



Eritrea

Desert Locust Report

January 2021

Background



- Desert locust is one of the most disastrous pests that draw the world's attention and causes great concern due to its seriousness.
- Eritrea is considered globally as one of the principal breeding areas of the pest. It has both summer and winter breeding areas.
- More than half of country land cover , that is 7 million hectares, is favorable for locust breeding during good climatic condition.
- The winter breeding area is the largest area that covers 4.7 million hectares and lies along the 1200km length on Red sea coast. It has also a long rainy season starting from September up to April.
- The Summer breeding area covers 2.3 million hectares and is located in the Western lowland of the country . It has short rainy season, usually from June up to September.



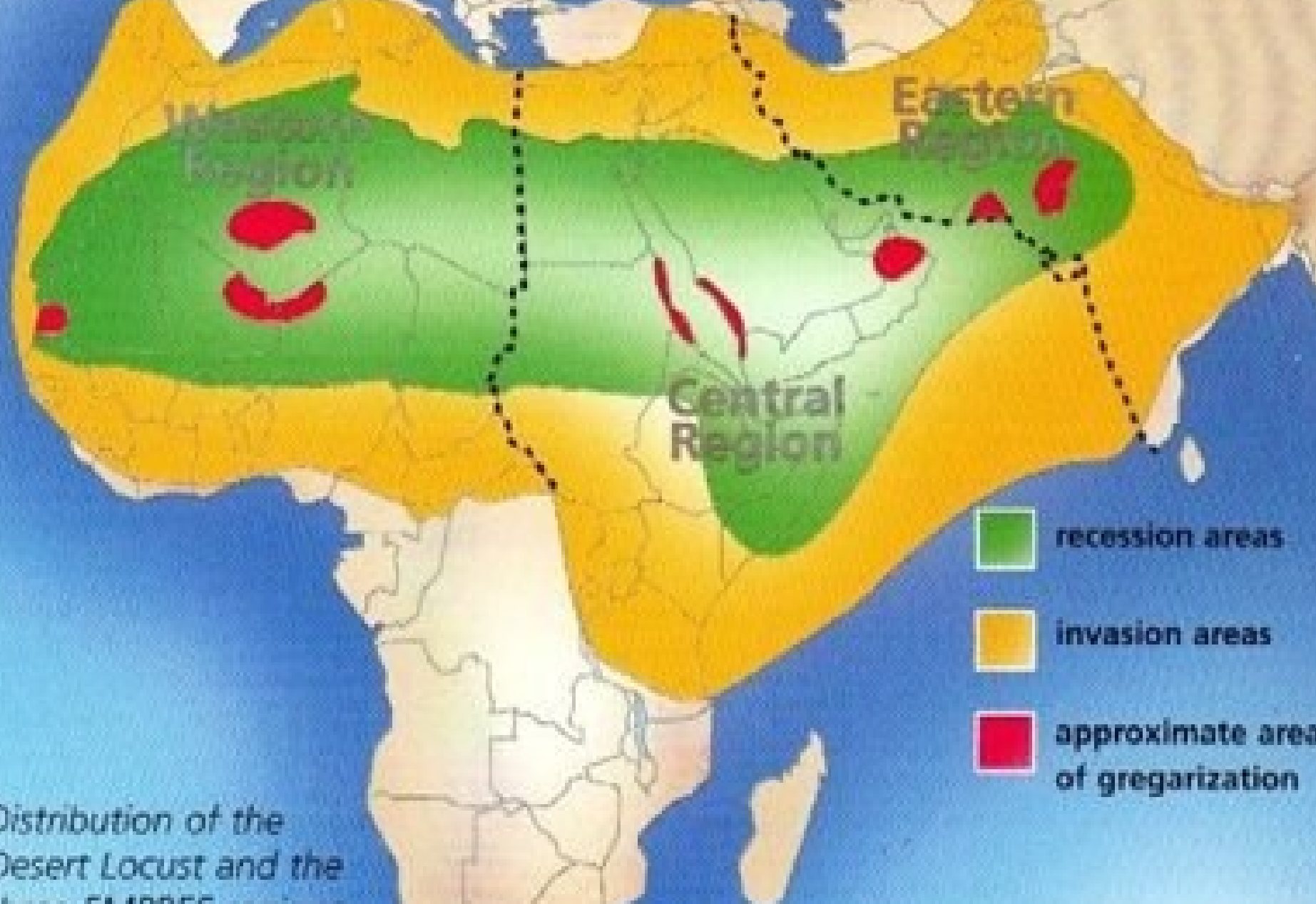
- Here in Eritrea, Desert Locusts is a perennial threat with almost annual outbreaks.
- The country experienced different migratory pest outbreaks, especially Desert locust incidence, almost every year with different magnitude of infestation.
- The government of the State of Eritrea usually pays high priority to control migratory pests to ensure food and nutrition security.
- The government of the State of Eritrea and its partners like DLCO-EA and FAO- CRC exert great effort to minimize the damage caused by the pest.

Desert Locust Distribution in the world



- Desert Locust invasions threaten more than 60 countries in Africa, Middle East and Asia. Invaded areas include North, West and Central Africa, Canary Island, Arabic Peninsula, Middle East and North East Turkey and Cyprus, Southern parts of Russia, Iran and Afghanistan and Southern India.
 - Affected Area, recession, 16 million square km.
 - Affected Area, invasion, 29 million square km.

Desert Locust Distribution in the world



-  recession areas
-  invasion areas
-  approximate areas of gregarization

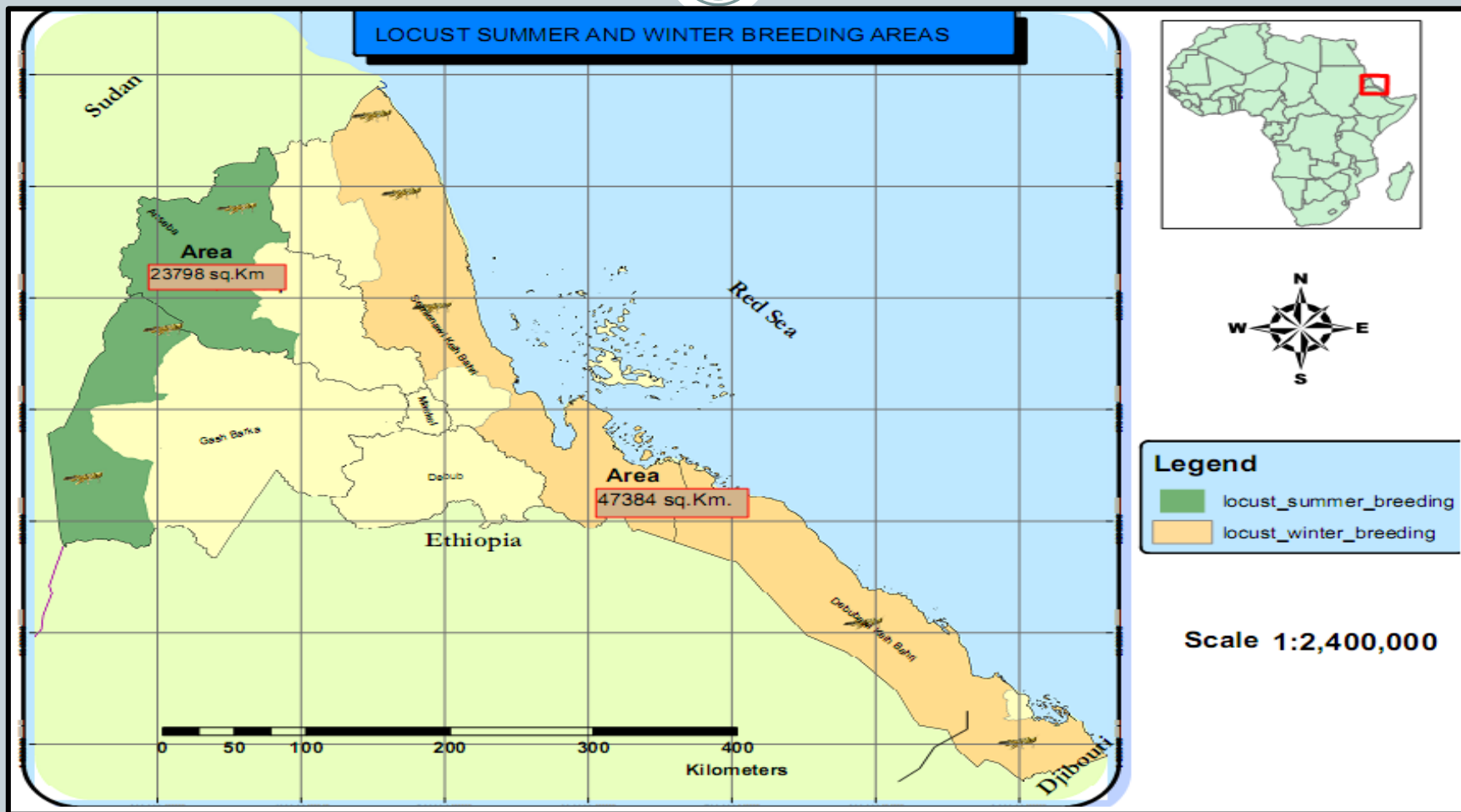
Distribution of the Desert Locust and the three EMPRES regions

Desert Locust Breeding Seasons in Eritrea



- **The Desert Locust breeding seasons are the summer time (June-September) along the Western parts of the country.**
- **The winter time (October-April) on the Coastal Red Sea area (Eastern Lowlands).**

Map of Desert Locust Areas in Eritrea



Biology & Behavior of Desert Locust



General background of Desert Locusts

- Desert Locusts have caused problems for quite a long time. An Egyptian wall painting from 3425 years ago shows a Desert Locust on a papyrus flower.
- Desert Locust is also mentioned in the Bible and the holly Quran.



- Each Desert Locust can eat its weight of food per day (2 grams) causing severe damage to crops and rangeland.
- Each Km² of a dense swarm can contain 50 million locusts eating 100 tones of vegetation per day.
- A very large swarm can cover 1000 Km² consuming 100,000 tones of vegetation per day.

An Egyptian wall painting



What are Locusts?

- Locusts are members of the grasshopper order *Orthoptera* and family *Acrididae*.

Locusts differ from grasshoppers,

- They have the ability to change their behaviour and physiology.
- They breed in remote areas
- They are highly mobile.

Locusts do affect people by:

- Damaging crops,
- social problems (food and nutrition security).
- Creating political problems





Desert Locust behaviors



Desert Locust has two Phases.

- Solitarious form which is harmless to crops whereas the gregarious phase causes extensive damage.
- Desert locusts travel between **100 and 200 km/day** and have the ability to form dense mobile swarms in the adult stage and hopper bands in the nymphal stage.

Swarming:

- In favourable ecological and meteorological conditions, locusts concentrate in relatively small areas,
- The concentrated adult groups start to change colour and behaviour and to become gregarious,
- The concentrated adult groups become big in size and start to fly with the wind as swarm migrate to other locations
- Some swarms can contain **100 million locusts**,
- Sometimes swarms can fly for **20 hours at a height that can reach 1,000 - 1,8000 m** from the ground,
- Swarms can fly between **100-200 km a day** in steady wind, this distance can be reduced to 5km/day in cold days





Control Strategies

Surveillance



- Appropriate attentiveness is one of the most essential procedures that contribute to the success of Desert Locust preventive control strategies which usually depends on conducting intensive and frequent surveys and immediate intervention.

Objectives:

- Better understanding of the habitats favorable to desert locust survival and gregarization as this is critical to their management.
- Knowing the status of locusts and put mitigation measures in place.
- Deciding the control target so that mobilization of recourses can be effected.
- Forecasting breeding and migration.
- Soliciting assistance.
- Proper evaluation of the campaign.

Surveillance in Eritrea



Ground Surveillance by scouts



Ground Surveillance by Vehicles

Continued



- Information from desert locust survey and control operation is used to assess the current situation and forecast future developments.
- From such assessments and forecasts, further survey and control operations can be planned and assistance can be requested.
- Information is crucial and can be considered the base for all decisions and Early warning.
- If the information is irregular, late or of poor quality, proper decision will not be able to be made by those in the position of authority.

Eritrea's Control Strategy



Prevention Strategy

- Eritrea deploys its limited resources to surveillance and Monitoring throughout the year.
- Eritrea has a long time experience. Scouts drawn from the local population and agricultural experts conduct surveys in the local breeding areas throughout the year.
- The current strategy to reduce the frequency of plagues and manage Desert locust infestations is early warning and ground control.
- Thanks to this strategy Eritrea had always controlled locusts before they start to fly.

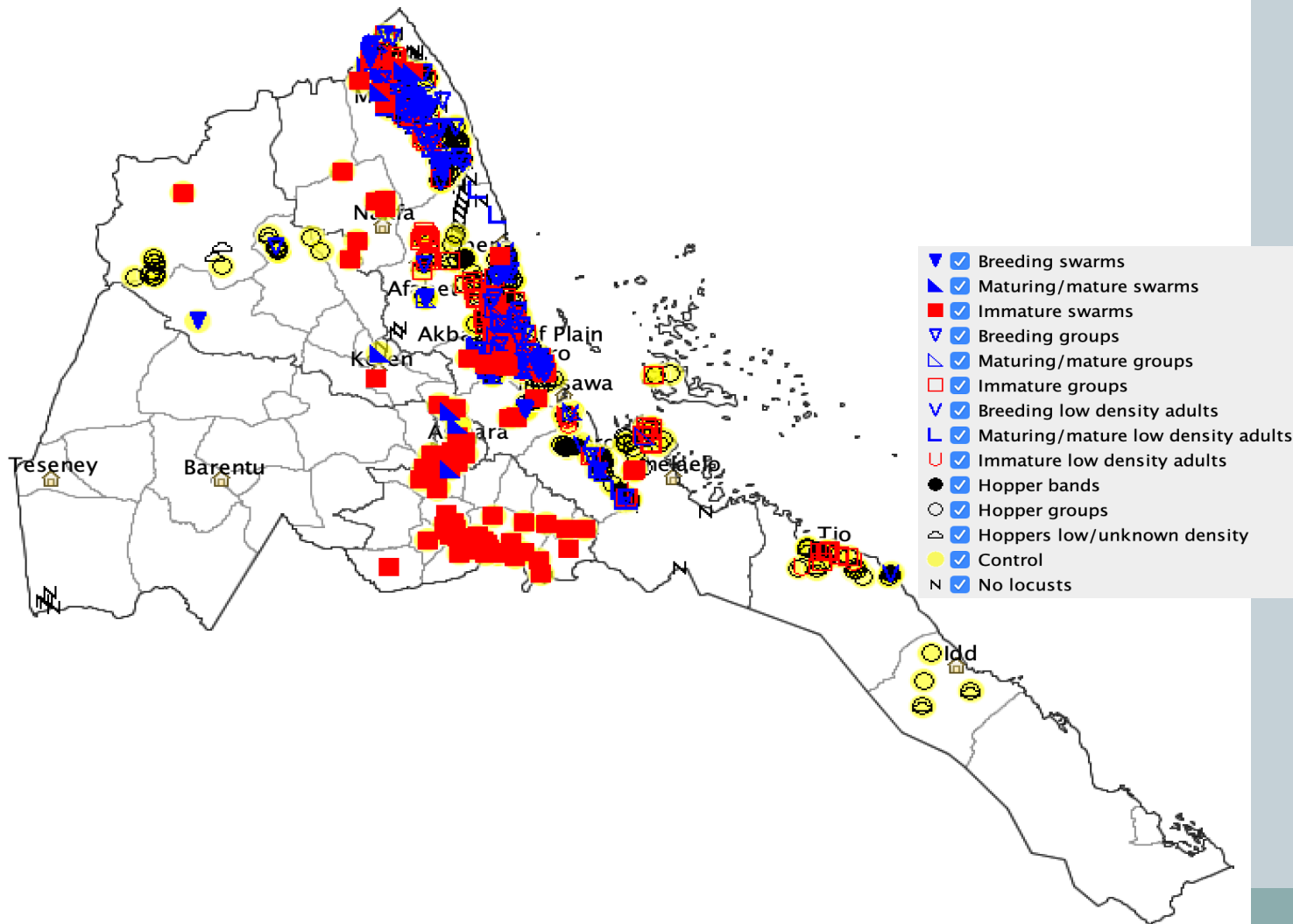
Control Operations on invading Swarms



- If invading swarms come from the neighboring countries, the Government of Eritrea (Agricultural Experts, local administration staff and members of the defence forces) conduct control operations during the night time as locusts are naturally inactive then.



Desert Locust Situation During 2020





*Common Types of Sprayers
used in Control Operations*

Different types of Sprayers



1. Manual knapsack sprayer



2. Motorized knapsack sprayer



3. Vehicle mounted sprayer



Preparedness



- What should be in place to face a Desert Locust threat with a good chance of success before an emergency occurs?
 - Well organized locust control stations and regular campaign
 - Effective strategies and tactics
 - Qualified staff
 - Sufficient and well maintained equipment
 - Effective logistics management
 - Sufficient material and financial resources.

Elements for success in Eritrea



- The most essential reason that contributed to the success was the Government's early preparedness.
- The Government's preventive control and Community based strategy .
- Ground control system based on the biological behavior of the Desert Locust.
- Having sound and efficient contingency plan.
- Establishment of temporary survey and control stations right at the site of the outbreak during the Desert locust breeding season adopted as culture of Desert locust management in the country.
- National high level task force and regional task force down to village administration.
- Commitment of the community, military personnel and the government in general.



Pictorial Presentation of Desert Locust Control in Eritrea

Sprayer Maintenance Training



Control actions against swarms of Locust in the Highlands



Migration of Desert Locust swarms from Neighboring countries



Preparation and Control operations against Locust Swarms





Locust Local breeding in Wekiro around Massawa



Locust Infestation before control operations



Control operations using Vehicle mounted Sprayers



Mortality after control operation



Mortality after control operation



Daily evaluation meeting of each control team in the evening



Challenges during Control Operations







Community Participation in control Operations





Deployment of Pesticides and Sprayers



Swarms Mortality



Crops Saved from Damage



Desert Locust Situation in 2020

- **Until December 2020 a total of more than 100,000 hectares of land was infested with desert locusts with invasions from Neighboring countries and Local Breeding.**
- **Thanks to coordinated efforts of the Ministry of Agriculture, Regional Administration Offices and Members of the Defence forces insignificant crop damage (0.4 percent or only 828 hectares) was registered.**

Distribution of treated areas by Zobas



Achievements

Region	Treated area in hectares
Northern Red Sea	78,784
Southern Red Sea	1,206
Maekel	1911
Anseba	712
Debub	18,510
Gash Barka	341
Total	101,464

Major challenges in Eritrea



The main challenges in facing a Desert Locust threat is limitation of resources.

- Limited sprayers such as Manual, Motorized and Vehicle mounted.
- Shortage of Personal protective equipments such as Overalls, Gloves, Goggles, Masks and Boots.
- Spare parts for sprayers which are not available in the local market.
- Shortage of survey and control vehicles compared to our vast areas of Desert Locust breeding.
- Insufficient material and financial resources.



Thanks!