

Facts: Management of the Desert Locust Outbreak



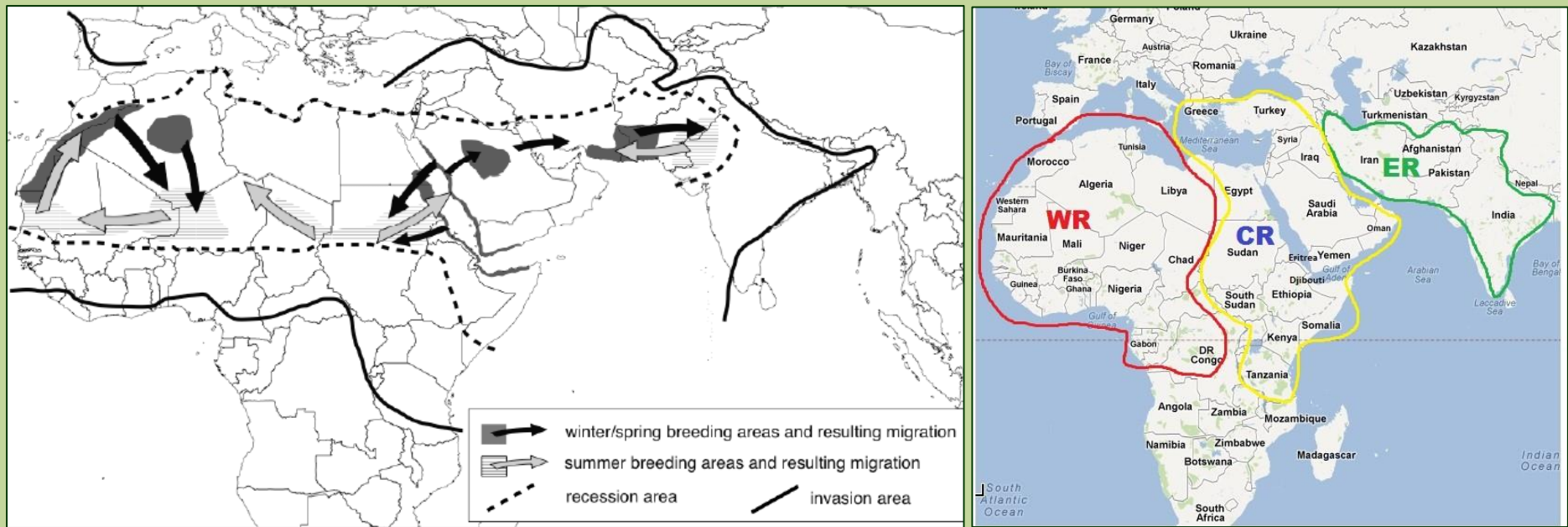
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The facts.....

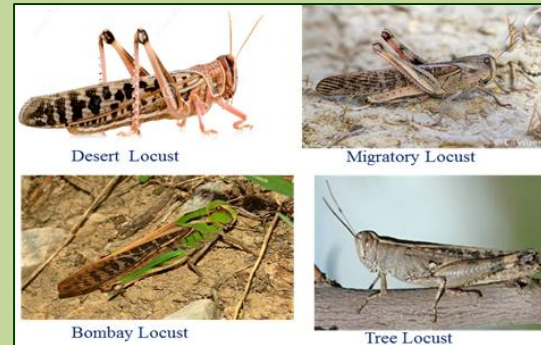
- Desert locust- an international transboundary insect pest causing threat to agricultural production and livelihoods
- Inhabits a broad belt of arid and semi-arid land from the Atlantic Ocean to North West India. Thus, it covers over **16 millions sq kms** in **30 countries**.
- **The invasion area** : 30 million sq km includes nearly 60 countries.
- North West and East African countries, Arabian Peninsula, the Southern Republic of USSR, Iran, Afghanistan, the Indian sub-continent.



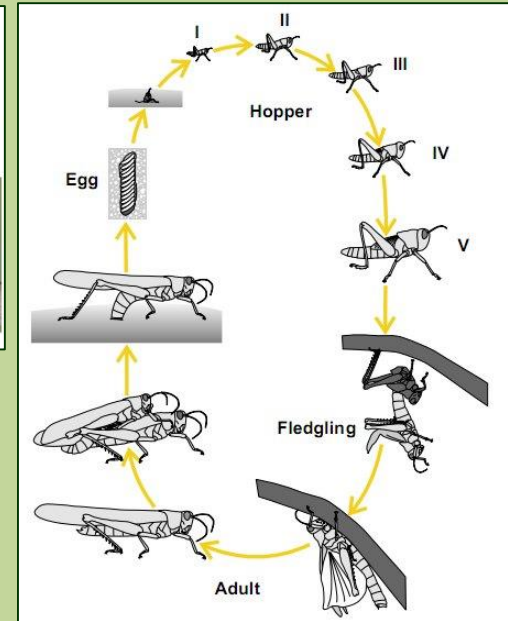
Major species of locust in the world

Sl	Name	Scientific name
1	Desert Locust	<i>Schistocerca gregaria</i>
2	Bombay Locust	<i>Nomadacris succincta</i>
3	Migratory Locust	<i>Locusts migratoria</i>
4	Italian Locust	<i>Calliptamus italicus</i>
5	Moroccan Locust	<i>Dociostaurus morocannus</i>
6	Red Locust	<i>Nomadacris septemfasciata</i>
7	Brown Locust	<i>Locustana pardalina</i>
8	South American Locust	<i>Schistocerca paranensis</i>
9	Australian Locust	<i>Chortoicetes termenifera</i>
10	Tree Locust	<i>Anacridium Spp.</i>

Major species of locust in India



Life cycle of desert locust



Forms: Solitary; Gregarious

Total lifecycle: 2- 6 months

No. of generations/year: 2-5

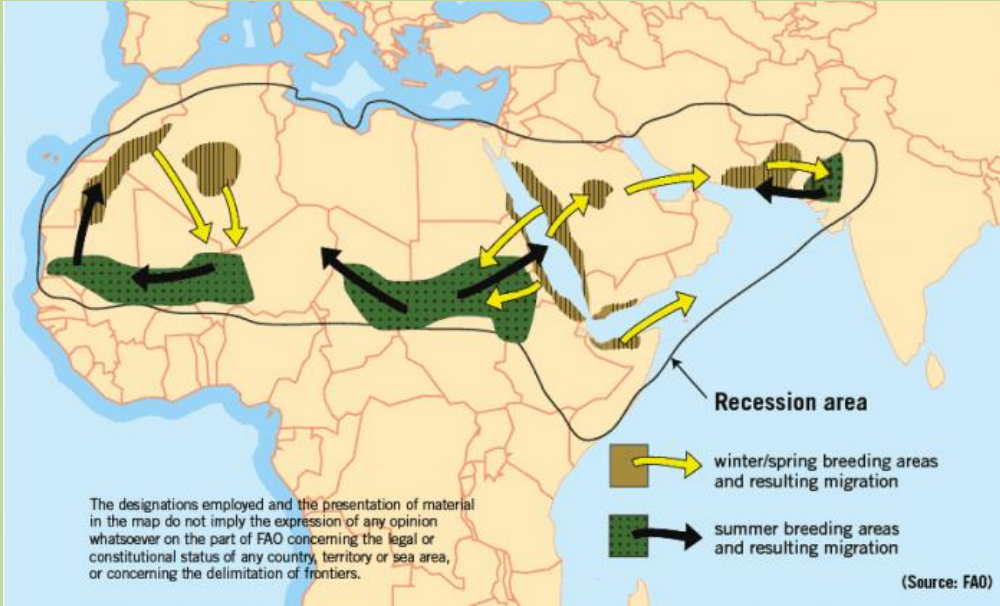
Life stages: Egg, Nymph (Hopper), Adult



Breeding Season:

- (i) Winter breeding [October to Jan/Feb]
- (ii) Spring breeding [Feb to June]
- (iii) Summer breeding [July to October]

India has only one breeding season : Summer breeding
 Pakistan has both spring and summer breeding



Locust Plagues & Upsurges observed during the years in India

Locust Plagues observed during the Years
1812-1821
1843-1844
1863-1867
1869-1873
1876-1881
1889-1891
1900-1907
1912-1920
1926-1930
1940-1946
1949-1955
1959-1962

Locust Upsurges observed	
Year	Swarms incursion
1964	4
1968	167
1973	6
1974	6
1975	19
1976	2
1978	20
1983	26
1986	3
1989	15
1993	172
1997	4
2019	1500



Locust Warning Organization (LWO)-India

- LWO was established in 1939. Later on it was merged with Directorate of Plant Protection, Quarantine & Storage, Faridabad, Ministry of Agriculture & Farmers Welfare, Govt. of India in 1946.
- LWO has its field head quarters at Jodhpur. Besides, Locust Circle Offices (10 nos.) at located in Rajasthan and Gujarat. One Field Station Investigation Laboratory (FSIL) is located at Bikaner.
- Keep constant vigil through field surveys in approximately 2 lakh sq. kms Scheduled Desert Area (SDA) in the States of Rajasthan, Gujarat and Haryana.
- Avoid upsurge of locust population in SDA and entry of locust swarms into India through prompt control operations in coordination with state governments.
- Train the Farmers, State functionaries and locust staff on latest locust control technologies.

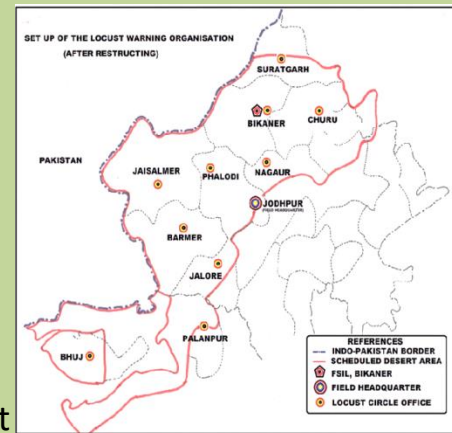
India is a member of:

- **FAO Commission for Controlling the Desert Locust in South-West Asia (SWAC)**

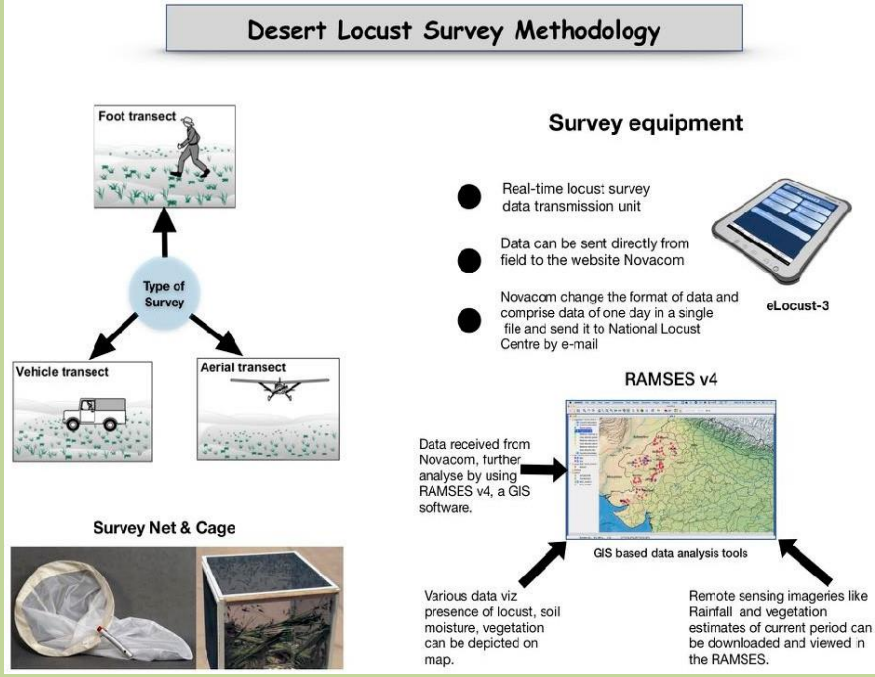
 - Locust early warning and prevention system

- **FAO Desert Locust Control Committee**

 - To keep the Desert Locust situation under review & . Coordination of the Desert Locust control campaign



Locust surveillance by LWO, India

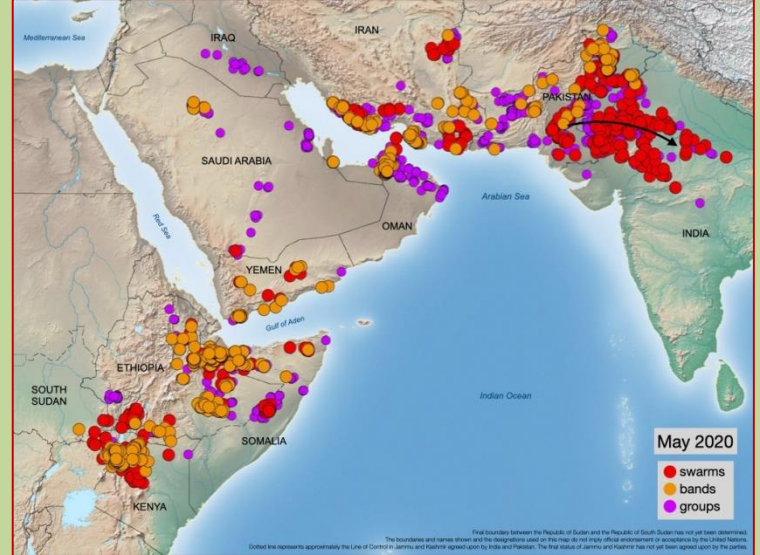
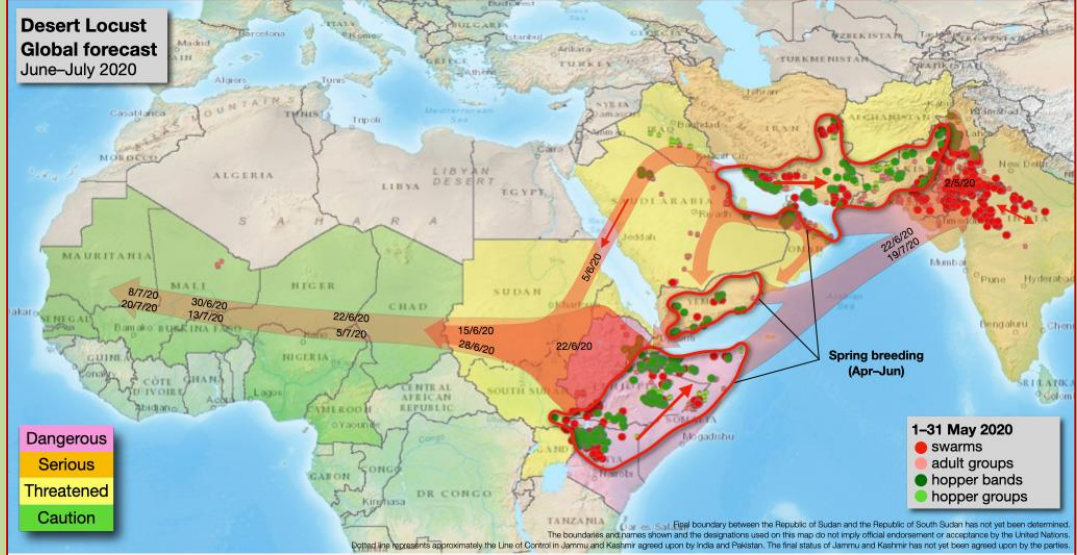


eLocust-3
Data collection unit

eLocust3g

• Real time locust swarm tracking ?

Released on 4th June 2020



Management of Desert Locust

- **Economic threshold level (ETL)** which is 10,000 adults/ha. and 5-6 hoppers/bush
- Major reliance is on use of chemical insecticides for the control of Locusts.
 - Formulations of pesticides recommended for cropped area: **11**
 - Formulations of insecticides registered for SDA: **04**
- Neem Seed Kernel Extract (NSKE) was found as a good anti-feedant against desert locust.
- Entomo-pathogens, *Metarhizium anisopliae* var. *acridum* and *Paranosema locustae* were found effective against hoppers of locusts in Africa, China etc. India has also approved.



Micro ulva/ Ulva plus
1 ha/hr



Ulva Mast
(25 ha/hr)



Micronair AU8115
40 ha/hr