

Locust Surveillance Using Geospatial Technology



nrsc

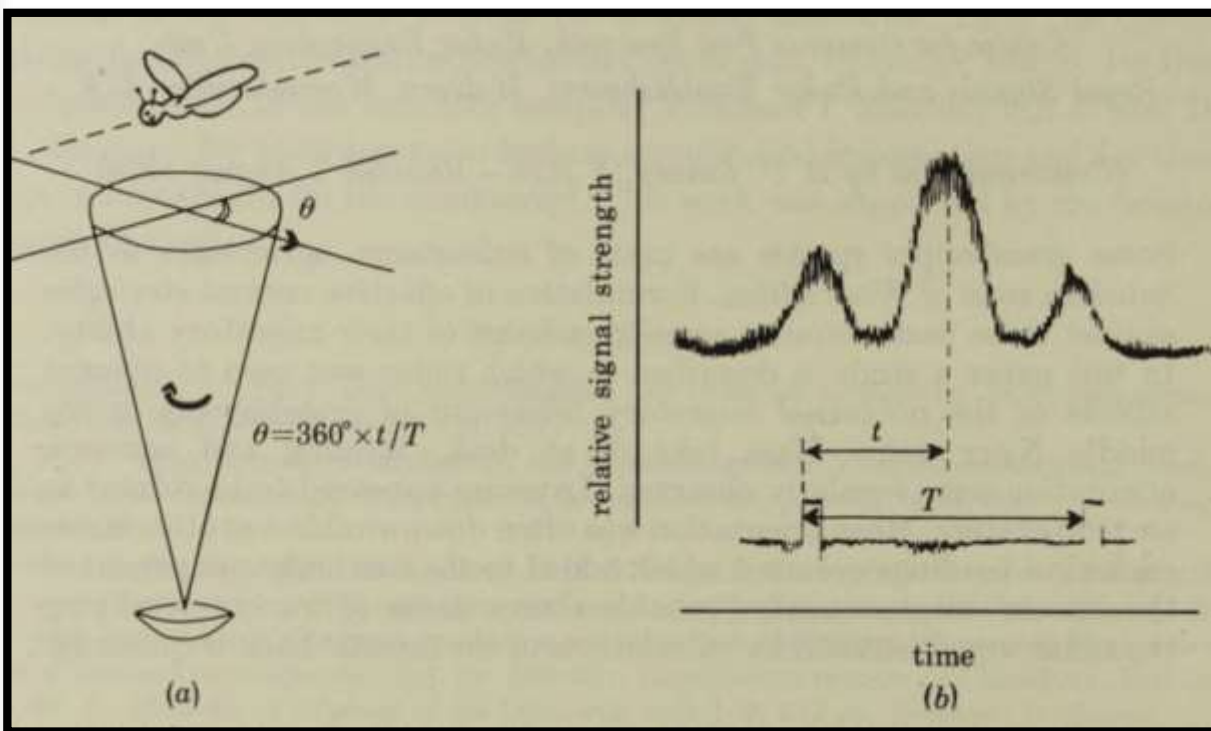
No. 2020/18
Period: 01-31 Jan.

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- Land Surface Temperature
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- Approved Pesticides for Controlling Desert

Locust

Please send your feedback to
rrsc_w@nrsc.gov.in or ssrao@nrsc.gov.in



(a) Geometry of vertical looking radar. (b) Typical returned signal showing wing-beat modulation superimposed on the lower frequency, large amplitude polarization

Image courtesy: Riley and Reynolds (1979)

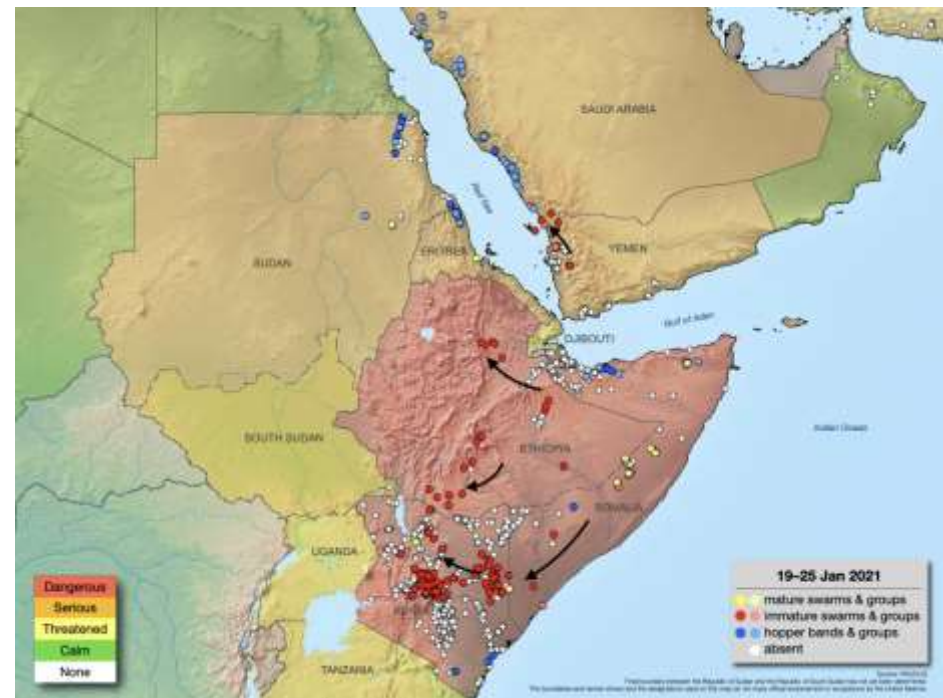
Locust Surveillance Using Geospatial Technology Bulletin is issued by Regional Remote Sensing Centre (West), NRSC/ISRO – Jodhpur. RRSC-W continuously monitors the weather and ecology to provide early warning based on survey and control results from Locust Warning Organisation (LWO), Jodhpur combined with remote sensing inputs.

Status

- Several immature swarms arrived on the Red Sea coast and Asir Mountains in southwest Saudi Arabia during the past week.
- In Yemen, scattered adults are present on the Red Sea and Gulf of Aden coasts.
- In the Horn of Africa, immature swarms continue to arrive and disperse throughout northern and central Kenya. In the past two days, swarms have been reported in the 10 villages and few swarms have started to mature.
- In the southeast, fledging occurred near Taita Taveta and a few late instar hopper bands were present along the coast
- In Ethiopia, immature swarms have moved into Afar and eastern Amhara regions
- In Somalia, hopper groups and bands are present on the northwest coast and in the northeast where laying is still ongoing.

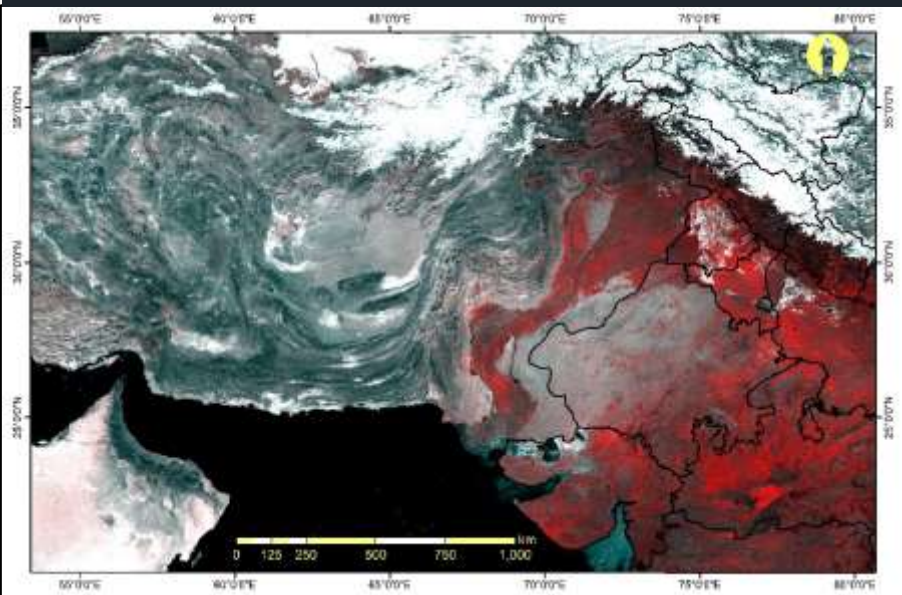
Forecast

As conditions remain dry in some parts of southern and northern Ethiopia and north-central Kenya, the swarms are likely to spread out looking for favourable areas to mature and lay eggs if rains fall in the coming weeks. This would give rise to hopper bands during February and March. .

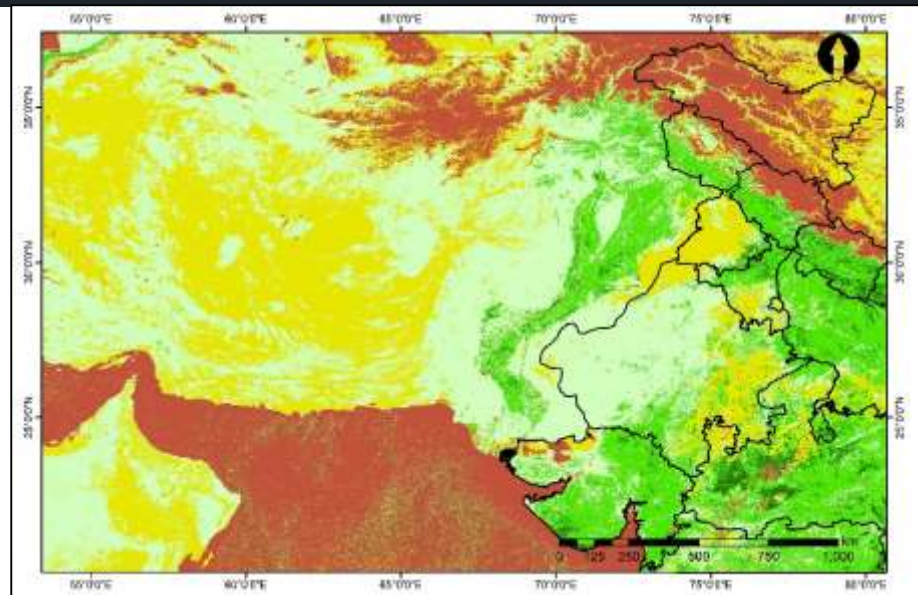


False Colour Composite (FCC)

Normalized Difference Vegetation Index (NDVI)

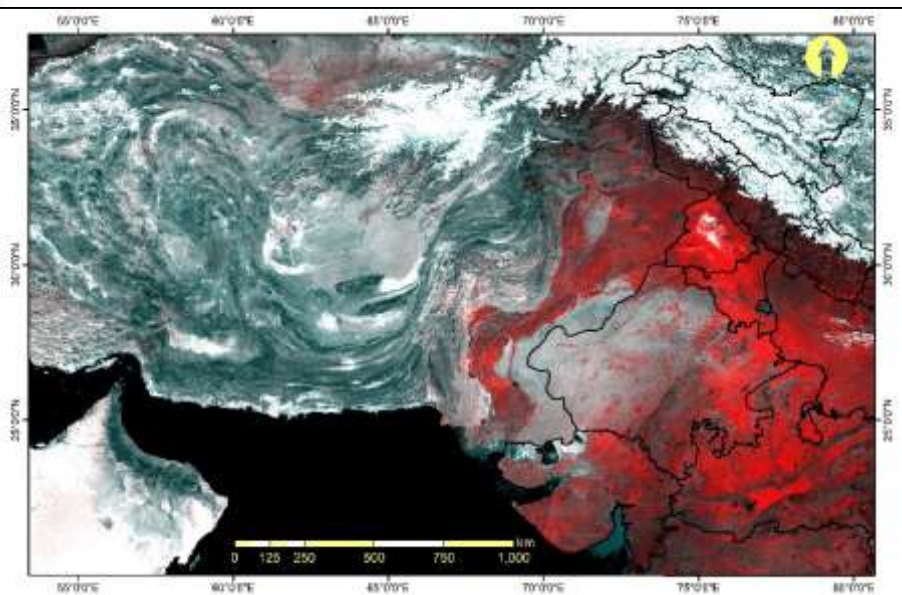


1st Jan – 8th Jan, 2021

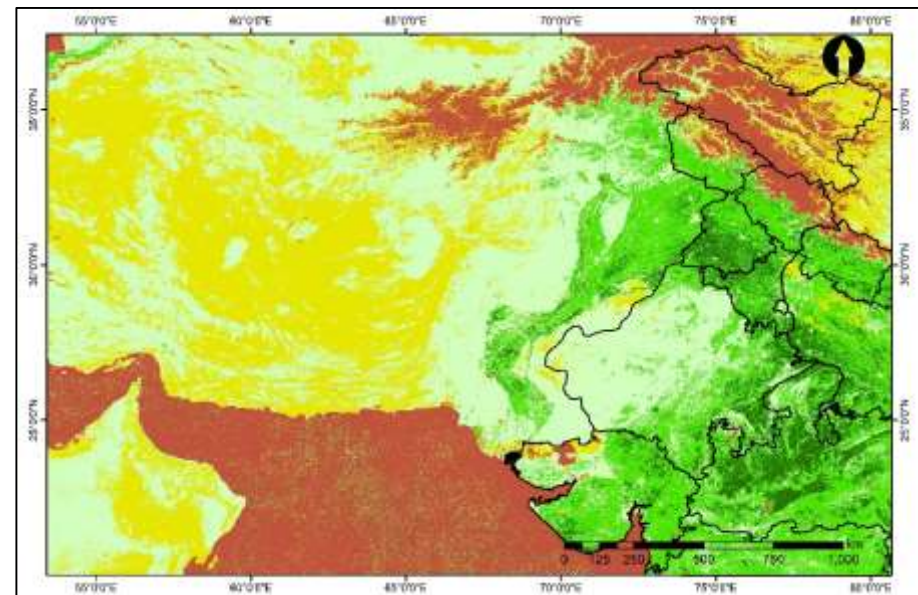


1st Jan – 10th Jan, 2021

■ < 0.0
 ■ 0.0 - 0.1
 ■ 0.1 - 0.4
 ■ 0.4 - 0.7
 ■ 0.7 - 1.0



17th Jan – 26th Jan, 2020

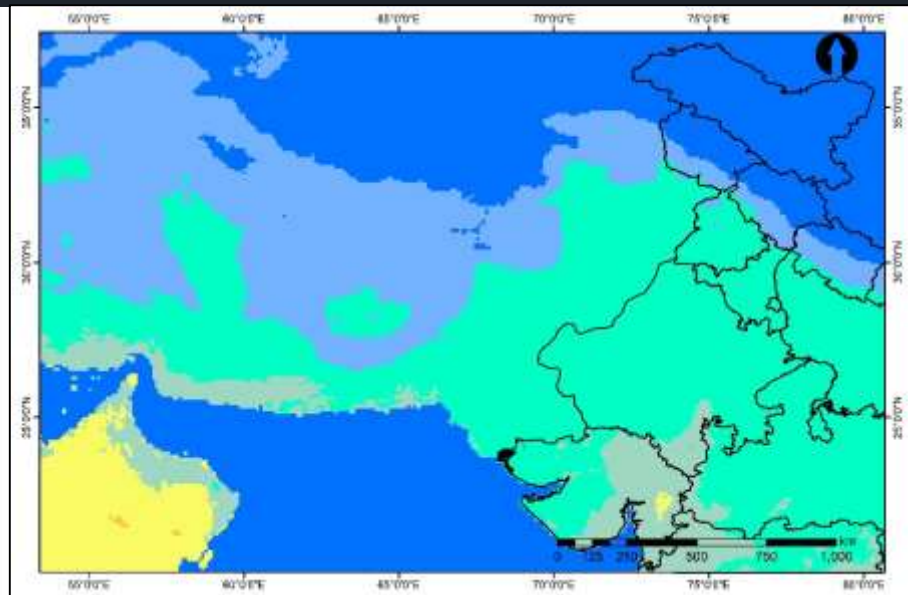


16th Jan – 25th Jan, 2021

Source: MODIS 8 day Composite

Source: eMODIS Ver. 6

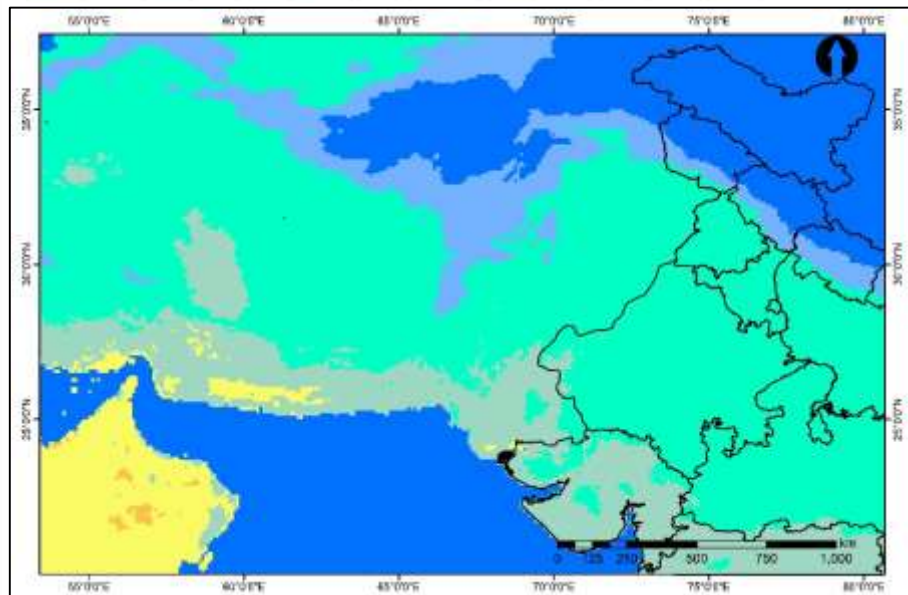
Land Surface Temperature (°C)



19:00 Hrs. IST of 1st Jan 2021

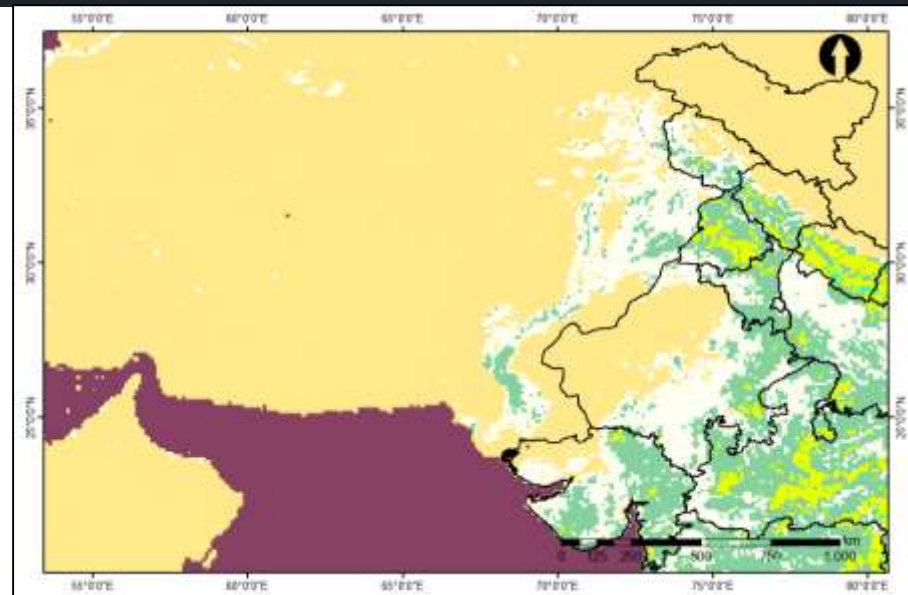
Legend for LST (°C):

Blue	Light Blue	Light Green	Green	Yellow	Orange	Brown
< 0	0 - 10	10 - 20	20 - 25	25 - 30	30 - 35	35 - 40



19:00 Hrs. IST of 29th Dec 2021.

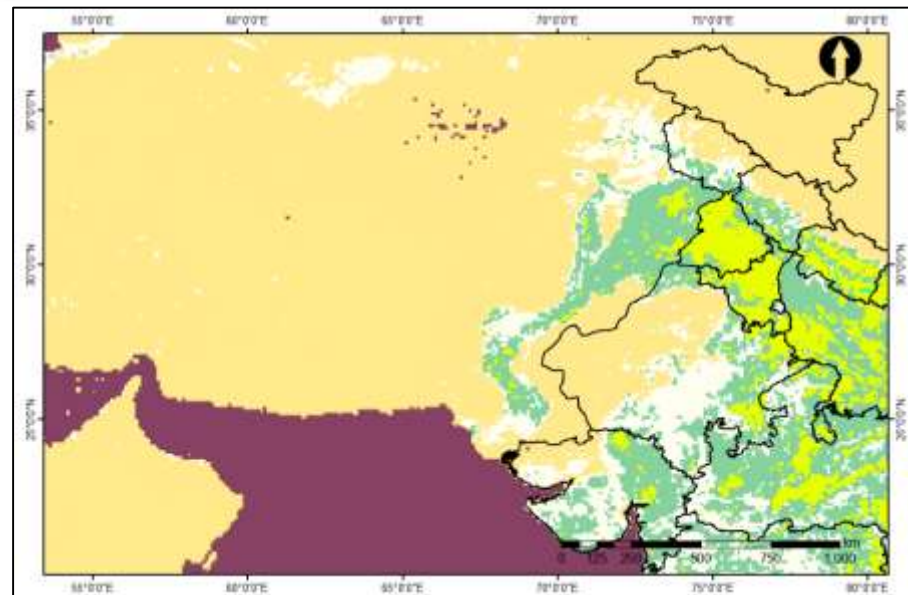
Leaf Area Index (LAI)



19:00 Hrs. IST of 1st Jan 2021.

Legend for LAI:

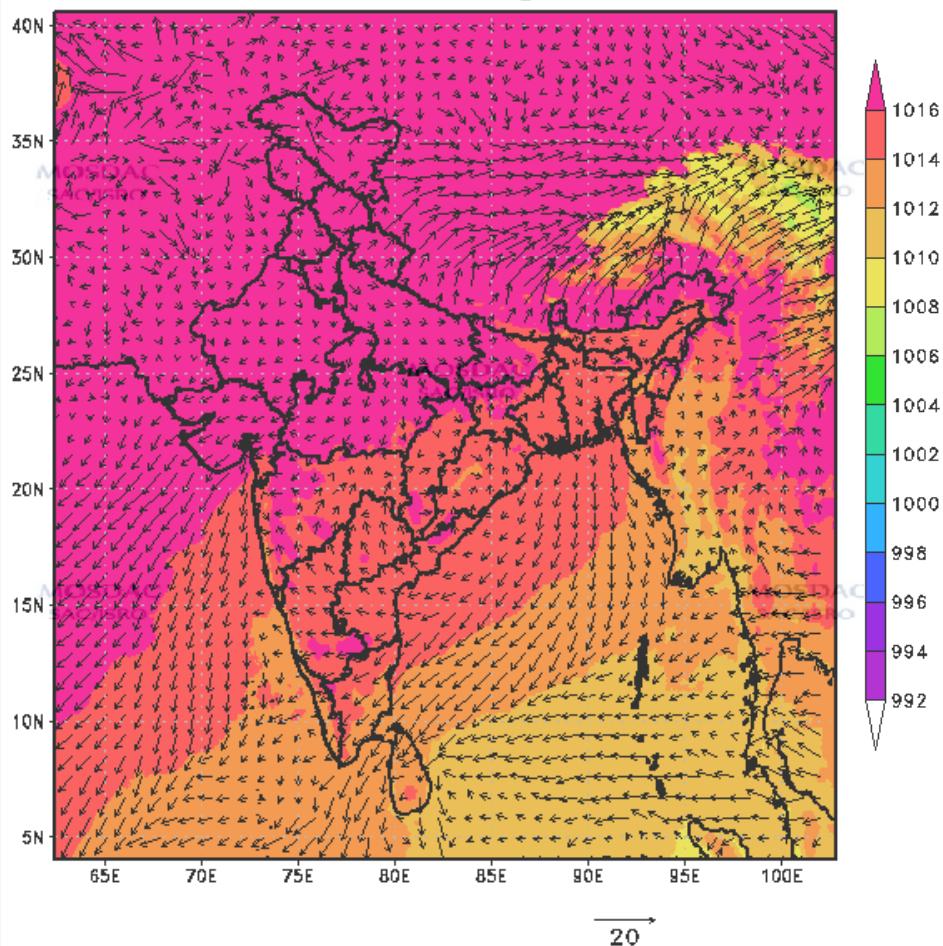
Dark Purple	Light Purple	Yellow	Light Green	Green	Light Yellow	Yellow
< 0	0 - 0.25	0.25 - 0.50	0.50 - 1.00	1.00 - 3.00	3.00 - 5.00	



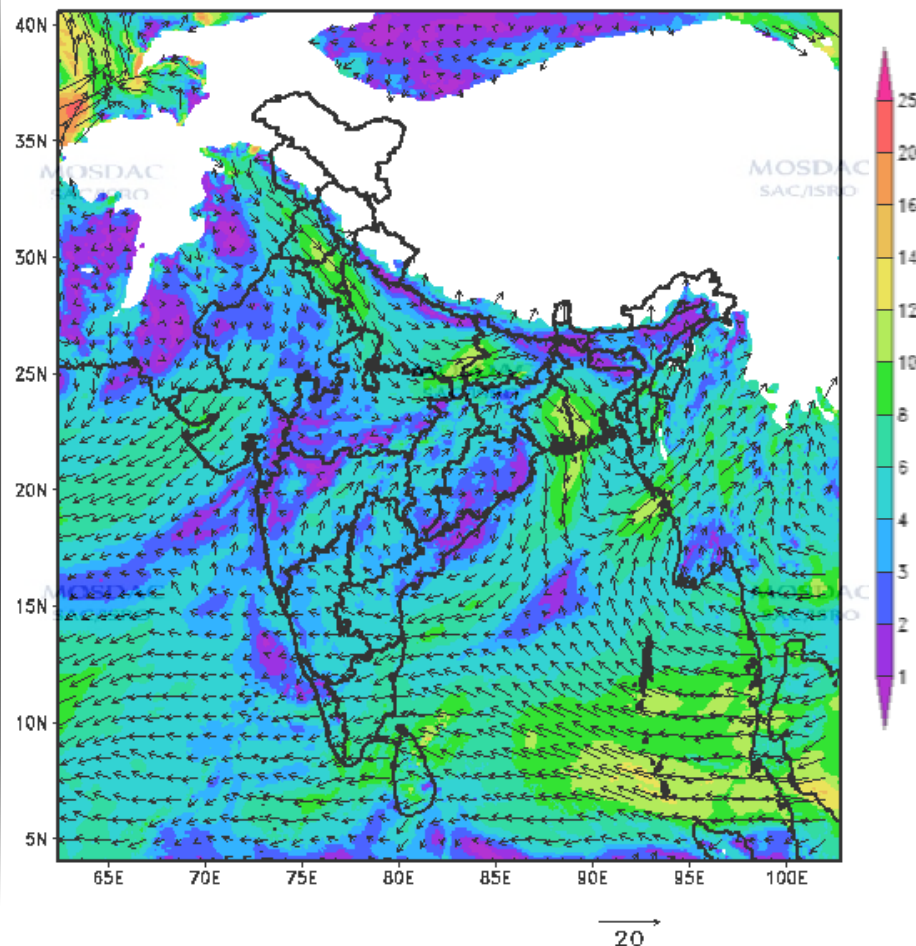
19:00 Hrs. IST of 29th Dec 2021.

Wind Vectors

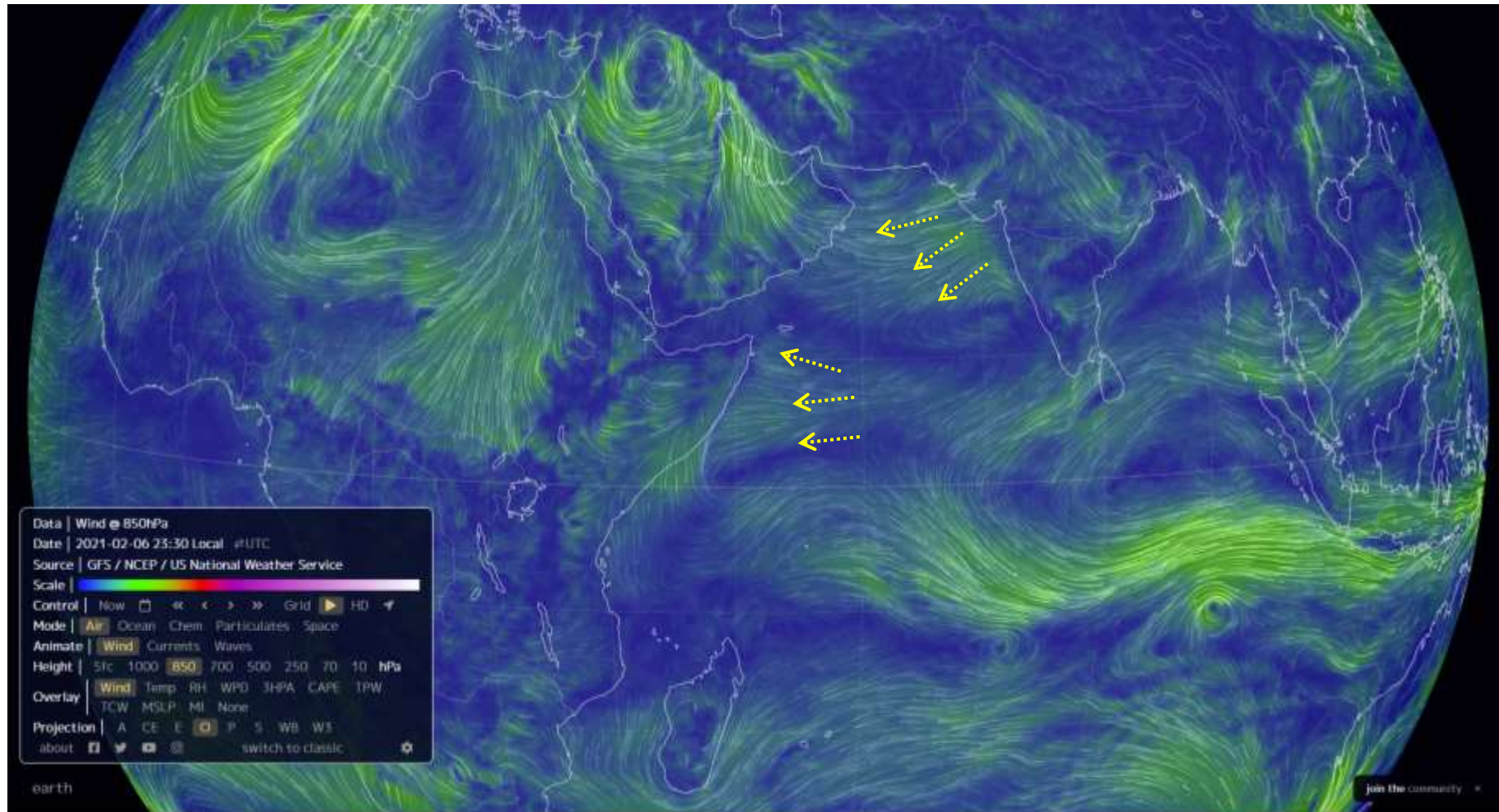
06hr Forecast valid for 1130 IST 29JAN2021
MSLP & 10m height Wind



06hr Forecast valid for 1130 IST 29JAN2021
850 hPa Wind

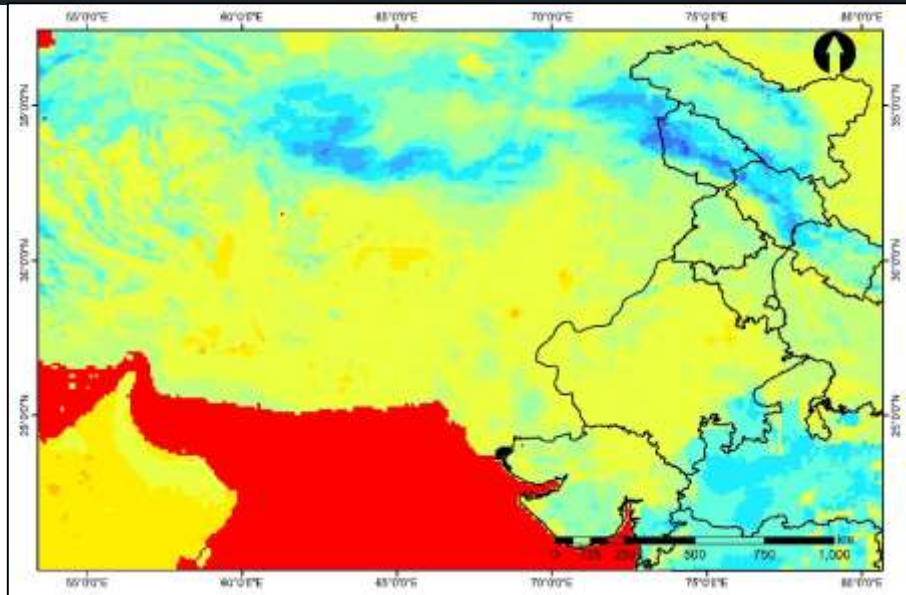


Wind Speed and Direction Modelled By Global Forecast System

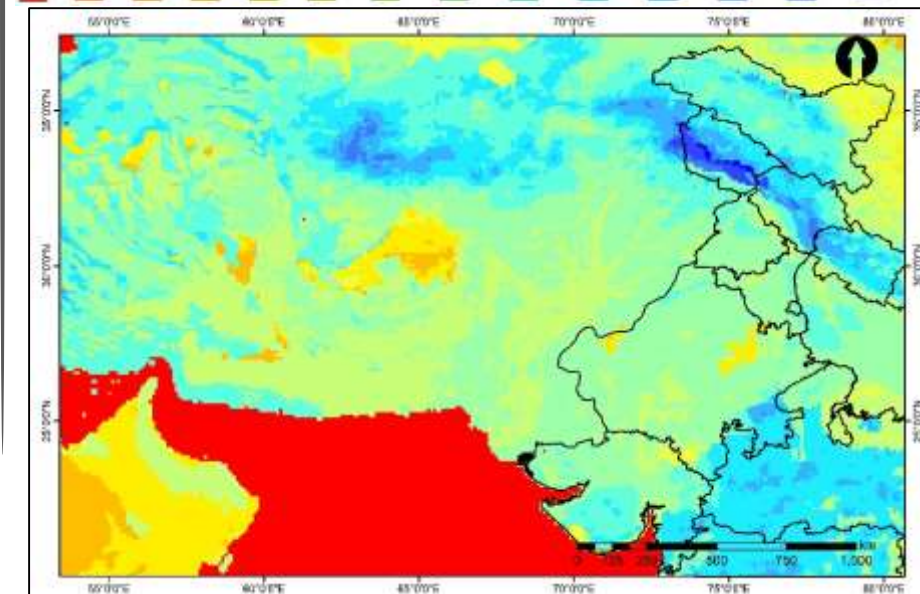
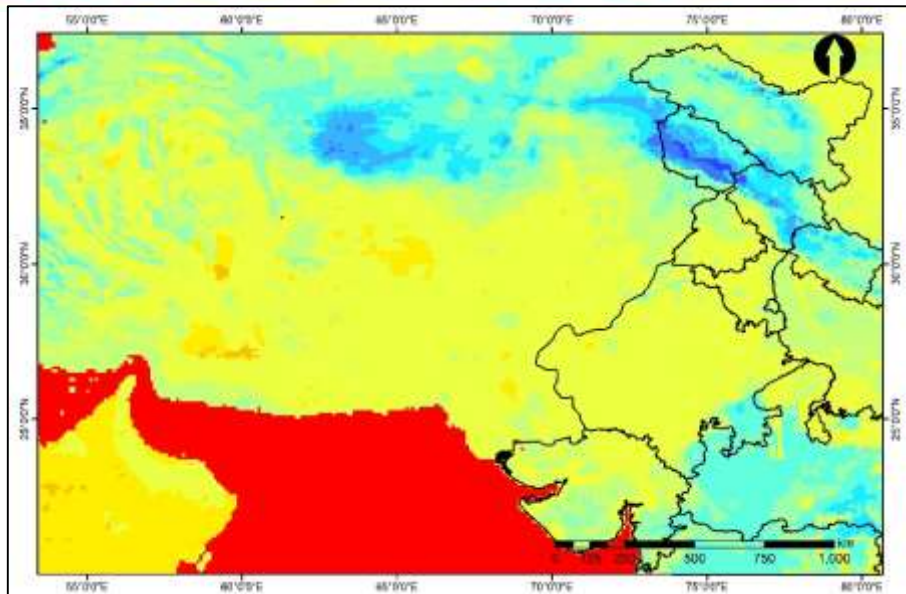
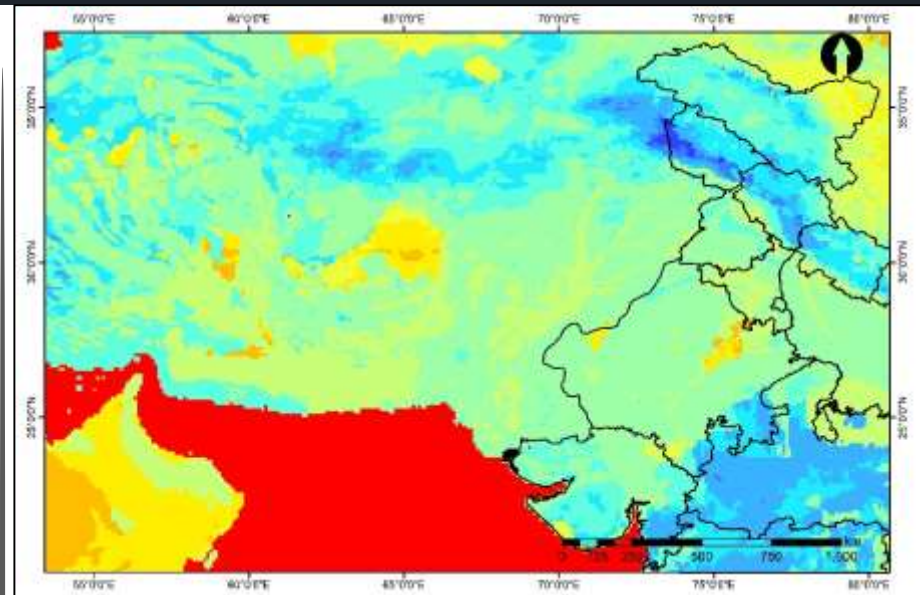


Till 06 Feb, 2021

Surface Soil Moisture Map (%)



Root-Zone Soil Moisture Map (%)



Source: SMAP Enhanced L4 Global 3 Hourly 9 km Product

19:00 Hrs. IST of 29th Jan 2021.

19:00 Hrs. IST of 29th Jan 2021.

List of various approved pesticides for control of Desert Locust

A. Pesticides approved used for control of Desert Locust in Scheduled Desert Area only

S.No.	Chemical	Dosage	
		a.i.(gms)/ha	Formulations (gm/ml)/ha
1	Malathion 96% ulv	925	1000
2	Malathion 5%DP	925	20000
3	Fenvalrate 0.4%DP	80-100	20000-25000
4	Quinalphos 1.5%DP	375	25000

B. Pesticides approved used for control of Desert Locust on crops, Acacia& other trees.

S.No.	Name of pesticides	a.i.(gms)/ha	Formulations (gm/ml)/ha
1	Chloropyriphos 20%EC	240	1200
2	Chloropyriphos 50%EC	240	500
3	Deltamethrin 2.8%EC	12.5	500
4	Deltamethrin 1.25% ulv	12.5	1000
5	Diifubenzuron 25%WP	60*	240
6	Fipronil 5%SC	6.25	125
7	Fipronil 2.92%EC	6.25	220
8	Lamdacyhalothrin5%EC	20	400
9	Lamdacyhalothrin10%WP	20	200
10	Malathion 50% EC	925	1850
11	Malathion 25% WP	925	3700

*Only for hoppers control