

## **6. Locust Attack**

**Prelims Level:** Climate change and its Impacts

**Mains Level:** GS-III Disaster and Disaster Management

### **Context:**

- In recent weeks, locust swarms have attacked crops in more than a dozen countries in Asia and Africa. The United Nations have announced that the situation is extremely alarming in three regions - the Horn of Africa, the Red Sea area, and southwest Asia. The Horn of Africa being the worst-affected area.

### **The Locust Emergency:**

- Locust swarms from Ethiopia and Somalia have reached south to Kenya and 14 other countries in the continent.
- In the Red Sea area, locusts have struck Saudi Arabia, Oman and Yemen.
- In Asia, locust swarms have savaged Iran, Pakistan and India.
- Huge swarms of locusts have struck border villages in Rajasthan, Gujarat and Punjab - causing heavy damage to standing crops prompting the state governments to sound high alert against locust attacks.
- Pakistan and Somalia have declared national emergency to battle locusts

### **The Locusts Attack:**

- Locusts are the oldest migratory pest in the world. They differ from ordinary grasshoppers in their ability to change behaviour (gregarize) and form swarms that can migrate over large distances.
- The most devastating of all locust species is the Desert Locust (*Schistocerca gregaria*).
- During plagues, it can easily affect 20 percent of the Earth's land, more than 65 of the world's poorest countries, and potentially damage the livelihood of one tenth of the world's population. During quiet periods, Desert Locusts live in the desert areas between West Africa and India – an area of about 16 million square km where they normally survive in about 30 countries.
- Locusts have a high capacity to multiply, form groups, migrate over relatively large distances (they can fly up to 150 km per day) and, if good rains fall and ecological conditions become favourable, rapidly reproduce and increase some 20-fold in three months.

- Locust adults can eat their own weight every day, i.e. about two grams of fresh vegetation per day.

### **What is the Relationship between locusts and climate change?**

- During quiet periods—known as recessions—desert locusts are usually restricted to the semi-arid and arid deserts of Africa, the Near East and South-West Asia that receive less than 200 mm of rain annually.
- In normal conditions, locust numbers decrease either by natural mortality or through migration.
- However, the last five years have been hotter than any other since the industrial revolution and since 2009.
- Studies have linked a hotter climate to more damaging locust swarms, leaving Africa disproportionately affected—20 of the fastest warming countries globally are in Africa.
- Wet weather also favours multiplication of locusts. Widespread, above average rain that pounded the Horn of Africa from October to December 2019 were up to 400 per cent above normal rainfall amount.
- These abnormal rains were caused by the Indian Ocean dipole, a phenomenon accentuated by climate change.

### **How can Locusts be Controlled?**

- Controlling desert locust swarms primarily uses organophosphate chemicals by vehicle-mounted and aerial sprayers, and to a lesser extent by knapsack and hand-held sprayers.
- Extensive research is ongoing regarding biological control and other means of non-chemical control with the current focus on pathogens and insect growth regulators.
- Control by natural predators and parasites so far is limited since locusts can quickly move away from most natural enemies.
- While people and birds often eat locusts, this is not enough to significantly reduce population levels over large areas.
- While the traditional form of control considered is use of pesticides, the impact of these chemicals on the environment and other critical ecosystems key to food security—such as bees and other insects, which not only pollinate up to 70 percent of our food but also may have an impact on human health—cannot be overlooked.

### **What is the role of the United Nations in Locust Control?**

- The United Nations' response to locust attack control is multi-agency in nature. While the immediate sector at risk is food security, climate change plays an exacerbating role.
- One of UNEP's roles is to disseminate the latest science on emerging climate trends to inform cross-sectorial policies and ensure resilience is built in the relevant sectors.
- The role of the World Meteorological Organization is to forecast the more immediate weather changes that may exacerbate the locusts' attacks.
- The World Health Organization's role is to classify potential risks of different chemical agents to enable governments to invest in the safest one.
- One of the mandates of the Food and Agricultural Organizations is to provide information on the general locust situation and to give timely warnings and forecasts to those countries in danger of invasion. The organization operates a centralized desert locust information service.

### **The Case of India:**

- In June 2019, the Indian side of the Thar desert received unexpected rainfall, which again made conditions conducive for locusts to lay their eggs.
- Usually, the southwest monsoon hits western Rajasthan on July 1.
- Barmer district in Rajasthan, part of the Thar, broke all records in June. It received a 14-day spell of rainfall.
- This led to a lot of locust breeding in the Thar region
- Locusts need moisture in sand to breed. They do breed in dry deserts too but the nymph (immature insect) fails to come out of the egg because of the heat.
- The rain also led to the sprouting of desert vegetation like grasses. This led to more breeding of locusts, that got a ready food supply.
- Locusts usually leave India by November. In 2019, however, this did not happen as there were nine days of rainfall in November 2019.
- Pests are changing their behavior and adapting to changing climate. Locusts that leave India at the onset of winter, are now spending winters.