



Food and Agriculture
Organization of the
United Nations

DESERT LOCUST UPSURGE

Progress report on the response
in Southwest Asia

May–December 2020



DESERT LOCUST UPSURGE

Progress report on the response in Southwest Asia

May–December 2020

REQUIRED CITATION

FAO. 2021. *Desert locust upsurge – Progress report on the response in Southwest Asia (May–December 2020)*. Rome.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

©FAO, 2021



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/legalcode/legalcode>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO endorses any specific organization, products or services. The use of the FAO logo is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons license. If a translation of this work is created, it must include the following disclaimer along with the required citation: “This translation was not created by the Food and Agriculture Organization of the United Nations (FAO). FAO is not responsible for the content or accuracy of this translation. The original English edition shall be the authoritative edition.”

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

Third-party materials. Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Sales, rights and licensing. FAO information products are available on the FAO website (www.fao.org/publications) and can be purchased through publications-sales@fao.org. Requests for commercial use should be submitted via: www.fao.org/contact-us/licence-request. Queries regarding rights and licensing should be submitted to: copyright@fao.org.

Photo cover: ©FAO/Abdulelah Al-Hebshi

Contents

| | |
|--|-----------|
| At a glance | 1 |
| Background | 3 |
| Southwest Asia desert locust crisis appeal | 4 |
| Curb the spread of desert locust | 5 |
| Continuous surveillance | 6 |
| Ground and air control operations | 8 |
| Impact assessments and environment, health and safety | 9 |
| Coordination and preparedness. | 11 |
| Deploy rapid surge support | 11 |
| Facilitate regional partnerships and collaboration. | 11 |
| Enhance regional advocacy and national-level coordination | 11 |
| Strengthen regional and national capacities and enhance preparedness. | 11 |



At a glance



1.2 million people facing severe acute food insecurity in 13 newly merged areas in Pakistan¹



649 455 ha of land treated in the two countries (January–December 2020)

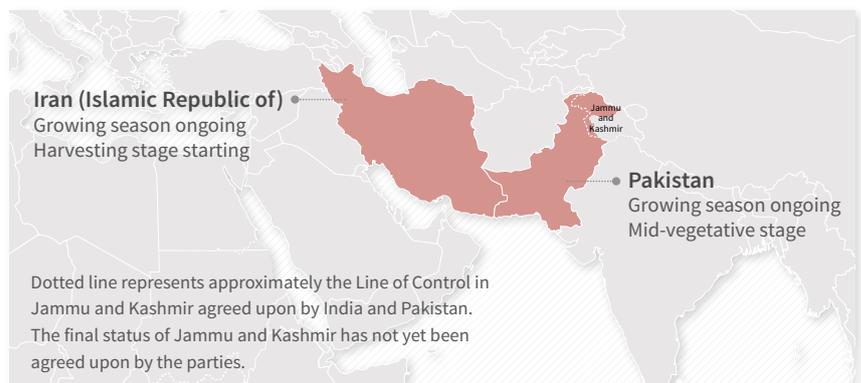


USD 1.9 million mobilized by FAO for rapid response and anticipatory action in the two countries from January to December 2020

By the end of December 2020, about 6 percent of the USD 30 million appeal was mobilized by the Food and Agriculture Organization of the United Nations (FAO) to respond to the desert locust upsurge in Southwest Asia (in the Islamic Republic of Iran and Pakistan) following the release of its crisis appeal in May 2020 to further upscale the ongoing response.

However, even with relatively low funding levels, great strides were made. The governments of the two affected countries led surveillance and control activities, with at least 75 million ha of land surveyed and 649 455 ha treated from January to December 2020.

Figure 1. Current stages of harvest for the Islamic Republic of Iran and Pakistan



Source: United Nations world map, February 2020.

Thanks to the government partners' provision of core assets for surveillance and control activities, the harnessing of existing capacities at national level across all stakeholders, strong national and interregional coordination mechanisms, and FAO's continued and prompt technical and operational support, the upsurge is now under control. In fact, in October 2020 the National Locust Control Centre (NLCC) in Pakistan declared that the desert locust invasion was under control thanks in part to the successful support provided by FAO.

In close consultation with the concerned governments, FAO was able to use the funds mobilized in areas with the highest level of need. While the governments led ground and aerial surveillance and control operations, FAO funds were allocated to carry out training of trainers (ToT) training and the procurement of surveillance and control equipment. Therefore, despite the relatively low level of resources for FAO's desert locust interventions in Southwest Asia, the response was strategic and had a high impact.

¹ The 13 newly merged areas are seven former Federally Administered Tribal Areas (FATA) (Bajaur, Orakzai, Khyber, Kurram, Mohmand, North Waziristan and South Waziristan) and six Frontier Regions (FR) (FR Bannu, FR, Lakki Marwat, FR Tank, FR Kohat, FR Dera Ismail Khan and FR Peshawar), which had a special administrative status, under the Federal Government. In 2018, after a constitutional amendment, the seven FATA areas were named as districts, whereas the six FR regions were merged into adjacent districts and named as Tribal Sub-Divisions of the Khyber Pakhtunkhwa province of Pakistan, and jointly known as newly merged areas.



Furthermore, FAO continues to provide technical expertise, early warning and forecasting support to the affected countries, through the FAO Commission for Controlling the Desert Locust in Southwest Asia (SWAC).

Control operations have safeguarded the food security and income of millions of smallholder farmers by averting the loss of grain and fresh produce, except in localized areas, and where cash crops were severely affected first by invading locusts and then by flooding. Spraying operations have also protected rangeland, allowing livestock-keeping households to sustain their herds with access to grazing areas.

These achievements are significant in a context where food insecurity persists in localized areas of the region – largely due to disruptions to crop and livestock production and damage to local livelihood systems, as well as the threat of the desert locust upsurge and COVID-19 impacts.

Background

A massive desert locust upsurge developed gradually in the Greater Horn of Africa, the Arabian Peninsula and Southwest Asia as a result of two cyclones that brought heavy rains to the Empty Quarter of the Arabian Peninsula in May and October 2018. This led to an unprecedented three generations of breeding to occur undetected in an extremely remote area that ground and aerial teams could not reach or monitor. For over nine months, locust numbers increased 8 000-fold. Since 2019, the desert locust upsurge spread in two directions: toward the Greater Horn of Africa and Southwest Asia.

While several warnings were issued by FAO (starting in December 2018 and through 2019) and control actions launched in frontline countries (over 2 million ha were treated in the frontline countries of Egypt, Eritrea, India, the Islamic Republic of Iran, Oman, Pakistan, Saudi Arabia, Somalia, the Sudan and Yemen in 2019 alone), the situation deteriorated rapidly in January 2020 due to weather conditions that were unusually conducive to the spread of the pest. After Cyclone Pawan made landfall in early December 2019, flooding in the Horn of Africa created highly favourable breeding conditions for the desert locust, leading to an upsurge of a rare magnitude.

In January 2020, FAO scaled up its activities and launched a crisis appeal to contain the upsurge and anticipate the impacts on livelihoods. In view of the massive scale of the crisis, FAO developed a Global Response Plan in May 2020 to outline remaining needs in the Greater Horn of Africa and Yemen, scale up operations and assistance in Southwest Asia, and prepare for a potential threat to West Africa and the Sahel. The appeal called for USD 311.64 million. From this, some USD 30 million was requested for Southwest Asia.

Swarms first invaded Southwest Asia from the Arabian Peninsula in early 2019 when they arrived in southwest Islamic Republic of Iran. Thereafter, two generations of exceptional breeding occurred in southern Islamic Republic of Iran and southwest Pakistan during the spring, followed by three generations of breeding during the summer along the Indo-Pakistan border that ended in early 2020. Breeding occurred again during the spring of 2020 in southern Islamic Republic of Iran and southwest Pakistan that led to another invasion along both sides of the Indo-Pakistan border from May to July 2020 with some swarms reaching northern India and the foothills of the Himalaya Mountains in Nepal for the first time since the 1950s. The upsurge was the worst seen in the Islamic Republic of Iran in 50 years, affecting nine provinces.

Substantial ground and aerial control operations were largely led and resourced by the respective governments of the countries under the appeal with contributions by FAO to support response efforts. At the height of the upsurge, 93 of Pakistan's districts were affected. Intensive control efforts during the summer 2020 campaign by Pakistan and India brought the upsurge to an end in the region by October 2020.

Southwest Asia desert locust crisis appeal

With USD 1.9 million mobilized, about 6 percent of FAO's appeal for the desert locust crisis response in Southwest Asia (May–December 2020) has been funded for curbing the spread of desert locust, coordination and preparedness.

Since January 2020, at least 75 million ha of land was surveyed, and 649 455 ha of land treated by ground and air, thanks to the leadership and resources provided by resource partners and the governments of the Islamic Republic of Iran and Pakistan.

Curb the spread of desert locust

FAO's strategy to curb the spread of desert locust is based on the principle of early detection and rapid reaction as part of its commitment to anticipate, prepare for and respond to crises – and ultimately ensure that locust populations do not spread to currently unaffected areas, thereby mitigating livelihood and food security impacts.

With the support of FAO, the Government of the Islamic Republic of Iran started an intensive desert locust control campaign that began in late February 2020. While in Pakistan, the Government already had a robust system and action plan for the surveillance, control and treatment of desert locust. Yet FAO strategically used the funds raised to provide training, as well as the procurement of surveillance and control equipment to support the ongoing response including eLocust tools, vehicle-mounted sprayers, knapsack sprayers, handheld sprayers together with ultra-low volume formulated pesticide and personal protective equipment (PPE) in both countries.

By the end of December 2020, 649 455 ha have been treated and over 75 million ha surveyed in both countries. These control operations were led by the governments of the Islamic Republic of Iran and Pakistan, and have averted the loss of cereal, benefiting millions of smallholder farmers and pastoral households.

By conducting timely surveillance and control operations at scale to limit desert locust populations, there are fewer farmers, agropastoralists and pastoralists that are food insecure than if no control had been conducted.

Significant progress has been made in reducing locust numbers in the two countries under the appeal. In the Islamic Republic of Iran, the situation has calmed after the worst upsurge in 50 years. In Pakistan, limited control operations are underway to control another generation of breeding – a small fraction of the previous desert locust population. In October 2020, NLCC in Pakistan declared that the desert locust invasion was under control thanks in part to the successful support provided by FAO.

75 million ha surveyed in the Islamic Republic of Iran and Pakistan since January 2020.

Continuous surveillance

To bolster surveillance capacities and enhance the overall detection and reporting system, several initiatives were undertaken with the goal of conducting a successful control campaign and optimizing the use of spraying assets. In Southwest Asia, these activities have largely been led and funded by the respective governments of the countries under the appeal with contributions by FAO to support response.

Since January, a total of 75 million ha have been surveyed in Southwest Asia (16 million ha in the Islamic Republic of Iran and 59 million ha in Pakistan).

Community-led locust surveillance was promoted through the provision of informal trainings to focal points in hundreds of villages in over 90 districts throughout Pakistan. In the Islamic Republic of Iran, the Plant Protection Organization trained 600 community focal points. By training these scouts in reporting sightings and geographic coverage, the ownership of the response was enhanced.

Formal trainings were provided to approximately 1 500 government officials in Pakistan and 300 officials in the Islamic Republic of Iran on surveillance methods and skills to improve detection and monitoring. In the Islamic Republic of Iran, the training was delivered by the Plant Protection Organization.

In the Islamic Republic of Iran, FAO has mentored three master trainers who conducted national training workshops for approximately 320 desert locust, plant protection and agriculture officers, as well as Plant Protection Organization provincial directors. These officials received training on updated surveillance methods and improved their control techniques and asset management skills.

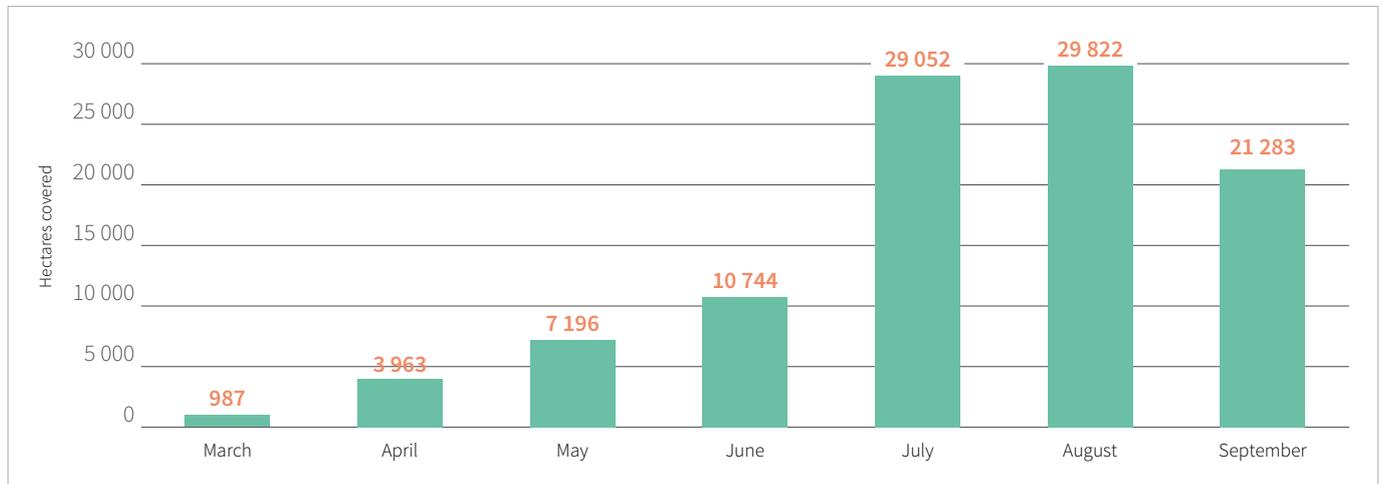
Since January 2020, 1 250 surveillance and control teams have been deployed in the Islamic Republic of Iran and Pakistan.

In Pakistan, there are about 1 050 surveillance and control teams with about 5 500 members, including officials from the Department of Plant Protection, Provincial Agriculture Departments and the Pakistan Army and Rangers. In the Islamic Republic of Iran, 200 Plant Protection Organization teams with about 600 members, including Plant Protection Organization managers, experts, army and non-governmental organization staff, are all engaged in surveillance and control activities across the country.

A crowdsourcing approach has been employed in the region through the massive roll-out of an on/offline-capable tool: eLocust3m, a smartphone app developed by FAO in partnership with Penn State University for field teams to easily capture survey data in the field. Information gathered through the app is transmitted directly in real time to the national locust centres in each country and shared with FAO's Desert Locust Information Service in Rome.

Using eLocust3 tools provided by FAO, data collection efforts increased in FAO SWAC countries, which contributed to better monitoring, analysis and forecasting as well as data-driven decisions taken for survey and control operations.

Figure 3. Monthly data transmission through FAO eLocust3m tools (March–September 2020)



Source: FAO, October 2020.

The Plant Protection Organization secured flying hours for seven aircraft, six drones and 20 vehicles to support surveillance and control activities in the Islamic Republic of Iran.

The Government of Pakistan deployed three fixed-wing aircraft and five helicopters to support surveillance activities. Helicopters are useful in areas that are difficult to access by land, enabling survey teams to disembark and conduct surveillance on foot where possible.

FAO has procured ten single-cabin pickup trucks to support surveillance in Pakistan, to enhance monitoring in remote areas, with trucks also being used beyond the current desert locust upsurge.

Ground and air control operations

Between January and December 2020, a total of 649 455 ha were treated in the Islamic Republic of Iran and Pakistan.

In Southwest Asia, ground and aerial control operations have largely been led and resourced by the respective governments of the countries under the appeal with contributions by FAO to support response efforts.

At the height of the upsurge, 93 of Pakistan's districts were affected. Today, locusts are present in only one district thanks to the control efforts carried out by the Government.

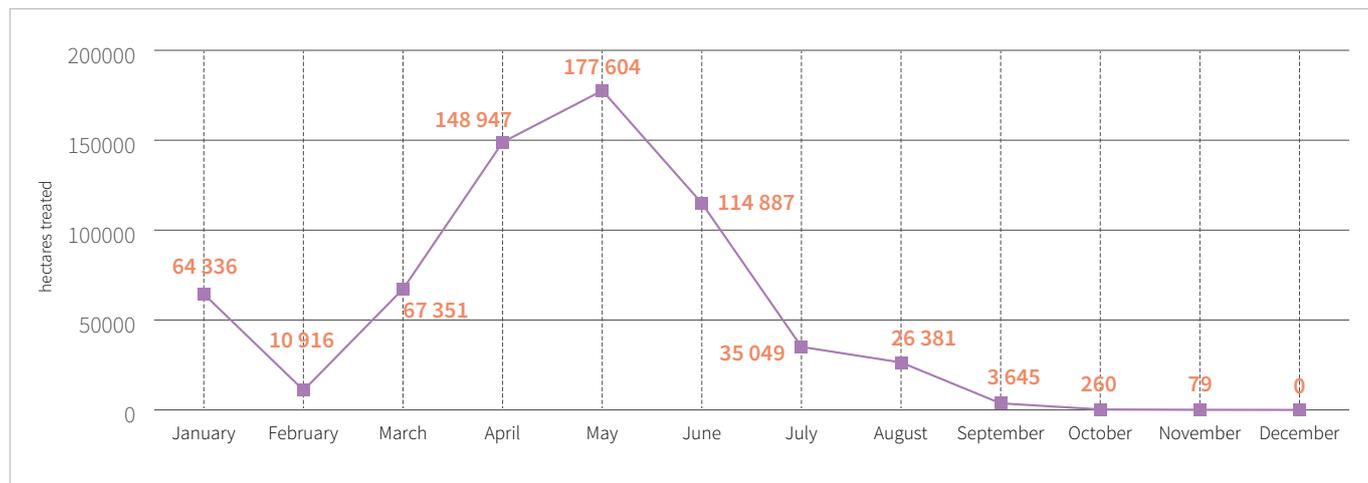
The desert locust upsurge was the worst seen in the Islamic Republic of Iran in 50 years and affected nine provinces in total. Following the government response, the situation is now calm.

Affected countries used their own organizational structures, which were upscaled, expanded and strengthened by the respective national governments. The logistics, deployment of surveillance and control teams and the execution of the campaign operations were centrally coordinated with support from regional administrations within both affected countries. In Pakistan, this included the use of seven operation bases to support desert locust control in Turbat, Kharan, Sukkur, Islamkot, Karachi, Rahim Yar Khan and Bahawalpur. FAO has contributed to control efforts through the procurement of 50 vehicle-mounted sprayers.

Of the 495 000 litres of conventional pesticides made available for control efforts in the Islamic Republic of Iran (75 000 litres of malathion and 420 000 litres of deltamethrin), 10 400 litres of deltamethrin were contributed by FAO. In terms of equipment, FAO procured 50 handheld sprayers, seven knapsack sprayers, 58 vehicle-mounted sprayers and 160 sets of PPE.

Community sensitization was conducted to increase public awareness and support existing educational campaigns on desert locust control. As part of a combined effort with the Office for the Coordination of Humanitarian Affairs, informative flyers were translated into Urdu in Pakistan, including advice for farmers, information on the locust life cycle, instructions on reporting locust sightings, the risks of pesticide exposure and how to avoid them, as well as safety measures to undertake. In the Islamic Republic of Iran, the Plant Protection Organization arranged community sensitization in nine affected provinces.

Figure 2. Area treated in the Islamic Republic of Iran and Pakistan since January 2020



Source: FAO, December 2020.

Impact assessments and environment, health and safety

FAO recommends the use of pesticides with ultra-low volume formulations in desert locust control operations, which require technical expertise for application. Specific trainings have been conducted for the relevant teams, based on FAO's desert locust guidelines for survey, ground and aerial control operations.

To ensure the effective facilitation of control operations, training on the safe administration of pesticides from the Plant Protection Organization benefited nearly 200 control team members in the Islamic Republic of Iran. In addition, about 160 PPE kits, which included overalls, gloves, masks and goggles, were procured by FAO for use by control teams to avoid harmful exposure to the pesticides.

In the Islamic Republic of Iran, an assessment to determine the environmental impact of desert locust control is being undertaken by the Plant Protection Organization.

The Government of the Islamic Republic of Iran carried out a health assessment, organized between the Plant Protection Organization and the Ministry of Health. During the control operations in 2020, the health measurements of 40 percent of pesticide operators were checked.

In Pakistan, FAO and the World Food Programme, in collaboration with the Food Security and Agriculture Working Group, jointly conducted the Food Security and Livelihood Assessment in 21 of the most locust-prone/affected districts across three provinces (ten districts in Baluchistan, two in Punjab and nine in Sindh) to understand the food security and livelihood situation of the households in the areas affected by multiple shocks including locusts, the COVID-19 pandemic and monsoon rains/flooding, etc. and to determine the critical livelihood and food security-related needs of the affected communities/households. The assessment was conducted in October/November 2020 with the financial support of the Government of the Republic of Korea.

Coordination and preparedness

Deploy rapid surge support

In terms of surge support, FAO facilitated assistance to bolster the capacity of the Plant Protection Organization of the Islamic Republic of Iran. In Pakistan, FAO provided immediate operational and coordination support, technical advice and capacity building, information technology support and equipment for surveillance and monitoring.

Facilitate regional partnerships and collaboration

The FAO Commission for Controlling the Desert Locust in Southwest Asia's Technical and Operational Coordination of emergency desert locust operations (SWAC-TOC), established in March 2020, continues to meet virtually on a weekly basis with FAO staff and technical teams from the Commission's four member countries (Afghanistan, India, the Islamic Republic of Iran and Pakistan) and chaired by the SWAC Executive Secretary to share information, review and analyse the latest developments, and coordinate surveillance and control operations along affected border areas. There are also bilateral arrangements through the Ministry of Foreign Affairs with desert locust frontline countries to ensure better coordination in desert locust management.

FAO provides technical and operational support to countries to help them prepare for and control the locust threat and safeguard food security. \

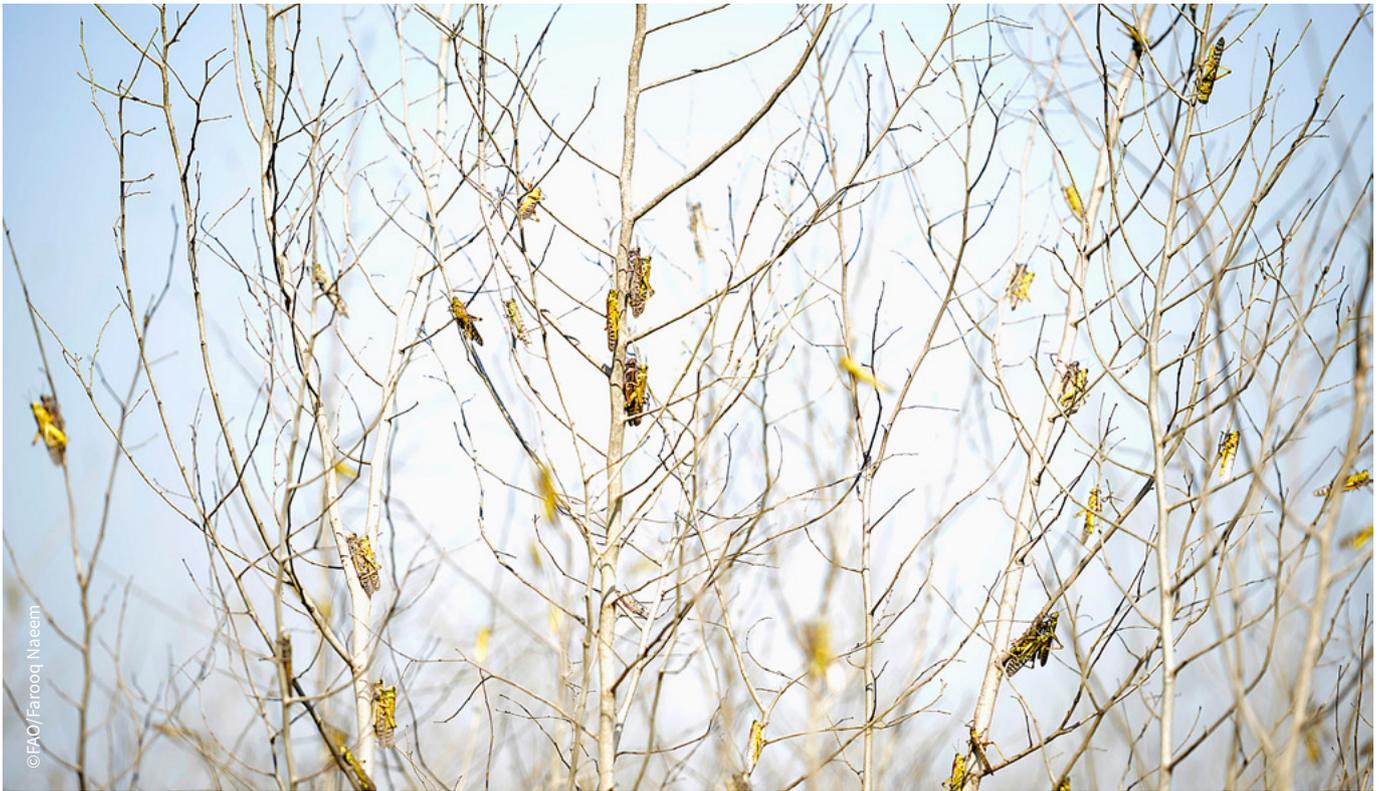
SWAC coordinates the technical support to control and limit infestations as well as provides capacity development programmes to member countries.

Enhance regional advocacy and national-level coordination

Together with government partners, FAO has continued to facilitate dialogue and advocacy with partners through regular briefings and high-level meetings.

Strengthen regional and national capacities and enhance preparedness

The Government of Pakistan has set up the NLCC under the chairmanship of the Federal Minister for National Food Security and Research. Under this arrangement, the following institutions are proactively engaged in desert locust response: the Ministry of National Food Security and Research, the Department of Plant Protection; the National Disaster Management Authority; the Pakistan Meteorological Department, the Space and Upper Atmosphere Research Commission; the Ministry of Foreign Affairs; the Press Information Department; the Ministry of Finance; the Pakistan Army; and FAO for technical support. Provincial locust control centres have also been established in all of Pakistan's provinces to coordinate with NLCC and for effective and coordinated desert locust surveillance and control operations in the field.



©FAO/Farooq Naeem

FAO is supporting the Government of Pakistan in securing USD 200 million from the World Bank Group for a project focused on building national capacity. This project will address challenges posed by changing climate conditions, which is one of the drivers of desert locust infestations among other transboundary pests and diseases. The project aims to equip the country with improved technical capacity for surveillance and control, meteorological data gathering, livelihood protection and rehabilitation, and strengthen national capacity for early warning and early response. These efforts are linked to international and provincial existing locust surveillance and control networks, which will augment the food security and nutrition information system of the Ministry of National Food Security and Research.

Saving livelihoods saves lives

Contact

.....
FAO Representation in the Islamic Republic of Iran
FAO-IR@fao.org
fao.org/iran
Tehran, Islamic Republic of Iran

.....
FAO Representation in Pakistan
FAO-PK@fao.org
fao.org/pakistan
Islamabad, Pakistan

.....
Plant Production and Protection (NSP)
Natural Resources and Sustainable Production
NSP-Director@fao.org
fao.org/agriculture/plant-production-and-protection
Rome, Italy

.....
Office of Emergencies and Resilience (OER)
OER-Director@fao.org
fao.org/emergencies
Rome, Italy

.....
Food and Agriculture Organization of the United Nations



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence