

Climate Change, Locust Swarms and Food Security: What to look forward

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ABOUT RIKA

RIKA is a social entrepreneurship startup (DIPP-29629) with an aim of bringing research into the core of disaster management activities in India and other parts of South Asia. Resonating the Sendai declaration in relation to the need for widening the scope of Science and Technology in the disaster management, we at RIKA envision to act as a bridge connecting academic research, policy makers and field practitioners to make informed decisions and use of new technologies

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Amidst the global COVID-19 pandemic, the African and Indian peninsula witnessed a novel upsurge, the desert locust plague, which disrupted parts of the region. UN experts suggest the plague as an aftermath of cyclones of 2018-19 around the East African-South Asian zone, which brought heavy rains to the Arabian Peninsula and allowed at least three generations of undetected breeding. The risk is huge as in favorable conditions, the locusts could breed at a rate of 400 times in six months, could cover 400 km a day, and a colony of 40 million could cover vegetation equaling 3 million populations. This could result in food scarcity and increased risk amongst socially underprivileged groups as the climate change-induced Indian Ocean dipole is found to exacerbate the conditions.

India has a history of independent locust attacks but the recent years have been overwhelming. Researchers suggest that the regions of India around Rajasthan, Delhi, etc., have become the locust breeding ground, and it exposes more regions to their attack in recent times. While India's Locust Warning Organization (LWO) has been monitoring the situation for decades, the officers share their concern of changing trends in the arrivals over the last few years, disrupting the plans, which is complexed by abnormal breeding. The climate scientists foresee the growing trend, owing to the increased precipitation in the region. While significant measures have been advocated by government organizations, there is an underlying cross country level challenge that this hazard brings about.

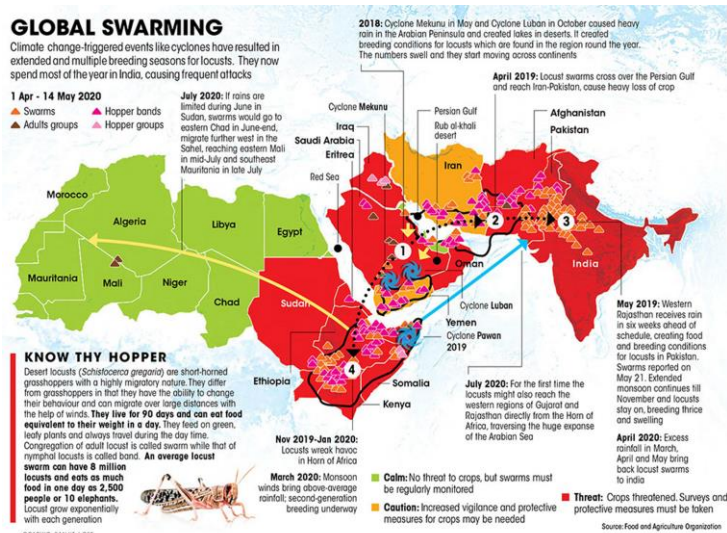


Figure 1- Locust Swarm Movements in the world, 2019-20 [3]



Amidst responses, ‘Response to the locust plague’ (2014) by the Food and Agricultural Organization, UN had formulated a three session campaign to eradicate the locust plague of Madagascar. The major principles of the campaign were

- Improving monitor capacity and locust situation analysis
- Strengthen locust control capacity
- Preservation of human health and environment
- Program implementation and coordination.
- Assessment of the program’s effectiveness on the region.

India has also responded to the locust attacks in the region. Apart from formulating Integrated Pest Management (IPM) approach, various schemes such as ‘Locust control and research scheme’ have been launched to promote assistance to state governments and union territories for protection against the locust plague crisis. LWO, India under the Locust Control and Research Center has been mandated to

- Monitor, warn and control
- Research on bio efficacy of new pesticide molecules
- Fulfill the international obligations with FAO, UN.
- Participate and organize South-west Asia Commission for desert locust control.

The department has been employing local practices such as ‘eLocust3m’ mobile application for real-time data collection and dissemination, and employing on-field officers for service delivery. Even while the government agencies have the plague under control, the potential threat to the region is still persistent. The present usages of pesticides for locust prevention would eventually affect the human health and well-being.

The way forward:

A one way solution for the locust infestation is impossible as the plague issue transcends national borders. The major step towards managing the plague infestation should be a combination of both scientific and social methods for the prevention. Some of the possible remedies are

- 1) Advocating researches on crop/human friendly chemicals and biological agents for pest control.

References:

[1] National Disaster Management Plan, 2019. A publication of the National Disaster Management Authority, Government of India. November 2019, New Delhi.

[2] Referred from 'thewire' article 'Climate Change Brings the Worst Locust Attack in Decades to India' <https://science.thewire.in/environment/locust-attack-india-jaipur-climate-change/>

[3] Referred from the article 'Locust Swarms: How can they be warded off' <https://www.downtoearth.org.in/news/climate-change/locust-swarm-invasion-the-wind-factor-72135>

[4] Response to the locust plague 2013-14, FAO UN <http://www.fao.org/3/a-bl239e.pdf>

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- 2) Promoting inter agency coordination within the national levels such as weather forecasting, to promote knowledge for effective pest management.
- 3) Data dissemination on breeding grounds and possible risk zones both at local and global level by the authorities.
- 4) Proposing locust management plans and capacity building schemes for the states of India.
- 5) Addressing climate change issues and promoting sustainable goals for better risk management at the national and global level.

It is imperative that locust plagues be regulated in the coming years as it could hinder the global progress towards sustainability. The way forward lies in the collaboration between various stakeholders for a better future.