Food and Agriculture Organization of the United Nations

DESERT LOCUST UPSURGE

Progress report on the response in the Greater Horn of Africa and Yemen

May–August 2021

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Foreword

In 2021, an estimated 235 million people worldwide are in need of humanitarian assistance and protection. The United Nations (UN) and partner organizations are aiming to assist 160 million of those most in need across 56 countries, and for this require over USD 36 billion. Yet despite these alarmingly high needs, as of mid-September only about one-third of the Global Humanitarian Overview is funded, underscoring the difficulties faced every day by humanitarian partners in meeting urgent needs.

In this context, I would like to sincerely thank all resource partners for their remarkable and unprecedented support to the Desert Locust Response Plan of the Food and Agriculture Organization of the United Nations (FAO) for the Greater Horn of Africa and Yemen. Indeed, close to USD 220 million have been mobilized since January 2020, representing 95 percent of the programme requirement, leaving a funding gap of only USD 11.23 million as of the end of August 2021.

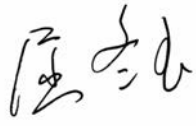
From the very beginning of the upsurge, I committed FAO to an "open book policy" whereby all activities and progress would be communicated in a timely manner through an online public dashboard (launched in February 2020) and through a real-time evaluation process, the findings of which have been communicated broadly for the first two phases of the exercise. Furthermore, since January 2020 and in partnership with the UN Office for the Coordination of Humanitarian Affairs (OCHA), FAO continues to organize a monthly meeting for all partners from its Subregional Office for Eastern Africa and its Resilience Team for Eastern Africa based in Nairobi, Kenya. These meetings are attended on average by some 100 participants across agencies and governments, while numerous bilateral meetings and ad hoc briefings have been organized upon request.

Finally, FAO decided to publish quarterly reports aimed at providing summarized information to all, and I am pleased to release the latest version. In this progress report, you will learn in detail how much FAO has progressed in the fight against desert locust.

With generous support from our partners, around 2.2 million hectares have been treated since January 2020, saving over 4.4 million tonnes of crops and close to 872 million litres of milk – worth USD 1.7 billion. Up to 40 million people were prevented from being at risk of food insecurity by protecting their crop and livestock production. Yet, with the understanding that we would not be able to protect 100 percent of all crops and rangelands in areas infested by desert locust, we also established an anticipatory action plan to safeguard livelihoods that provided over 305 000 households with livelihood protection packages and cash.

In the Greater Horn of Africa and Yemen, surveillance and control efforts will continue at least until the end of the year. Depending on weather conditions as well as the ability to reach breeding and migration areas, the upsurge could possibly end during the last quarter of 2021 or in early 2022.

Until then, we cannot and should not drop our guard. FAO teams on the ground are continuing to work side by side with the affected countries and partners.



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At a glance

Nearly **2 201 572 ha** of land controlled in the Greater Horn of Africa and Yemen since January 2020

Livelihoods of **39.9 million** people saved and food security protected

Outcome value of surveillance and control intervention estimated at **USD 1.7 billion** (crop and milk production saved)

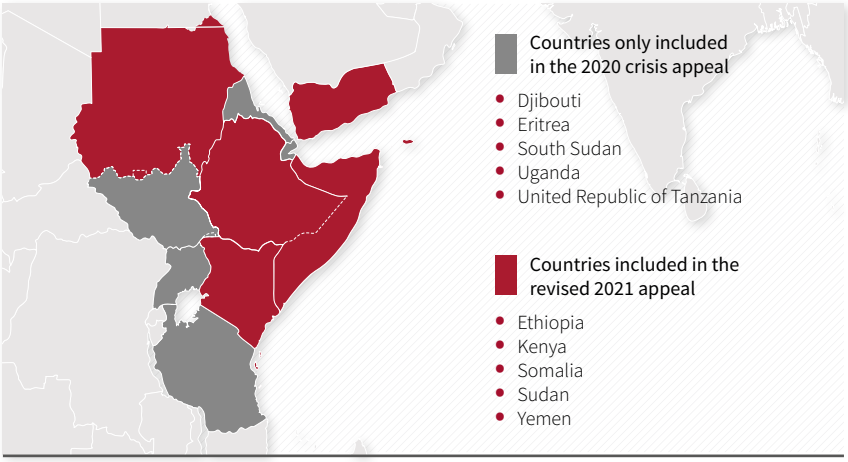
305 517 households received livelihoods support through FAO since January 2020 (102 percent of target)

USD 219.2 million mobilized by FAO for rapid response and anticipatory action since January 2020 (as of 31 August 2021)

The fight against desert locust in the Greater Horn of Africa and Yemen has been raging for 16 months – since January 2020. Governments, FAO and partners are responding to the worst upsurge in 70 years. An extraordinarily effective system has been put in place, from forecasting to responding, and from short-term coordinating to preparing for the medium and longer term.

Thanks to generous contributions from 29 partners, in addition to FAO's own resources, close to USD 219 million have been mobilized towards FAO's desert locust crisis appeal for the Greater Horn of Africa and Yemen. This is 95 percent of the total funding requirement, as per the revised appeal launched on 16 December 2020, covering the period January 2020 to June 2021.

Figure 1. Countries included in the revised 2021 crisis appeal for the Greater Horn of Africa and Yemen



The final boundary between the Republic of the Sudan and the Republic of South Sudan has not yet been determined. The final status of the Abyei area is not yet determined. Source: United Nations Geospatial. 2021. *World map* [online]. Washington, D.C., UN. [Cited 12 May 2021]. www.un.org/geospatial/content/map-world

Component 1: By the end of August 2021, more than 2.2 million ha had been treated in countries included in this report since the beginning of 2020. The results of the control operation remain in line with the appeal's targets.

By undertaking control operations, governments, FAO and partners protected the livelihoods of close to 40 million people in rural areas, saving crops and pasture and thereby securing households' cereal and milk supplies. Based on regional prices for cereal and milk, FAO calculates that the commercial value of saved production exceeds USD 1.7 billion, representing a one to nine return on investment.

The substantive achievements made in controlling large and numerous hopper band infestations in northern Somalia during June by using insect growth regulators (IGRs) significantly reduced the formation of immature swarms. Nevertheless, a few spring-bred immature swarms managed to escape and invade the Afar and Tigray regions in Ethiopia where they found fertile areas for breeding during the summer. The inaccessibility of these areas heavily hampered control operations, leading to the formation of a new generation of swarms from mid-September onwards that will prolong the upsurge in the Horn of Africa.

Component 2: Despite the great achievements made by control operations, up to 2.5 million people were still affected by the upsurge in 2020 in addition to at least another 1 million in early 2021. To mitigate the devastating impact on livelihoods, FAO provided a combination of in-kind and/or cash support to 305 517 farming, agropastoral and pastoral households, while an additional 346 810 households were assisted by non-governmental organizations (NGOs) under the Regional Desert Locust Alliance (RDLA). Together, these activities impacted over 4 million people.

Component 3: The Intergovernmental Authority on Development (IGAD), FAO, the World Bank and French Development Agency (AFD) organized a virtual ministerial meeting on the sustainable management of desert locust and other transboundary pests in the IGAD region on 17 June 2021. The meeting was attended by the Ministers responsible for agriculture and livestock of the IGAD Member States (including Djibouti, Ethiopia, Kenya, Somalia, South Sudan, the Sudan and Uganda), other international and regional organizations involved in food security and nutrition and desert locust control operations (i.e. the Desert Locust Control Organization for Eastern Africa [DLCO-EA], FAO Commission for Controlling the Desert Locust in the Central Region [CRC], development partners, other UN agencies and NGOs). A set of recommendations including a proposed way forward was agreed upon by all participants.[1]

[1] The formulation of the recommendations was made with the active contribution of the European Commission Directorate-General for International Partnerships, under the umbrella of the Global Network Against Food Crises, the Foreign, Commonwealth and Development Office of the United Kingdom of Great Britain and Northern Ireland and the United States Agency for International Development's Bureau for Humanitarian Assistance.

Curb the spread of desert locust

A total of USD 141 505 547 was received in support of this component as of 31 August 2021 (93 percent of the requirement).

Breeding in eastern Ethiopia and northern Somalia caused desert locust populations to increase during the spring of 2021. Substantive control operations in June and July reduced the majority of the hopper bands before they could form immature swarms. However, a limited number of small immature swarms managed to form. Some of the swarms migrated to summer breeding areas of Afar for maturation and egg laying while other swarms stayed in northern Somalia where they remained immature throughout the summer. During October, summer-bred immature swarms from Afar are expected to reinvade the plateau in eastern Ethiopia and northern Somalia where they will join the remnant spring-bred swarms, mature and lay eggs with the onset of the rains. This will cause another generation of breeding to occur before the end of the year.

Unusual breeding also occurred during the summer in Tigray where new swarms are expected to form in October and migrate north towards Eritrea for winter breeding along the Red Sea coast.

In Yemen, moderate breeding took place in the interior, causing hopper bands and new swarms to form; however, survey and control operations were hampered by insecurity and beekeeping activities. While the majority of the summer-bred swarms are expected to migrate from the interior to the coastal plains of the Red Sea and Gulf of Aden for winter breeding, a few swarms could reinvade northern Somalia in October.
Ground and aerial teams systematically surveyed the areas where desert locust were sighted, including settlements, water bodies, and near livestock or wildlife. If safe spraying conditions were not met, control missions were delayed or aborted until swarms would migrate to safer areas for spraying.

Desert locust populations are declining in eastern Africa and Yemen but vigilance must remain high as rains and the next generation of breeding have started.

Continuous surveillance

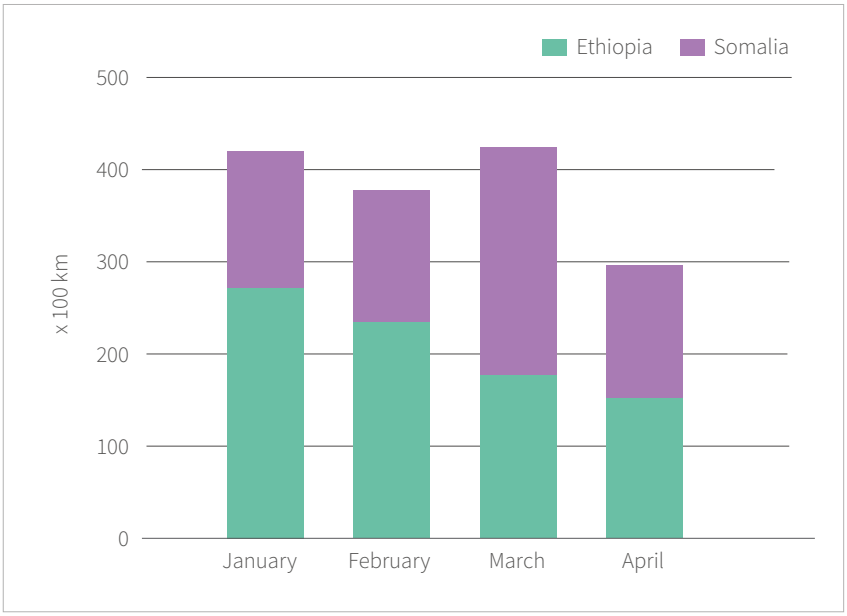
During the reporting period, surveillance efforts proved extremely effective in informing control operations. In June, pre-identified areas of breeding were continuously monitored in northwestern and northeastern areas of Somalia and the early detection of hopper bands allowed for the preparation of barriers for the use of IGRs. This strategy proved incredibly effective in the reduction of swarms emerging from this breeding cycle.

The inaccessibility of Ethiopia's Tigray and Afar regions (an extended no-fly zone) in the months of July and August prevented detection and identification of early instar hopper bands and likewise impeded the control operation. Increased efforts are now concentrating in the areas immediately surrounding Afar in order to rapidly detect movements of swarms out of the no-fly zone, to inform control assets stationed in Dire Dawa.

Breeding also occurred and is continuing in the interior of Yemen, where access remained limited for surveilliance teams.

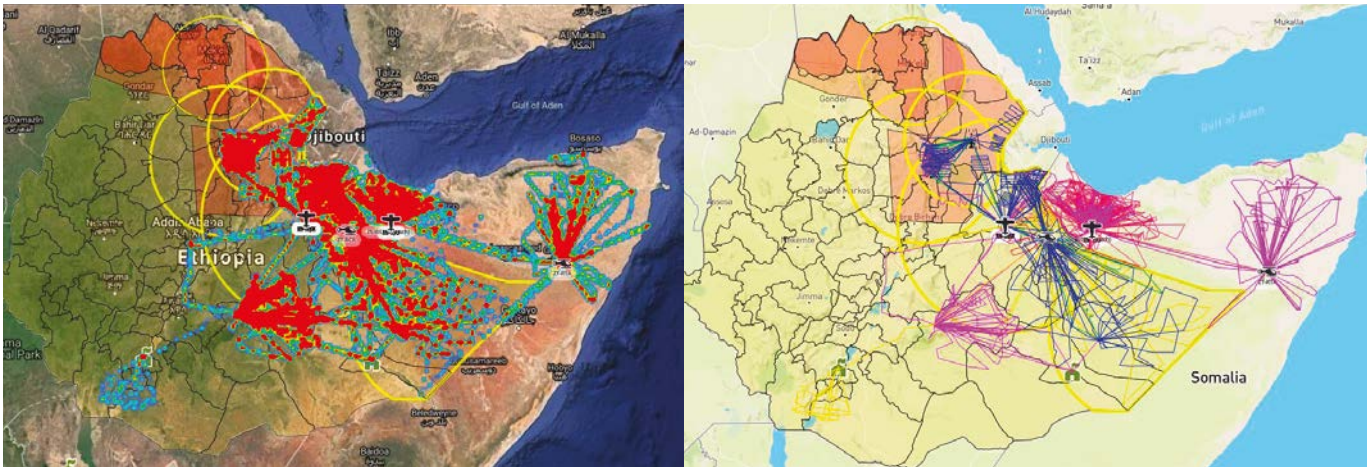
FAO and its partners managed to extensively cover major areas of interest in the months of July and August (as shown in the tracking and heat maps in Figure 3), with the exception of Tigray and Afar. Air assets covered over 150 000 km in distance, the equivalent of about four times the circumference of the world. These efforts were complemented by granular distribution of ground teams across the main areas of interest in the Horn of Africa and in Yemen.

Figure 2. Aerial survey (in km) May to August 2021



Source: FAO, August 2021.

Figure 3. Surveillance heat and tracking maps



Source: FAO, May 2021.

Ground and aerial control operations

IGRs played a key role in the success of the control operations against spring-bred populations in northern Somalia during the reporting period.

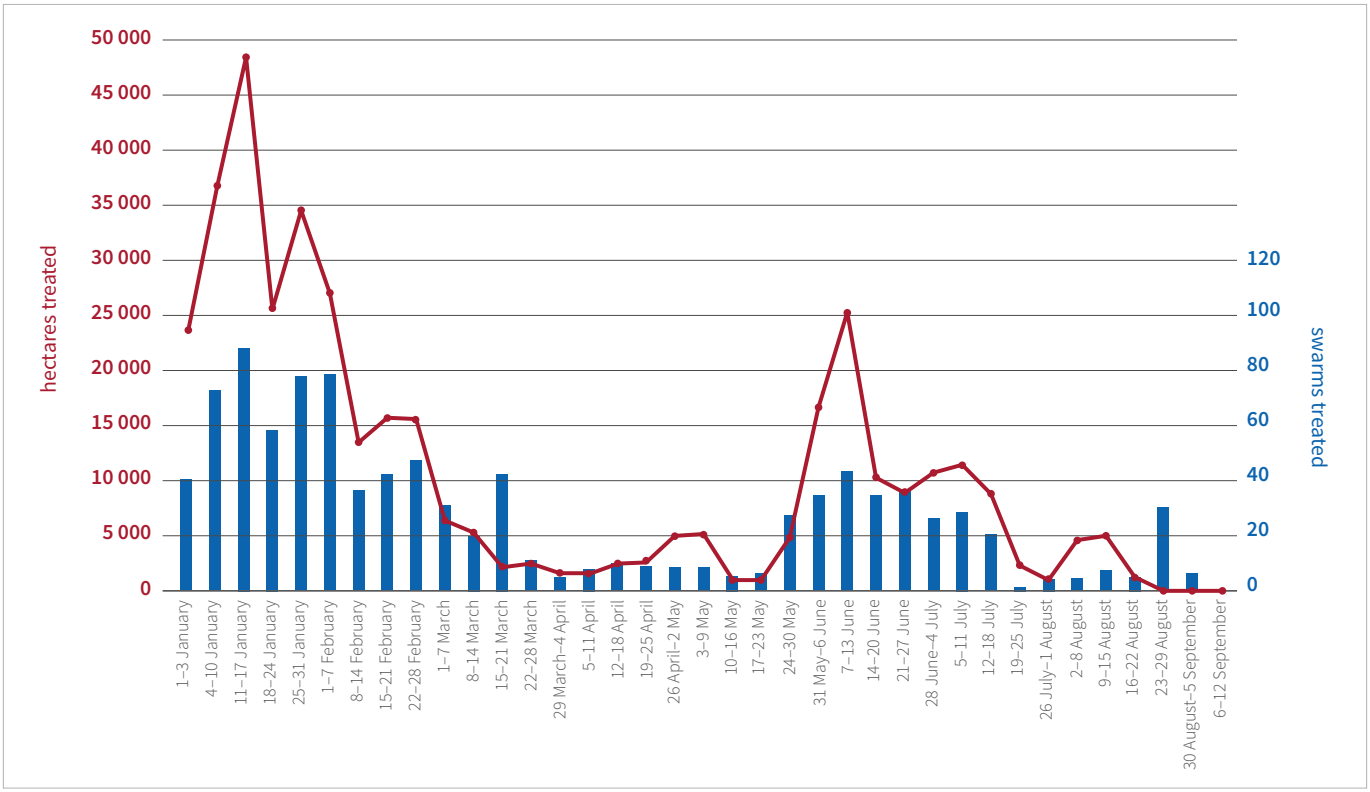
Numerous dense hopper bands began forming on the plateau and in coastal areas of northern Somalia in late May 2021, with hundreds of bands ranging in size from 10 to 2 000 square metres or more. An initial area of 50 000 ha was estimated by surveillance aircraft to be infested between 30 May and 2 June 2021.

As IGR stocks in Somalia were only 50 000 litres, it was determined that a barrier treatment technique, rather than full cover, would need to be deployed in order to successfully treat the entire area. During the first three weeks of June, 48 000 litres of IGRs were applied as 300-400 m barriers, which covered over 150 000 ha.

This strategy proved to be an excellent approach in controlling hopper bands and reducing the number and size of subsequent swarms.

The use of IGR barriers, combined with intensive surveillance efforts, managed to significantly reduce the hopper populations that emerged from the April–May spring breeding in Somalia. The limited number of spring-bred swarms that formed in Somalia were treated with biopesticides, while those that appeared in adjacent areas of eastern Ethiopia were treated with conventional pesticides.

Figure 4. Number of swarms and areas treated (weekly) in Ethiopia, Kenya and Somalia



Source: FAO, May 2021.

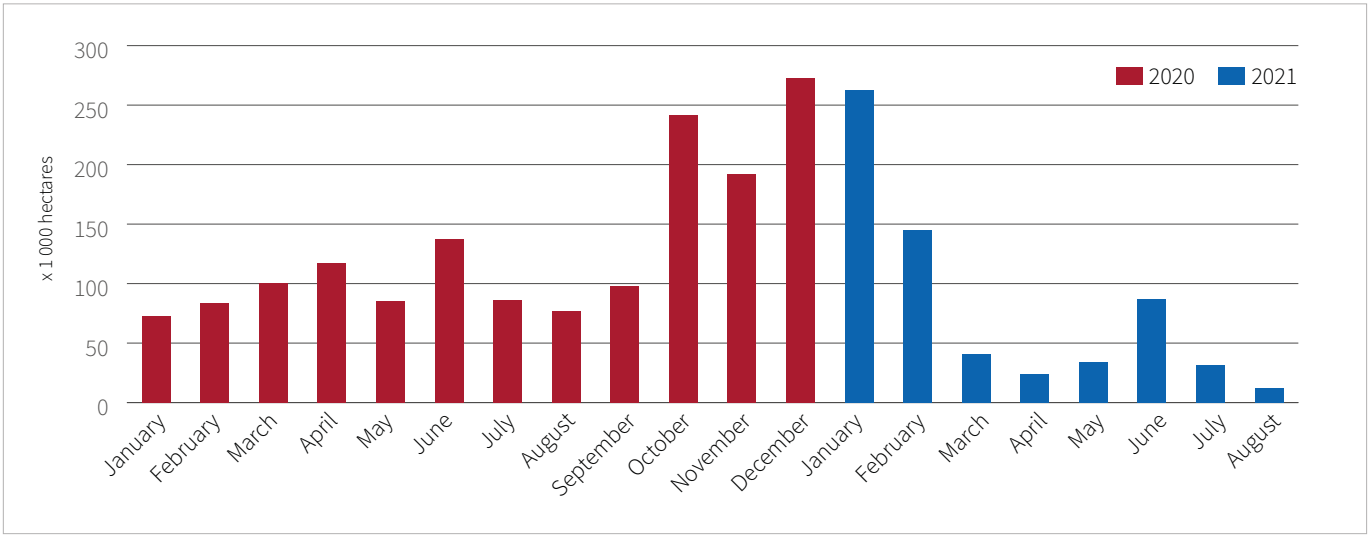
Despite the high reduction of swarms, some small swarms still managed to reach Afar and cross into Tigray where they found fertile areas for breeding. The majority of summer breeding is thought to have taken place in Afar since Tigray has less favourable habitats. New swarms will start to form in the summer breeding areas during the second half of September and continue into October.

The continued use of EarthRanger geospatial tracking system supported the flexible management of the aerial assets in accordance with the locust forecasts provided by FAO's Desert Locust Information Service. This allowed a flexible scale-up and scale-down approach based on the desert locust situation and expected developments.

The assets used during the reporting period – ten fixed-wing aircraft and helicopters – will be extended until the end of December and complemented by the contracting of an additional fixed-wing aircraft in Somalia.

Ethiopia	Somalia
3 fixed-wing aircraft (2 FAO and 1 Government of Ethiopia)	**2 fixed-wing aircraft**
4 helicopters (3 FAO and 1 Government of Ethiopia)	**2 helicopters**

Figure 5. Area treated in the Greater Horn of Africa and Yemen since January 2020

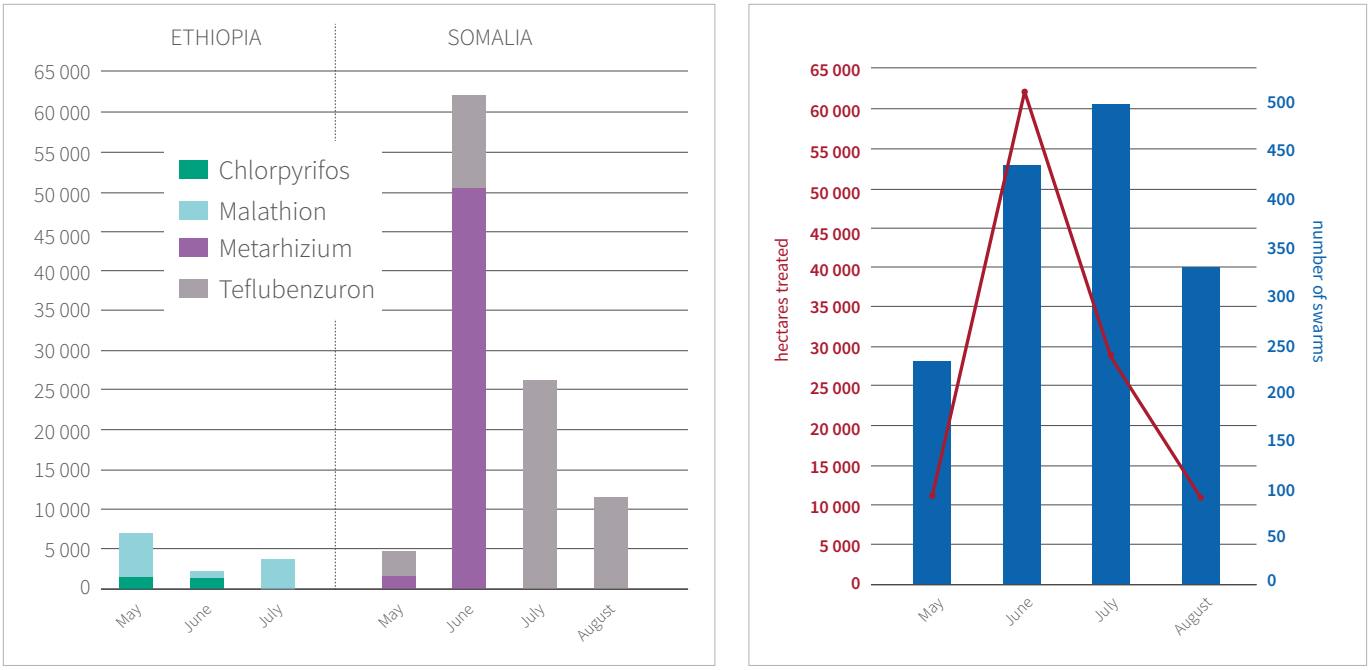


Source: FAO, May 2021.

Figure 5 above clearly shows the reduction in the scale of the upsurge, both in the number and size of swarms, especially when comparing the reporting period with the same period in 2020.

Although the level of preparedness, surveillance and control capacity was far greater in 2021, including the deployment of three times more assets, an area four times less was treated compared to the same period one year ago. This was mainly attributed to fewer targets to treat and again illustrates the continual decline in the upsurge.

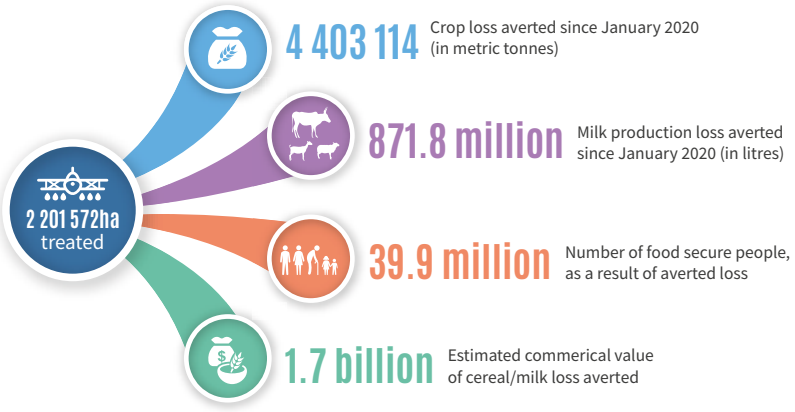
Figure 6. Area treated in Ethiopia and Somalia since May 2021



Source: FAO, May 2021.

Outcomes under Component 1 of the programme

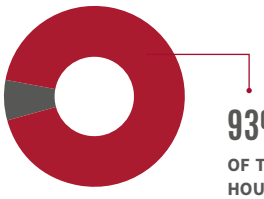
By treating 2 201 572 ha, FAO estimates that almost 40 million people have been directly and positively impacted by Component 1 of the appeal, across the ten countries and three main livelihoods in the region (farming, agropastoralism and pastoralism). The early control of desert locust, which reduced damage on crops and rangeland, allowed rural communities to avert or significantly reduce crop and milk production losses.
FAO estimates that around 4.4 million tonnes of cereal crops and some 871.8 million litres of milk were saved, thanks to the combined efforts of governments, DLCO-EA and FAO. The commercial value of crops and milk production saved is estimated at some USD 1.7 billion.



Safeguard livelihoods

FARMING HOUSEHOLDS

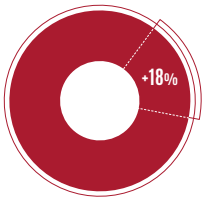
Targeted: **191 500 households**
Reached: **179 020 households**



93%
OF TARGETED HOUSEHOLDS REACHED

(AGRO)PASTORAL HOUSEHOLDS

Targeted: **107 350 households**
Reached: **126 497 households**



118%
OF TARGETED HOUSEHOLDS REACHED

A total of USD 67 925 426 was received in support of this component, representing 100 percent of the requested funds.

Outcomes under Component 2 of the programme

A total of 305 517 households have been assisted by FAO under the desert locust response plan with funding received. While the response plan provides a general conceptual framework, each country tailored the packages and the response to align with domestic priorities.

The livelihood response strategy was based on damage estimates (GeoPoll surveys) and subsequent calibrated compensatory mechanisms before losses translate into food insecurity.

Thanks to control actions, no farmers or (agro)pastoralists suffered the loss of their entire production since January 2020, although losses in the range of 50 percent in worst-affected areas have been reported. The compensatory mechanism established by FAO in coordination with governments, country food security clusters and RDLA allowed affected communities to withstand this shock. As a result, with the assistance provided, households avoided falling into a livelihood crisis or adopting unsustainable coping strategies such as the selling of assets, or abnormal migration that could have generated tension/conflict over natural resources.

The key outcomes of the livelihood interventions in the most-affected countries are reported in the tables below.

Outputs	Ethiopia	Kenya	Somalia	South Sudan	Uganda	Total
Cereal seeds distributions						
Farming packages	23 000	-	56 471	60 000	10 456	**149 927**
Metric tonnes produced	34 500	-	107 232	52 800	35 600	**230 132**
Cash-based interventions						
Cash injected (USD)	7 202 820	426 186	4 576 679	-	1 943 023	**14 148 708**
Households meeting minimum expenditure basket	65 674	5 596	27 139	-	9 286	**≥107 500** households
Animal feed and mineral blocks distribution						
Animals (core breeds) maintained/ households with milk availability	84 200/ 41 200	330 300/ 16 515	n/a 29 448	285 000/ 48 000	50 000/ 5 000	**749 500/ ≥140 000** households with milk for children under five years of age

Coordination and preparedness

Under this component a total of USD 11 854 087, slightly more than the USD 11 372 587 requested, have been mobilized since January 2020.

Outcomes of the regional ministerial conference held on 21 June 2021

The desert locust upsurge in the Greater Horn of Africa highlighted the eroded or absent capacities, readiness and preparedness in the region. It also raised a number of questions about the roles and responsibilities of regional institutions and bodies, namely IGAD, DLCO-EA and CRC. In this context FAO, IGAD, AFD and the World Bank launched a process that led to the ministerial declaration statement of 17 June 2021.

Figure 7. Process towards a regional strategy

A joint communique was signed by the Ministers responsible for agriculture and livestock of the IGAD Member States, namely: Djibouti, Ethiopia, Kenya, Somalia, South Sudan, the Sudan and Uganda, with representatives from international and regional organizations involved in food security and nutrition, and DLCO-EA, CRC, development partners, FAO, other UN agencies and NGOs.

The communique firmly reiterated the commitments of all the governments in the region towards the establishment of a sustainable system for the management of future upsurges.

The 14 recommendations define the framework for the development of a regional strategy:

Strategies and preparedness

Recommendation 1. Establish dedicated desert locust units or teams in relevant national entities to maintain a high level of alertness on potential desert locust invasion/upsurge.

Recommendation 2. Building on the achievements of the ongoing campaign, each Member State should develop a national preparedness plan encompassing the required institutional and human capacity, infrastructure/technology, training programmes, research and information required for a sustainable national system. A similar system should

be developed at the regional level to create connections between the individual national plans and support cross-border cooperation.

Recommendation 3. IGAD and Member States should build effective surveillance, monitoring, and early warning and early response systems to prevent locust outbreaks/upsurges in future through a coordinated national and cross-border protocol.

Recommendation 4. Develop national and regional risk assessment and crisis management plans for desert locusts and other transboundary pests, considering the possible changes in desert locust gregarious distribution areas due to climate change leading to the development of more frequent upsurges, within and beyond the frontline countries.

Regional and/or interregional collaboration

Recommendation 5. Build a repository on data and information on desert locust (expanded to other transboundary pests for invasion countries) and establish sharing mechanisms to ensure availability of data to Member States.

Recommendation 6. Establish (and continuously update) a coordinated national and regional communications plan by IGAD Member States while learning from the recent upsurge. The communications plan will include guidance for outreach with the media and donor community, and effective communications campaigns for civil society and affected populations.

Recommendation 7. Establish public-private partnership agreements at national and regional level to maintain and strengthen the availability of supplies and services needed to respond to desert locust and other pest outbreaks, while learning from the current upsurge about the role of the private sector as a key partner in the fight against pests.

Governance and coordination

Recommendation 8. Conduct external and independent institutional assessments of desert locust and other transboundary pests through an established task force coordinated by IGAD. The assessments should map the technical, institutional and financial sustainability (reviewing roles and mandates, identifying overlaps and synergies, etc.) or the related regional and interregional institutions (DLCO-EA and CRC) in consideration of the different needs of invasion and frontline countries.

Recommendation 9. Develop a regional funding plan to secure/resume Member States financial support/contribution based on the findings of the assessments, and possibly increase the available annual resources.

Recommendation 10. Establish an interregional platform to facilitate exchanges between frontline countries in the Horn of Africa and the Arabian Peninsula, and invasion countries. The platform will aim to enhance institutional arrangements and create a joint/coordinated strategy for frontline and invasion countries, coordinate response, training

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plans, sharing of information, and conducting South-South exchange programmes to promote experience sharing and learning.

Recommendation 11. Review policies and regulations to support an effective response to desert locust and other transboundary pests at national and regional (cross-border) level.

Recommendation 12. Develop a comprehensive plan for the modernization/reform of existing and/or new regional institutions.

Research and innovation

Recommendation 13. Commit to work with research institutions at national, regional and international levels to conduct fundamental assessments and research on topics related to surveillance and management of desert locust and other transboundary pests.

Recommendation 14. Develop a research agenda on the use of biopesticides, utilization of desert locust for food/feed, the gene isolation for the identification of pheromone producing chemicals in locusts and other pests (i.e. fall armyworm), etc.

What to expect in the next four months

The situation has significantly improved compared with the previous reporting period, and compared with 2020. However, the desert locust found favourable conditions to breed during the summer in northeast and northern Ethiopia. Consequently, a new wave of immature swarms will form and migrate north to Eritrea and southeast to northern Somalia and eastern Ethiopia during October.

It is therefore imperative to keep our collective surveillance and response mechanisms and assets intact. This includes the existing partnership with 51 Degrees Ltd and the EarthRanger system used for real-time mapping of locust infestations and tracking of aerial assets. It also means the continued use of eLocust3 digital tools for data collection in the field, supplemented by earth observations (remote sensing) and geospatial analysis, to monitor the situation and predict its further development.

Ethiopia

In September and October, a new generation of desert locust swarms will form in the Afar region and adjacent areas of southeast Tigray and eastern Amhara. If survey and control operations cannot be conducted in these

areas, the swarms will migrate to eastern areas of Somali region where they will mature and lay eggs with the onset of the rains in October. This will lead to hatching and the formation of hopper bands in November and December. Therefore, it is imperative to concentrate on air surveillance and control, to reduce the number of summer-bred swarms and the subsequent hopper bands.

Somalia

Breeding will take place during November-December in the north, giving rise to hopper bands on the plateau and the northwest coastal plains. Cross-border coordination with Ethiopia will be essential. Somalia will increase ground surveillance capacities by adding more vehicles and trained personnel, and will augment its fleet of aircraft with the addition of one fixed-wing spray aircraft.

The Sudan

As a frontline country, the Government has the necessary capacity and expertise to survey traditional breeding areas and act in a timely manner. FAO replenished pesticide stocks ahead of the breeding season to ensure effective operations. Breeding will take place this winter on the Red Sea coastal plains but no significant developments are expected.

Yemen

More small swarms will form in the interior where good rains fell earlier in the year. The majority of the swarms are expected to move to coastal areas of the Red Sea and Gulf of Aden for breeding during the winter; however, a few swarms could migrate to northern Somalia. FAO is actively working with the Government to increase surveillance activities on the ground in all areas and ensure control operations, if needed, in those places that can be accessed safely.

Saving livelihoods saves lives

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