

THE HINDU EXPLAINS

Relevant for: Environment | Topic: Disaster and disaster management

The story so far: India is gearing up for what could be [one of its worst locust invasions](#) in decades. Outbreaks of the insect attack have been reported from Gujarat, Rajasthan, Maharashtra, Madhya Pradesh, Punjab, Haryana and Uttar Pradesh. On Thursday, May 28, the Delhi government issued an advisory to farmers to spray pesticides and keep a possible attack at bay. Last year, Gujarat and Rajasthan had reported infestations. But it could be worse this year because of a chain of climate events, administrative laxity in several countries and the difficult circumstances brought on by the COVID-19 pandemic. Experts have warned of huge crop losses if the swarms are not stopped by June when the monsoons will lead to a new season of sowing rice, sugarcane, cotton and other crops.

The last big infestation was in 2010. There were 13 locust plagues between 1964 and 1997. From 1997 to 2010, there were five outbreaks that were controlled. From 2010 to 2018, there were no major swarms or breeding reported, according to the Locust Warning Organization (LWO), in Jodhpur. In 2019, Gujarat and Rajasthan reported a significant surge in locust infestations. Nearly 3.5 lakh hectares of cumin, rapeseed and mustard were damaged and officials had then said that it was the worst attack since 1993. This was partly due to an unusually long monsoon but also because pest-control operations were inadequate; therefore, nascent populations of the insect had not been wiped out.

Also read | [Locust surge may turn into global plague: expert](#)

As a result of the 1926-1931/1932 locust plague, India, under the British Raj at the time, began research into the desert locust, beginning in 1931. It then led to the establishment, in 1939, of a permanent Locust Warning Organization (LWO), with a station in Karachi (undivided India). Its main job was to keep an eye for a specific sub-species of the insect, the desert locust, that sprang into the region from the Thar desert. There is a wealth of scientific and newspaper reports that point to locust attacks being a major scourge to the colonial administration and hence the references to it as a “plague” which is how they continue to be recorded to the present. There were serious outbreaks in 1812, 1821, 1843-44, 1863-67, 1869-73, 1876-81, 1889-98, 1900-1907, 1912-1920. A particularly bad season in 1926-1931 prompted the imperial administration to establish the Karachi warning centre and after Independence, India established its own centre at Jodhpur, Rajasthan, as a part of the Directorate of Plant Protection Quarantine and Storage, under the Ministry of Agriculture.

Also read | [Grasshoppers mistaken for locusts across T.N.](#) | [Swarm of grasshoppers leads to locust scare in A.P.](#)

A pattern of warming in the Indian Ocean may be a trigger. A phenomenon called the Indian Ocean Dipole, in which the western and eastern parts of the ocean, warm differentially, tend to have an outsized impact in bringing excessive rains to India and West Asia. A ‘positive’ dipole is when the western part is hotter by a degree or more than the eastern. Last year saw one of the strongest positive dipoles in the Indian neighbourhood which brought on a difference of more than two degrees.

The Indian Ocean Dipole was so strong that it over-rode concerns of a drought in India last June and brought torrential rainfall — the most India has seen in decades. It also lasted nearly a month more than what is normal. This extended rainfall continued in several parts of West Asia, Oman, Yemen and in the Horn of Africa — Ethiopia, Somalia, Kenya — so much so that that the

dry sand became heavily moisture laden, facilitating the formation of several locust swarms. While this dipole was beginning to take shape by late 2018 — and locust outbreaks were growing in Africa — it increased last year. Due to favourable winds, it helped swarms to fly and breed in traditional grounds in Iran, Afghanistan, Pakistan and India. The Food and Agriculture Organization (FAO), a specialised agency of the United Nations has been sending alerts on developing swarms. Somalia announced a national state of emergency due to the outbreak in February 2020, while Pakistan declared a national emergency for the second time this year, in April. The unusually mild summer this year, which saw several bouts of rainfall over north and western India from March to May, also helped the insects breed. The normal locust season in India spans June-November and coincides with the kharif season. So far swarms have been recorded in nearly 50,000 hectares in Rajasthan and Madhya Pradesh and if they continue to thrive as the monsoon arrives, it could cause serious agricultural damage.

[Editorial](#) | [The swarm](#)

A locust attack has to be dealt with by spraying pest control and plant protection chemicals. According to the FAO's locust situation bulletin of May 27, adult locusts were forming groups and small swarms in spring breeding areas in Baluchistan, Indus Valley (Pakistan) and southern coast and parts of Sistan-Baluchistan. These infestations are likely to move to the summer breeding areas along India-Pakistan from Cholistan to Tharparkar.

In India, existing groups of swarms have continued to move east and to the central States of Madhya Pradesh and Maharashtra. Much of these movements were associated with the strong westerly winds of Cyclone Amphan. Several successive waves of invasions are likely until July in Rajasthan, with eastward surges across northern India as far as Bihar and Odisha followed by westward movements and a return to Rajasthan on the changing winds associated with the monsoon. These movements will cease as swarms begin to become less mobile. The swarms are less likely to reach Nepal, and Bangladesh and south India, according to experts.

Also read | [Locust threat is bigger this year, warns Agriculture Ministry monitor](#)

Indian officials, last year and this year too, have blamed Pakistan for not spraying adequate pesticide to stem the nascent population. It has been part of the protocol for many years, for entomologists from India and Pakistan to conduct border meetings and divide pest control responsibilities. While the lack of funds and inadequate monitoring have been a problem for many years, as the FAO has frequently pointed out, the novel coronavirus pandemic this year has caused unusual focus on natural disasters such as cyclones as well as locust attacks.

While locusts are unlikely to be a threat in urban centres as they do not have much to feed on, the national lockdown has made the availability of pesticide as well as its transportation difficult. With labour also not being available easily due to the lockdown, this could affect spraying operations and, as a result, allow locusts to cause significant damage.

Experience shows that a locust plague usually follows a one to two year cycle after which there is a lull for eight to nine years. However, strong Indian Ocean Dipoles are expected to become more frequent whetted by an overall trend of warming oceans. This phenomenon could trigger regular locust infestations.

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A huge challenge is likely to emerge when the swarms flying over 20 districts in Rajasthan start breeding.

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