According to preliminary forecast, control operations will be carried out on more than 1 500 ha in 2016, half the area treated in 2015.

Azerbaijan

• **SITUATION**

An end-of-winter survey of Moroccan Locust (DMA) egg-beds was carried out in March on 30% of the egg-bed sites identified in autumn 2015 to assess overwintering egg survival and determine the hatching period. No DMA hatching was observed.

• **FORECAST**

Warming and suitable weather conditions will boost hatching and hopper development, which is expected to occur in the 3rd decade of April. Control operations will start at that time and should concern 50 000 ha during the locust campaign, more than twice the area treated in 2015.

Georgia

• **SITUATION**

The National Food Agency has not carried out yet any survey. In view of the 2016 anti-locust campaign, it has purchased 20 000 litres of pesticide, 2 tractor-mounted sprayers and 9 pick-up for vehicle-mounted ULV sprayers.

• **FORECAST**

DMA hatching is expected at the end of April. Control operations should concern 40 000 ha in 2016, almost 20% more than in 2015.

CENTRAL ASIA

Afghanistan

• **SITUATION**

No bulletin was received but DMA hatching probably started in early March in the North.

• **FORECAST**

Following likely DMA hatching in March, hopper development will continue during the forecast period. It is expected that more than 160 000 ha will have to be treated in 2016, i.e. 14% more than in 2015.

Kazakhstan

• **SITUATION**

Locust spring egg-pod surveys started in the South; they were under preparation in the other parts of the country, where they should begin in April. In South-Kazakhstan and Zhambyl, 11 800 ha have been

surveyed and DMA egg-pods were found on almost 25% of that area at a density up to 2 egg-pods/m² on 2 135 ha, from 2.1 to 5 egg-pods/m² on 688 ha and from 5 to 10 egg-pods/m² on 53 ha. The number of eggs per pod varied from 16 to 34. From 1 to 14% of egg-pods were found infested by parasites or affected by diseases. In these two provinces, CIT egg-pod surveys were also carried out. In South-Kazakhstan, out of 3 000 ha surveyed, egg-pods were found on 15 ha at a maximum density of 1/m². In Zhambyl, out of 6 100 ha surveyed, egg-pods were found on a bit more than 23% of the area at a maximum density of 5/m². The number of eggs per pod varied from 22 to 40. From 1 to 6% of egg-pods were found infested by parasites or affected by diseases.

• **FORECAST**

It is expected that DMA hatching will start at the beginning of the 1st decade of April in South-Kazakhstan and around mid-April in Zhambyl. Control operations are planned on 1,8 million ha in 2016, almost half the area treated in 2015.

Kyrgyzstan

• **SITUATION**

Spring egg-pod surveys started during the 1st decade of March. As of 5th April, 3 460 ha had been surveyed with egg-pods found at a density of 1/m² on 620 ha. An average of 22% of egg-pods was infested by parasites or affected by diseases. These surveys are still in progress in the North. DMA hopper surveys were also carried out on 1 250 ha in Jalal-Abad, out of which 900 ha were infested at a density of 14-17 hoppers/m². A total area of 100 ha was treated with an ULV vehicle-mounted sprayer.

• **FORECAST**

DMA mass hatching is expected in April in Jalal-Abad, Osh and Batken oblasts. Control operations should concern the same area than in 2015, around 60 000 ha.

Russian Federation

• **SITUATION**

Spring egg-pod surveys started in the South; preliminary data indicated that egg survival was of 85-95%, prolonged winter thaw having negatively impacted the eggs. In the Chechen Republic, egg-pods were found on 1 359 ha at a density of 0.19 egg-pod/m² reaching a maximum of 1.1 on 3 ha along the Terek river. In Republic of Dagestan, egg-pods were found on 3 217 ha at a density of 2-9 egg-pods/ m²; egg mortality ranged from 10 to 30%. In Astrakhan oblast, conditions were suitable for egg over-wintering as per data gathered on 900 ha. The average number of egg-pods varied from 1 to 4/m² for the Asian Migratory Locust (LMI) and from 0.1 to 0.5/m² for the CIT.

No surveys were carried out elsewhere.

• **FORECAST**

Egg-pod surveys will start in all other regions in April and their results will be used to estimate the area to be treated (almost 800 000 ha were treated in 2015).

Tajikistan

• **SITUATION**

DMA hatching started on 1st March in Rayons of Republic Subordination (RRS), 30 days earlier than in 2015. On 7th March, DMA hopper bands, at a density of up to 60-100 hoppers/m², were observed in the RRS winter pastures; at the end of the month, they had reached the 2nd and 3rd instars. DMA hatching started on 7th March in Khatlon, 17 days earlier than in 2015; at the end of the month, 2nd and 3rd instar formed bands at a density of 80-100 hoppers/m². In the North (Sughd), DMA hatching started on 23rd March. No CIT hatching was reported so far. As of 1st April, the infested area was of 16 185 ha (almost twice the area infested at the same period in 2015). Ground control operations concerned 5 814 ha.

• Forecast

In April, DMA fledging is expected in the South (Khatlon) while CIT hatching followed by hopper development up to 4th/5th instar is expected in the North (Sughd). As per forecast, around 85 000 ha will have to be treated in 2016, a bit less than in 2015.

Turkmenistan

• SITUATION

A late report indicated that 7 569 ha were treated against DMA in March.

• FORECAST

DMA hatching and hopper development will continue during the forecast period. Control operations should be carried out on 100 000 ha in 2016, 90% less than in 2015.

Uzbekistan

• SITUATION

DMA hatching started to be observed from 6th March in the South (on warm slopes at foothills in Surkhandarya), along the borders with Afghanistan, Tajikistan and Turkmenistan, i.e. three weeks earlier than last year. The density within the bands was of 1 500-2 500 hoppers/m². Heavy rains from 12 March to 2 April slowed down the hopper development. No other locust pest has hatched so far. Up to early April, 6 000 ha were treated, of which 4 600 ha in Surkhandarya and 1 400 ha in Kashkadarya.

• FORECAST

During the forecast period, DMA fledging will occur and CIT hatching should start. During the 2016 anti-locust campaign, it is planned to treat about 440 000 ha (13% more than in 2015), of which 87.5% by ground and the remaining 12.5% by air using locally-produced pyrethroids and imidacloprid and IGR purchased to protect 30 000 ha.

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 and latchini@uwyo.edu.
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.

December 2015 – March 2016 events and activities

- **2016 monthly bulletins on locust situation and management:** recruitment of National Consultants in CCA countries for the preparation of the six national monthly bulletins of the 2016 locust season.

- **Fellowships on locust management:** new call for interest for students advertised from 10th December 2015 up to 22 March 2016 and first screening of candidatures carried out.
- **Internships on locust management**: organized from 31 January to 17 February 2016 for two Locust Experts from Afghanistan and Kyrgyzstan in the National Anti-Locust Center of Morocco, Agadir.
- **Training-of-trainers on locust management:** two regional sessions organized for a total of 16 Master-Trainers from Afghanistan, Kyrgyzstan, Tajikistan and Uzbekistan in Dushanbe, Tajikistan, on locust spraying and risk reduction (22-27 February 2016) –delivered by Mr S. Lagnaoui, Spraying Expert, and Mr H. Van der Valk, Environmental Expert- and on locust monitoring and information management (29 February-4 March 2016) – delivered by Mr A. Latchininsky, Locust Expert, and Ms N. Muratova, GIS Expert.

  Ms A. Monard attended the last days of the 1st session and the beginning of the 2nd one.
- **Locust Geographical Information System (GIS) in CCA**: update and translation into national languages of the Automated System for Data Collection (ASDC) ensured; updated ASDC version tested during the above-mentioned Training-of-trainers; development of the GIS (structure database and basic interface) underway.
- **Human Health and Environmental issues:** E-Committee on management of empty drums of pesticide used for locust control: information received from CCA countries and related analytical report under preparation.
- **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:** ongoing exchanges with Turkmenistan to set venue and date in autumn 2016.

Forthcoming events and activities in April 2016

- **Fellowships on locust management:** selection of students by FAO and E-Committee on fellowships by mid-April; arrangements with hosting institutions to be started.
- **Locust Geographical Information System (GIS) in CCA:** ASDC Manual user under preparation; development of the GIS underway.
- **Joint or cross-border surveys:**
  - Cross-border survey between Tajikistan (Khatlon and RRS) and Uzbekistan (Surkhandarya) scheduled on 21-26 April 2016.
  - Cross-border survey between Tajikistan and Turkmenistan initially scheduled in early April postponed to May 2016 as per countries' decision.
- **Training-of-trainers on locust management:**
  - National session on locust monitoring in Kyrgyzstan scheduled on 11-13 April in Batken.
  - National sessions on locust monitoring in Tajikistan scheduled on 12-13 April in Khatlon and during the month in Dushanbe and Sughd.
- **Training on locust monitoring, scheduled in early April in Orenburg, Russian Federation:** cancelled (or postponed to 2017).
- **Human Health and Environmental issues:** action Plans of the Human Health and Environmental Monitoring Teams in Kyrgyzstan and Tajikistan to be prepared and technical and operational support provided by FAO.
- **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 agreed upon.

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