Locust Watch
Locusts in Caucasus and Central Asia

LOCUST BULLETIN No. 29

FAO - Plant Production and Protection Division (AGPM) 15 June 2014

Situation level: THREAT due to the Italian Locust (CIT) in Kazakhstan and Georgia, and to Moroccan Locust (DMA) in Kyrgyzstan and Tajikistan

Situation level - CAUTION in Afghanistan (DMA) and in Georgia (CIT), Russia (all three species) and Tajikistan (CIT)

Situation level: CALM elsewhere, in Armenia, Azerbaijan and Uzbekistan

General Situation during May 2014 Forecast until mid-July 2014

In May, the Moroccan Locust (DMA) fledged in four out of the five countries in which it was already present in April, namely Afghanistan, Azerbaijan, Kazakhstan and Uzbekistan, and hoppers appeared in three more countries, Georgia, Russia and Tajikistan. In addition, hatching of the Italian Locust (CIT) started in Georgia, Kazakhstan, Russia, Tajikistan and Uzbekistan and those of the Asian Migratory Locust (LMI) in Kazakhstan, Russia and Uzbekistan. Consequently, the situation deteriorated as hopper-infested areas increased and extended. Control operations were carried out on more than 1.2 million hectares (ha), one million ha more than during the previous month. Intensive control operations will continue during the forecast period. The situation level was qualified as caution or threat by most of the countries.

Caucasus. Hopper development continued, except in **Armenia** where hatching has not started yet. In **Azerbaijan**, 48 800 ha were treated against DMA hoppers and adults in the main outbreak areas. In **Georgia**, 13 298 ha of DMA and CIT hopper bands were treated.

Central Asia. DMA fledging occurred in **Afghanistan**, **Kazakhstan**, **Uzbekistan** and probably in **Turkmenistan** while hopper development was in progress in **Kyrgyzstan**, **Russia** and **Tajikistan**. CIT hatching started and hopper development was in progress in Kazakhstan, Russia, Tajikistan and Uzbekistan while massive hatching is expected in early June in Kyrgyzstan. Asian Migratory Locust (LMI) hopper development was in progress in Kazakhstan, Russia and Uzbekistan. A total of 1 210 231 ha were treated against the three locust pests, of which 71% in Kazakhstan and 18% in Uzbekistan.

Weather and Ecological Conditions in May 2014

The weather was mostly warm and suitable for hopper development, except in Armenia where persistent rains delayed hatching. In some areas, early drying out of natural vegetation may result in movements of locusts towards cropping areas.

In **Caucasus**, the weather was mostly warm and dry except in Armenia.

In Armenia, the weather was still variable and rainy but the average temperature was mostly normal with little variations of 2/4°C. Temperatures ranged from +10/+13°C to 29/34°C in the lowlands, from 2/+7°C to 23/27°C at foothills and from 0/-2°C to 19/24°C in mountainous areas. Agricultural activities were delayed by showers. The natural vegetation was mostly green with a dense cover in lowlands and foothills.

In Azerbaijan, the weather was mostly warm and suitable for locust hopper development. Day temperatures were of 28/34°C with peaks at 34/36°C. Showers fell on 17-18 May and torrential rains on 27-29 May. Prevailing winds were from south-east and north-west at a speed ranging from 3 to 7.5 m/s reaching 18/20 m/s in gusts. Natural vegetation was drying out and had a low cover; cereal crops were ripe and early harvesting started.

In Georgia, the weather was hot with average temperatures of 27/30°C and up to 35°C. There were seven days of rain. Natural vegetation was drying out and had a medium cover.

In **Central Asia**, weather was generally warm, except in Kyrgyzstan; heavy to torrential rains fell locally in the region.

In Afghanistan, the weather was mostly rainy: heavy showers caused some flooding. Crops and natural vegetation were green and in good condition.

In Kazakhstan, the weather rose intensely as compared to April and there were no below freezing temperatures recorded. In the South, the weather was clear with some rains. Average temperatures ranged from 15.7°C to 32°C with minimum of 4°C and maximum of 42°C. Relative humidity varied from 23 to 92%. Variable winds had a speed of 1-11 m/s. In the East, cool, warm and sunny days were followed by cloudy weather with rains and hail. The average temperature was of 14°C with minimum of -5°C and maximum of +24°C. Relative humidity was of 60.2%. Wind speed was of 1-8 m/s. In the West, the weather was clear and sunny with variable cloudiness. Some showers fell. The average temperatures ranged from 16.9 to 34.5°C with minimum of 11.1°C and maximum of 39°C. The relative humidity varied from 24 to 85%. Prevailing winds had a speed of 0.2-9 m/s. In the North, the weather was unstable and rainy. The average day temperatures ranged from 7.7°C to 25.5°C, with minimum of 2.9°C and maximum of +30°C. Relative humidity ranged from 48 to 93%. The wind speed was of 0.3-20 m/s with gusts up to 43.4 m/s.

In Kyrgyzstan, the average monthly temperature was 1 to 3°C below normal values with minimum temperatures of 2°C (Naryn) in early May and maximum of 24/29°C (Batken and Jalal-Abad) during the second half of the month. The monthly rainfall was of 580-620 mm in the South and 40-130 mm in the North. The relative humidity ranged from 65 to 82%. Natural vegetation was green, with a medium cover and a height ranging from 4 to 8 cm.

In the Russian Federation, weather was mostly warm. In southern regions of Central Federal District (FD), the temperatures were above normal, ranging from 21 to 30°C with local rainfall.. In North Caucasus and Southern FD, the weather was patchy with average temperature of 24°C and uneven rainfalls, locally torrential. In the Volga FD, the temperatures increased progressively from the 10th May and the whole FD became hot and dry with temperatures ranging from 11/15°C to 18/25°C. In Siberian FD, the 1st half of May was characterized by variable weather with temperatures ranging from 1°C (and even negative ones) to more than 25°C.

In Tajikistan, there was a sudden rise in temperatures throughout the country in May, particularly in Khatlon and Region of Republican Subordination (RRS) on 1-19 May, with temperatures from 12/16°C to 28/35°C. In Sughd, average temperatures ranged from 16/18°C to 24/28°C. From

23rd May onwards, there were torrential rains. At the end of the month temperatures increased up to 38/40°C, with minimum temperatures of 36/39°C at the foothills, unexpected for that period of the year. Agricultural work continued and early harvest of onions and fruit started.

In Uzbekistan, the weather was unstable with temperatures ranging from 20 to 36/39°C at the beginning of the month and from 20 to 26/29°C at the end. The natural vegetation was dry.

Area Treated in May 2014

Afghanistan	44 361 ha
Azerbaijan	48 800 ha
Georgia	13 298 ha
Kazakhstan	855 700 ha
Kyrgyzstan	31 595 ha
Russia	16 100 ha
Tajikistan	45 475 ha
Uzbekistan	217 000 ha

Locust Situation and Forecast

(see also the summary on page 1 and maps on last page)

CAUCASUS

Armenia

• SITUATION

No hatching was observed during surveys carried out in May as rainy conditions delayed development of locust. Consequently no control operations were undertaken.

• FORECAST

Hatching of Italian Locust (CIT) is expected in early June in lowlands, during the second half of June at foothills and during the 3rd week of July in the mountainous areas. The development of the two other locusts is not expected unless they arrive from neighboring countries.

Azerbaijan

• SITUATION

In the main Moroccan Locust (DMA) outbreak areas of the country, i.e. Djeiranchel Eldar steppe in the northwest, Garasu, Padar plain in the east and Haramin plain in the central south, hoppers of 4th and 5th instars prevailed and fledging started as hot temperatures speeded up the locust development. Chemical control operations continued in May against DMA hoppers and adults. A total of 48 800 ha were treated using pyrethroids in Djeiranchel Eldar steppe and Garasu Padar plain.

• FORECAST

With temperature increase, it is expected that all hoppers escaping control operations will fledge before the end of June and that will be followed by mating and egg-laying.

Georgia

• SITUATION

During surveys carried out in Kakheti (35,000 ha) and Kvemo Kartli (10,000 ha) regions, DMA hoppers of 3rd and 4th instars were detected during the 1st week of May while DMA adults and CIT hoppers of 3rd to 5th instars (3rd instar prevailing with 60% of the hopper population) were observed at the end of the month. Control operations started and a total of 13 298 ha were treated in Kakheti (12 148 ha of which 2 730 by air) and Kvemo Kartli (1 150 ha).

• FORECAST

CIT hopper development will continue during the forecast period and it is expected that hoppers will move from natural vegetation to crops. Therefore, survey and control operations will continue in June, mainly in Kakheti (Signani and Dedoplistskaro).

CENTRAL ASIA

Afghanistan

• SITUATION

During May, DMA completed its hopper development in most of the infested areas in eight northern and north-eastern provinces and fledging started during the 2nd half of the month, as anticipated. Two more provinces, Faryab and Sar-i-Pul, were infested as compared to the previous month. A total of 44 361 ha were treated by ground using Insect Growth Regulator and pyrethroids in ULV formulation in these eight provinces, mainly in Takhar (12 100 ha) and Samangan (9 319 ha); in the other provinces, the treated area ranged from 344 (Sar-i-Pul) to 6 386 ha (Kunduz)

• FORECAST

DMA groups and swarms will form and move from remote areas and may arrive from neighboring countries. Control operations will therefore focus on areas threatened by that swarms.

Kazakhstan

• SITUATION

During DMA hopper surveys carried out in South Kazakhstan on 950 260 ha, 217 600 ha were found infested by 2nd to 5th instars (the latter prevailing with almost 60% of the locust population) as well as by adults, whose mating started on 29 May; 89 200 ha were treated in that oblast. In Zhambyl, out of 47 000 ha surveyed, DMA hoppers of 3rd to 5th instars (4th instar prevailing with almost 60% of the hopper population) were seen on 14 400 ha and 8 100 ha were treated.

CIT spring surveys came to an end. Out of 343 600 ha surveyed, egg-pods were present on 120 600 ha. Number of eggs per pod ranged from 12 to 47. Between 0.2 and 60% of the egg-pods were found infested by parasites or affected by disease. CIT hopper surveys were carried out in 10 out of the 14 oblasts of the country (no surveys yet in Mangystau, South- and North-Kazakhstan and Pavlodar): early instar hoppers were present on 933 200 ha of which 747 300 ha exceeding the economical threshold (ET) were treated. More than two thirds of these highly infested and treated areas were located in three oblasts: Kostanay (227 500 ha), Aktobe (169 200 ha) and West-Kazakhstan (116 100 ha), where 50 to 70% of the hoppers had reached the 2nd instar on 31 May

LMI spring surveys were completed on 105 510 ha and egg-pods were found on 19 127 ha. The number of eggs per pod varied from 30 to 93. Parasitism and diseases concerned 0.7 to 40% of the egg-pods. Hopper surveys were carried out on 277 000 ha: hoppers were present on 26 600 ha of which 11 100 ha above ET were treated in Atyrau (5 600 ha), Kyzylorda (5 000 ha) and East-Kazakhstan.

A total of 855,700 ha were treated against the three locust pests.

• FORECAST

In South Kazakhstan, DMA mating and egg-laying are expected around mid-June. In Zhambyl, mass fledging will occur by mid-June, followed by mating and egg-laying before the end of the month.

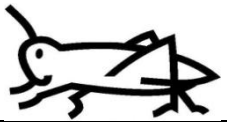
CIT hopper development will continue in the 10 infested oblasts. In southern and western oblasts, fledging should start during the last decade of June, while mass hatching is expected during the 2nd half of June in Pavlodar and North-Kazakhstan.

Massive LMI hatching is expected during the 2nd half of June in the South, by mid-June in the West and at the end of the 2nd decade of June in Kostanay.

Kyrgyzstan

• SITUATION

During DMA surveys carried out on 59 516 ha in four oblasts, 43 674 ha were found infested at density ranging from 9 to 23 hoppers/m². The main infested areas were located in the southern oblasts at an altitude of 500-1 500 m and close to cropping areas. A



total of 31 595 ha (19 904 ha in Jalal-Abad; 7 290 ha in Batken; 4 400 ha in Osh and 1 ha in Talas) were treated by ground using organophosphates, phenyl-pyrazole, pyrethroids and neonicotinoid in ULV (87% of the treatments) and EC formulations.

• FORECAST

DMA will continue its development and the highest threat is expected in Batken and Osh around mid-June. CIT mass hatching should occur from early June in Chui and Naryn.

Russian Federation

• SITUATION

Hatching of locusts and grasshoppers followed by hopper development occurred in May in five Federal Districts (FD). The average density of 1-3 instar hoppers was of 0.6/m² in the Central FD, 9.4/m² in the North Caucasus FD, 23.4/m² in the Southern FD, 4.06/m² in the Volga FD and 5.03/m² in the Siberian FD. A total of 16 100 ha were treated.

Following meetings held with Kazakh specialists to coordinate locust activities, a cross-border survey took place between Kazakhstan and Astrakhan oblast and staff from Orenburg oblast attended a workshop on locust control held in Aktobe and Kostanai Kazakh oblasts.

• FORECAST

Hopper development of grasshoppers and locusts will continue during the forecast period.

Tajikistan

• SITUATION

In May, DMA hoppers of 2-5 instars were present in the whole western part of the country and control operations were carried out in Khatlon (29 770 ha), Sughd (9 325 ha) and RRS (4 280 ha). Massive CIT hatching occurred in northern Sughd, where 2 100 ha were treated. In total, 45 475 ha were treated.

• FORECAST

DMA mass mating and egg-laying are expected in most areas during the forecast period. CIT hopper development will follow and fledging should start by the end of June. Control operations will continue in June in RRS, Sughd, in particular along the Kyrgyz and Uzbek borders, and in Khatlon, close to Afghanistan and Uzbekistan.

Turkmenistan

• SITUATION

No bulletin was received for the third consecutive month.

• FORECAST

DMA should have fledged and mating and egg-laying have probably started.

Uzbekistan

• SITUATION

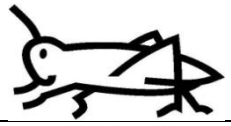
DMA fledged from mid-May onwards, mating was observed on 20-27 May and egg-laying started on 27 May. The main infested areas were located along the border with Tajikistan. CIT and LMI hoppers were mainly of 3rd instar. A total of 217 000 ha were treated by ground and air (with four hang-gliders), of which 201 000 ha against DMA, 10 000 ha against LMI and 6 000 ha against CIT.

• FORECAST

DMA control operations will probably end in late June while treatments against CIT and LMI will continue.

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.

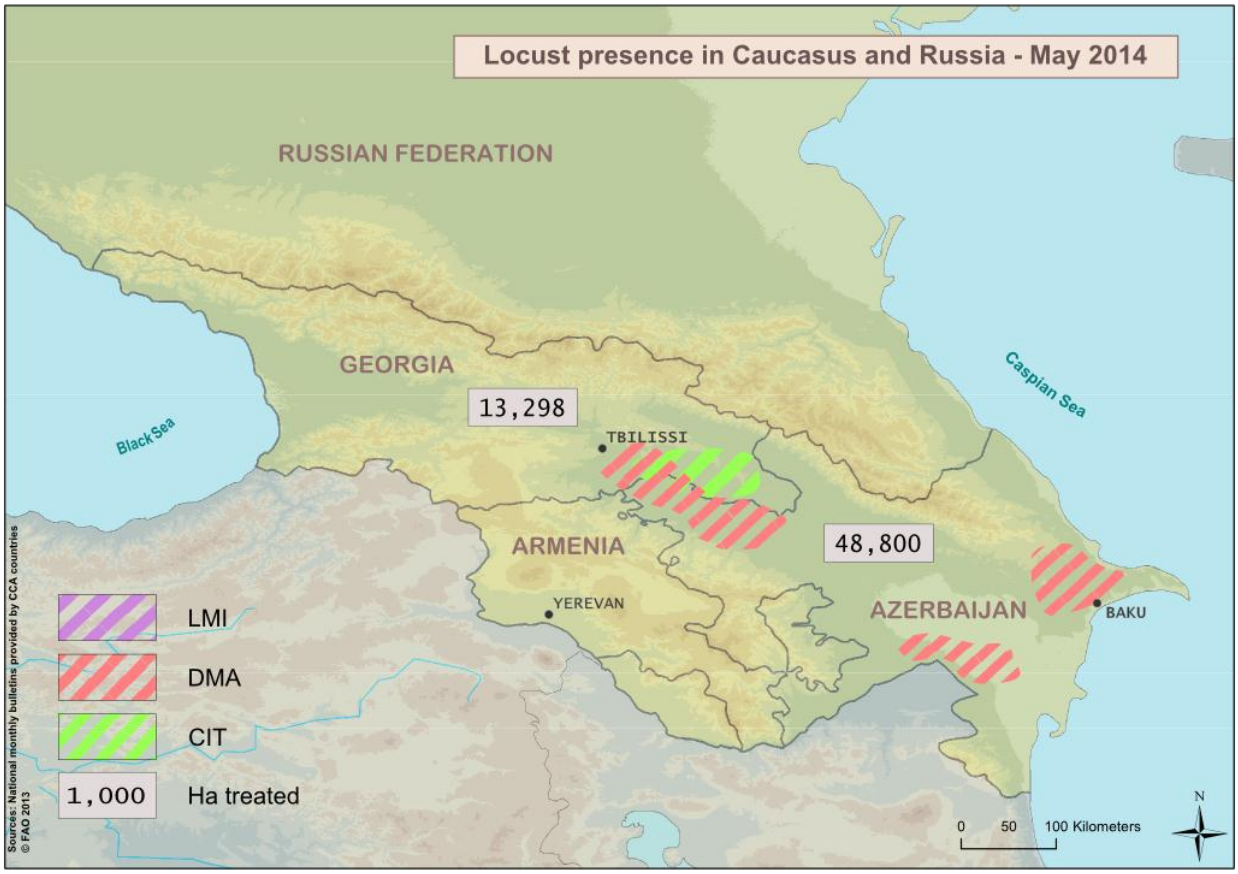
Locust reporting. During calm (green) periods, countries should report at least once/month and send standardized information using the national monthly bulletin template. During caution (yellow), threat (orange) and danger (red) periods, often associated with locust outbreaks and upsurges, updates should 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 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.

May 2014 events and activities.

- **Ground ULV spraying techniques** A training session was organized for 12 national plant protection/locust specialists by Mr T. Sander, Micron Technical Manager, on 19-23 May 2014 in Schuchinsk, Kazakhstan.
- **Locust Geographic Information System (GIS)**: Training on the Automated System of Data Collection (ASDC), including field data collection, was given to seven national plant protection/locust specialists by Ms N. Muratova, GIS Expert, on 21-23 May in Karshi, Uzbekistan.
- **Study to identify the best long-term solution for regional locust cooperation and management in CCA**: preparatory work has been initiated.

Forthcoming events and activities in June 2014.

- **Monitoring system on quality control and efficacy of locust treatments**: A pilot activity, including on-the-job training for four national technical staff, will be conducted by Mr H. van der Valk, Environmentalist Expert, on 1-12 June 2014 in Khatlon Province, Tajikistan.
- **Joint survey**: A joint survey involving six plant protection/locust specialists from Afghanistan and Tajikistan (three per country) will be carried out in Khatlon Province, Tajikistan, on 24-26 June 2014.
- **Locust insecticides' residues**: A study on the "Fate of insecticides used for locust control on pasture in Kyrgyzstan" will be conducted during the last decade of June by Ms A. Gorbunova, Toxicologist, together with Mr A. Alakunov, Chief specialist, Division of Plant Protection and Pesticide Registration, in order to measure the decline rate of the residues on pasture for various insecticides used in locust control as well as establishing appropriate re-entry periods for livestock.


Locust presence in Caucasus and Russia - May 2014
RUSSIAN FEDERATION
GEORGIA
13,298
TBILISSI
Black Sea
Caspian Sea
ARMENIA
48,800
YEREVAN
AZERBAIJAN
BAKU
LMI
DMA
CIT
1,000
Ha treated
Sources: National monthly bulletins provided by CCA countries
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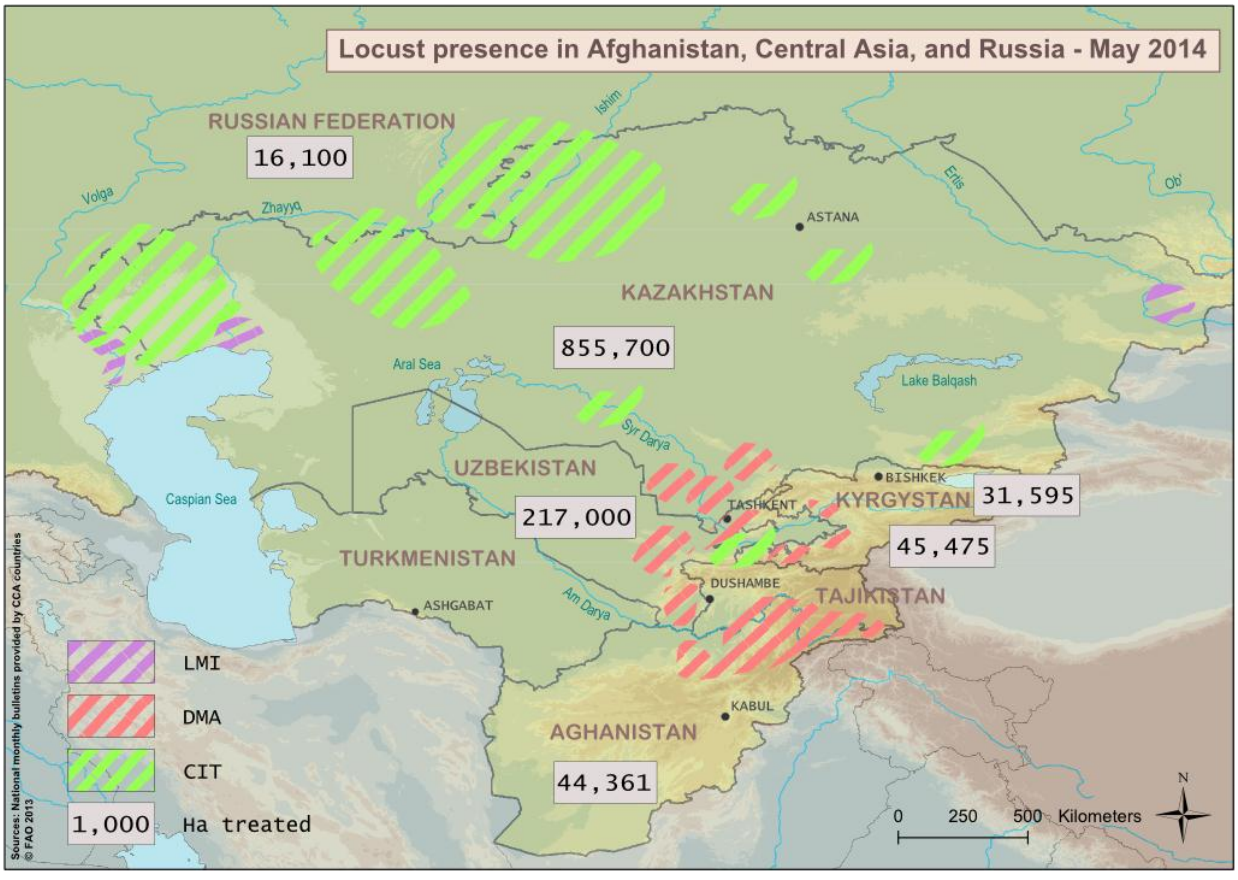
Locust presence in Afghanistan, Central Asia, and Russia - May 2014
RUSSIAN FEDERATION
16,100
Ishim
Volga
Zhayyq
Ertis
Ob'
ASTANA
KAZAKHSTAN
855,700
Aral Sea
Lake Balqash
Syr Darya
UZBEKISTAN
Caspian Sea
BISHKEK
KYRGYSTAN
31,595
TASHKENT
217,000
45,475
TURKMENISTAN
DUSHAMBE
TAJIKISTAN
ASHGABAT
Am Darya
KABUL
AGHANISTAN
44,361
LMI
DMA
CIT
1,000
Ha treated
Sources: National monthly bulletins provided by CCA countries
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0 250 500 Kilometers
N