Food and Agriculture Organization of the United Nations

Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 47

FAO - Plant Production and Protection Division (AGP) *13 April 2017*

Situation level: CALM everywhere for the three locust pests

General Situation during March 2017 Forecast until mid-May 2017

Moroccan Locust (DMA) hatching is starting slowly in southern Central Asian countries, namely Afghanistan, Tajikistan, Turkmenistan and Uzbekistan, as a consequence of prolonged cool temperatures and rains. During the forecast period, DMA hatching followed by hopper development will generalize in that four countries while hatching will start in Kazakhstan and Russia 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, 152 ha were treated against DMA hopper bands.

Caucasus. No locust hatching was reported so far. DMA hatching should start during the 2nd half 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**, **Turkmenistan** and **Uzbekistan** but much later than in 2016. An area of 152 ha was treated in Turkmenistan (less than 1.3% of the surface treated in March 2016). DMA mass hatching is expected at the beginning of the forecast period in southern CA countries, and not before the end of April in the others. CIT hatching should start by the end of the forecast period.

Weather and Ecological Conditions in March 2017

In Caucasus, the weather was still cool. In Central Asia (CA), temperatures were lower than usual and relatively heavy rains fell, except in the Russian Federation. Consequently, DMA hatching was delayed in all southern CA countries.

In **Caucasus**, the weather was generally cool and rainy 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. Snow and rain fell and frost occurred; the snow cover persisted in some areas. Pre-sowing works were suspended due to weather deterioration.

In Azerbaijan, the weather was mostly cool in March (average temperatures of 4/6°C) and rainy. Wind speed was of 5-6 m/s. The natural vegetation cover was still low with green sprouts.

In Georgia, moderate precipitations fell from November to March; in the eastern part of the country, which corresponds to the traditional Moroccan Locust habitat, it snowed up to February (for seven days). In March, which received the highest amount of rain (26 mm), air temperature ranged from -3 to +16.4°C and soil temperature from 3.9 to 12.6°C (average of 7.9°C).

In **Central Asia**, the weather was cooler than usual and generally rainy in March in all countries except in the Russian Federation, which delayed locust hatching.

In Afghanistan, low pressure systems in March resulted in good and widespread rains throughout the country and especially in the southern, western, northern and northeastern parts. These rains together with a drop of the temperatures of up to 10°C in the northern and northeastern parts delayed locust hatching.

In Kazakhstan, the weather was variable and still relatively cool, colder than in March 2016. In the South, the weather was variable, mostly clear with sunny days and precipitation occurred in the form of rain and snow (up to 60 mm). The average daily temperature varied from -10 to +9°C with minimum of -16°C (at night) and maximum of +11°C. Relative humidity ranged from 45 to 96%. South-easterly and north-westerly winds prevailed at a speed of 1-10 m/s. In the East, the weather was unstable with sudden changes of temperatures and low precipitation as rain and snow. The average daily temperature was of -10°C with minimum of -16°C (at night) and maximum of +3°C. Relative humidity was of 81%. North-westerly winds prevailed at a speed of 3 m/s. In the West, little rains fell and snow melted. The average daily temperature ranged from -6.7°C to +4.9°C, with minimum of -20°C and maximum of +11.0°C. Relative humidity was of 54-79%. Overall, the weather conditions were suitable for overwintering of the pests. In the North, the weather was variable with precipitation in the form of rains and snow, which started to melt. The average daily temperature was of -10.2°C with minimum of -22°C and maximum of +1°C. The soil was frozen up to 100-115 cm. Relative humidity ranged from 63 to 94%. Wind speed was of 0.8-8.6 m/s and up to 9-15.3 m/s in gusts.

In Kyrgyzstan, the weather was cold in February and March, delaying the spring by 20-30 days as compared to previous years. In March, the average monthly temperature was of 5-7°C, below normal by 1-3°C. Temperatures ranged from -5/0°C to +2/7°C at night and from +10/15°C to 17°C during the day. The monthly amount of precipitation was above the normal (ranging from 29 mm to 52 mm).

In the Russian Federation, the weather was warmer and dryer than usual, except in the Siberian Federal District (FD). In southern regions of the Central FD, the 1st decade of March was within the norm except for the rain (4 mm only representing 12.9% of the norm). In North Caucasus and South FDs, high temperatures (from 5.4 to 10.2°C, i.e. 5-7.5°C above the norm) and absence of rain characterized the 1st decade; during the 2nd decade, temperatures dropped, rains fell and strong wind blew. In the Volga FD, the average temperatures were of -3/-6°C at the beginning of the month, i.e. above the average by 4-6°C; very little rain fell (0.3-5 mm during the 1st decade). In the Siberian FD, the temperatures were within the long-term average data; very little rain fell and weak to moderate winds blew.

In Tajikistan, mild weather prevailed in November, the weather was still warmer than usual in December (average daily temperatures of +6/+8°C) and also in January and February with average daily temperatures of +8/11°C in the valleys. On the contrary, the 1st decade of March was relatively cool and rainy with abundant snowfalls recorded throughout the country, reaching 20-25 cm in the valleys and up to 0.8-1.6 m in the mountainous areas. During the 3rd decade, continuous rains fell. As per forecast from the National Meteorological Centre, temperatures will range in April from +9 to 14°C during the night and from 16 to 31°C

during the day. Some rains should fell during the 1st decade.

In Turkmenistan, the weather was highly variable, cloudy and rainy in March with average temperature of +8/10°C.

In Uzbekistan, the temperatures were of +12/15°C during the day and of +5 /8°C at night. However, since the beginning of spring, there has been a sharp cooling with widespread and heavy rains throughout the country. Spring ephemeral plants were slowly developing at a density exceeding 200 plants/m².

Area treated in March 2017

Turkmenistan 152 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. The first surveys are scheduled in May.

• **FORECAST**

No Italian Locust (CIT) hopper development is expected before May. As per preliminary forecast dated October 2016, control operations are planned to be carried out on 5 000 ha in 2017, more than 10 times the surface treated in 2016.

Azerbaijan

• **SITUATION**

Egg-pod surveys, to assess egg mortality and predict hatching period, were carried out in March and concerned up to 25% of the egg-beds located last autumn.

• **FORECAST**

Mass DMA hatching should occur during the 3rd week of April under weather conditions suitable for hopper development. Control operations will start at that time. It is estimated that 55 000 to 60 000 ha will require control operations during the 2017 locust campaign, which represents two to three folds the area treated in 2016.

Georgia

• **SITUATION**

No survey has been carried out so far by the National Food Agency (NFA). Egg-bed and egg-pod surveys of the Italian (CIT) and Moroccan (DMA) locusts will start during the second half of April. Due to winter weather conditions, similar to the previous ones, it is thought that egg mortality due to diseases will again be high. In view of the 2017 anti-locust campaign, NFA announced a public tender for the purchase of 20 000 litres of pesticide in Ultra-Low Volume (ULV) formulation and for Personal Protective Equipment (PPE) kits.

• **FORECAST**

DMA hatching is not expected to start before the end of April. In 2017, control operations should concern 35 000 ha, almost 50% more than the surface treated in 2016.

CENTRAL ASIA

Afghanistan

• **SITUATION**

Beginning of hatching, delayed by low temperatures, heavy rains and snow, was reported at the end of the month. Neither survey nor control operations were carried out in March but preparation for the 2017 locust campaign was in progress. This included: coordination meetings to manage the campaign, especially in the insecure areas and also in view of the joint survey with Tajikistan (scheduled on 24-30 April), and transportation of pesticides and control equipment to the 12 locust-affected provinces, which started on 29 March.

• **FORECAST**

DMA mass hatching will occur in April, followed by hopper development during the forecast period. Taking into account preliminary estimates and reduced access to certain areas due to insecurity, it is expected that

142 600 ha will be treated in 2017, i.e. an increase of 5% as compared to 2016.

Kazakhstan

• SITUATION

Spring surveys started in the South, in South-Kazakhstan, both for DMA and CIT. As far as DMA is concerned, 23 750 ha were surveyed and egg-pods were found on 14 980 ha (63 %) at a density up to 2 egg-pods/m² on 4 200 ha, from 2.1 to 5 egg-pods/m² on 600 ha, from 5 to 10 egg-pods/m² on 560 ha and of more than 10 egg-pods/m² on 20 ha. The number of eggs per pod varied from 22 to 36. From 2.7 to 20% of egg-pods were found infested by parasites or affected by diseases. Concerning CIT, a total of 4 030 ha were surveyed but no egg-pods were found. In the eastern, western and northern regions, preparation for spring surveys, which will start in early April, was in progress.

• FORECAST

DMA hatching is expected to start at the end of the 1st decade of April in South-Kazakhstan and during the 3rd decade in Zhambyl, i.e. slightly delayed as compared to 2016. Control operations against locusts and grasshoppers are planned on almost 1.9 million ha in 2017, a surface similar to the one treated in 2016.

Kyrgyzstan

• SITUATION

Spring egg-pod surveys started during the 1st decade of March. A total of 4 200 ha have been surveyed with egg-pods found on 820 ha at an average density of 1.4 egg-pod/m². An average of 22% of egg-pods was infested by parasites or affected by diseases. Such surveys are still in progress in the North.

• FORECAST

DMA mass hatching is expected during the 2nd half of April in Jalal-Abad, Osh and Batken oblasts while CIT hatching should start during the 2nd half of May in Chui oblast. Control operations should concern 55 000 ha in 2017, a bit less than in 2016.

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 other regions, surveys have not yet started.

• FORECAST

Egg-pod surveys will start in almost all regions in April to identify the level of over-wintering eggs and determine the area to be treated during the 2017 locust campaign (not less than 170 000 ha as per preliminary results in autumn).

Tajikistan

• SITUATION

DMA hatching, delayed by rainy conditions in March, started from 20 March and was reported in nine districts of Khatlon and two of the Republic Subordination (RRS) up to 2nd April.

• Forecast

Mass DMA hatching is expected during the 1st decade of April in the South, during the 3rd decade of April in the North and during the 1st decade of May in RRS. Control operations will start during the 1st half of April. As per forecast, surveys will be carried out on 554 000 ha, of which almost 267 000 ha during spring (locust hatching), almost 155 000 ha during summer and 132 000 ha during autumn (egg-laying); control operations should concern 97 100 ha in 2017, which represents a slight increase as compared to the 2016 forecast.

Turkmenistan

• SITUATION

DMA hatching started in early March and surveys were carried out on 14 500 ha in the East, in Lebap province. DMA hoppers were generally found in grasslands and hilly and mountainous areas; 152 ha

were treated in March.

• **FORECAST**

DMA hatching and hopper development will continue with warming up and numbers of hoppers will increase but it is expected that the situation will remain calm in April. Overall, control operations should be carried out on 200 000 ha in 2017, more than twice than in 2016.

Uzbekistan

• **SITUATION**

DMA hatching was observed in March in the southern part of the country, along the borders with Afghanistan, Tajikistan and Turkmenistan. Since 8th April, hatching was also locally seen on warm slopes at foothills in Surkhandarya. DMA hatching was not seen elsewhere in the country and no hatching of other locust was seen.

• **FORECAST**

Mass DMA hatching should generalize in the South at the beginning of the forecast period, followed by hopper development. It is expected that control operations will start by mid-April, depending on weather conditions. They should concern at least 490 000 ha during the locust season, i.e. 20% more than in 2016, of which 50 000 ha using Insect Growth Regulators (IGRs).

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.

January – March 2017 events and activities

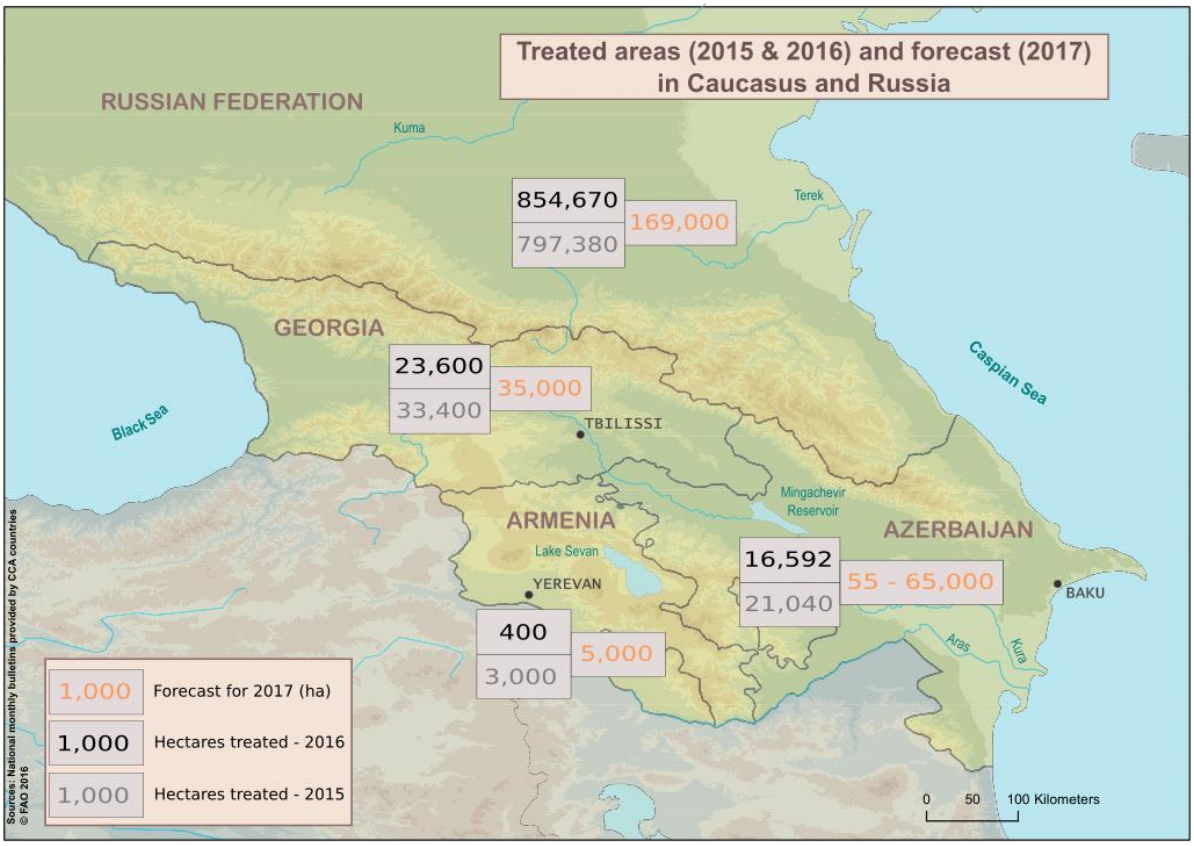
- **2nd Project Steering Committee - project "Improvement of Locust Management in Afghanistan, Kyrgyzstan and Tajikistan" (GCP/INT/238/JPN):** held on 25 January 2017 with the three concerned countries, Japan/ Japan International Cooperation Agency (JICA), FAO Representations and FAO-headquarter.
- **Practical Guidelines on locust pests in CCA:** draft prepared in Russian and under translation into English.
- **Fellowships on locust management:** PhD ongoing on "Application of satellite images and Geographic Information Systems (GIS) to locust monitoring, risk assessment and forecasting", Kyrgyzstan; start of Master on "Locust biological control", Uzbekistan; Master cancelled on "Locust control tactics and strategies" in Kazakhstan due to lack of agreement.
- **National training on locust monitoring and information management** delivered to the benefit of 19 Uzbek Locust Experts on 6-10 March 2017 in Bukhara, Uzbekistan, by Mr A. Latchininsky, Senior Locust Expert.
- **Tablets for Automated System for Data Collection (ASDC) use** delivered to

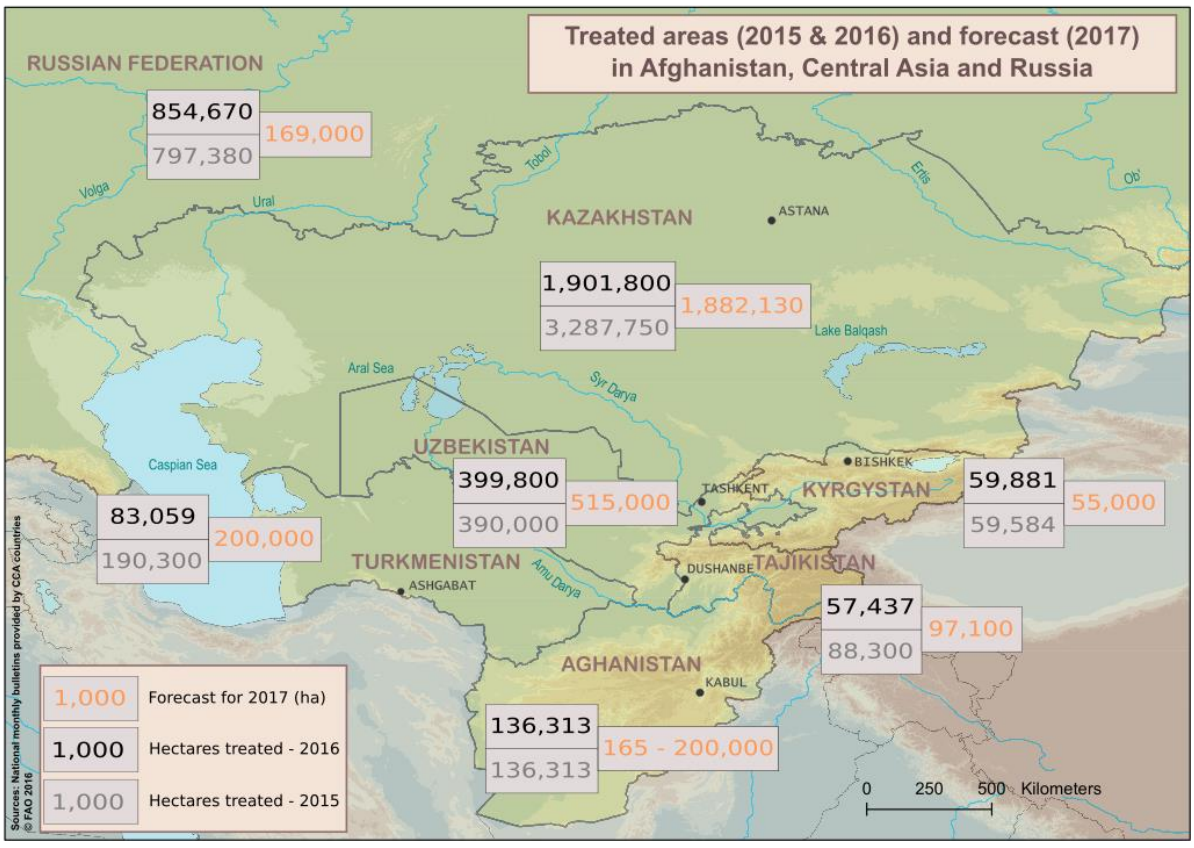
Kyrgyzstan (16) and under procurement for Afghanistan (36), Armenia (two), Azerbaijan (20) and Georgia (10), as per available funds.

- **Caucasus and Central Asia Locust Management System (CCALM):** database for data analysis and forecast (advanced functions) under development.
- **Human Health and Environmental issues:** review of the laboratory procedures for handling, extraction and analysis of residues in vegetation samples, 6-15 February 2017, Bishkek and Osh, Kyrgyzstan (mission of two FAO Consultants, Mr I. Buerge and Ms H. Gharibyan, Experts in pesticide residue analysis and residue laboratory quality assurance schemes).
- **Procurement of locust survey and control equipment:** ongoing process and delivery in the framework of project GCP/INT/238/JPN to the benefit of Afghanistan, Kyrgyzstan and Tajikistan (including vehicles for Kyrgyzstan and Tajikistan and motorbikes for Afghanistan and Tajikistan).
- **Preparatory work** ensured for all activities scheduled during the 2017 locust campaigns.

Forthcoming events and activities in April 2017

- **Practical Guidelines on locust pests in CCA:** draft available also in English.
- **Practical Guidelines on risk reduction related to locust control:** start of draft preparation (English).
- **Training-of-trainers on locust management:** national session on ASDC use to the benefit of 15 Kyrgyz Locust Experts scheduled on 3-7 April 2017 in Osh, Kyrgyzstan; one-day briefing sessions on locust spraying and risk reduction to the benefit of approx. 15 national Locust Experts per session scheduled in Kyrgyzstan (two/three sessions in April) and Tajikistan (four sessions in April).
- **Sub-regional workshop on locust monitoring and information management, including ASDC and CCALM use,** to the benefit of 12 Locust Experts from Armenia (two), Azerbaijan (two), Georgia (three) and Russian Federation (five) scheduled on 7-14 April 2017 in Stavropol, Russian Federation - joint funding by FAO and the Russian Federation.
- **National workshop on locust monitoring and information management, including ASDC and CCALM use,** to the benefit of 20 Azeri Locust Experts scheduled on 17-22 April 2017 in Baku, Azerbaijan.
- **Tablets for ASDC use** under procurement/delivery to Afghanistan (36), Armenia (two), Azerbaijan (20) and Georgia (10).
- **CCALM:** database for data analysis and forecast (advanced functions) to be deployed for testing during the 2017 locust campaigns.
- **Joint or cross-border surveys**:
  - Joint survey involving Armenia, Azerbaijan, Georgia and Russian Federation scheduled in Stavropol oblast, Russian Federation, on 11-13 April 2017.
  - Cross-border survey between Tajikistan (Khatlon) and Uzbekistan (Surkhandarya) scheduled on 11-18 April 2017.
  - Joint survey between Afghanistan and Tajikistan scheduled in Khatlon, Tajikistan, on 24-30 April 2017.
- **Human Health and Environmental issues**: Action Plans for Human Health and Environmental Monitoring Teams to be prepared and implemented by Kyrgyzstan and Tajikistan with 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.





These maps present the areas treated in 2015 and 2016 in CCA and the forecast for 2017 as per data provided during the regional workshop held in Astana in October 2016 (full report available at: http://www.fao.org/ag/locusts-CCA/common/ecg/1191/en/Report_Tech_Workshop_Locusts_2016_Final_EN.pdf).

Last updated in May 2017

For more information, visit: www.fao.org/locusts-cca/