Locusts, cyclones in the time of COVID-19: the climate impacts will not wait

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Unprecedented Times; but no time left

• COVID-19 has disrupted economies; destroyed livelihoods; massive deaths and added to huge misery of the very poor in our world

• But in this pandemic, when governments have little ability to handle the ‘normal’ there is the ‘other’ global catastrophe looming; and showing up – climate change

• We need to understand that this is not going away and will make our world more vulnerable to shock and disruption
Why bring in climate change?

• We hear the following:
  • Bush fires always happened;
  • Floods and droughts always happened;
  • Cyclones always happened
  • Locusts always happened

So are we linking to climate change?
The disruption is about changes in temperatures – on land, on ocean and the changing variations between the different systems.

No doubt (even among hardest sceptics) that global temperature has risen in the past decades. Each year is the hottest year ever recorded and breaks the previous year record.

No doubt now that number of cyclones are increasing -- frequency is up; no doubt also that there is ‘rapidification’ of cyclones because of this change in temperature between land-sea; adding to force and intensity of event.

No doubt that extreme and variable rain-events have increased.

All this, then adds up to the link between what we are seeing again and again to climate change – variable and extreme rain, cyclones; bush fire and now locusts.
Locusts: desert creature that multiply exponentially when conditions are right

- Right conditions

- Rain in the desert conditions; unexpected; prolonged so that it creates ‘right’ conditions for multiplication

- Vegetation – food when there should have been scarcity

- Higher temperatures – for movement and growth
Unusual weather events in Arabian Peninsula

Cyclone Luban October 2018
Cyclone Mekanu, May 2018
Cyclone Pawan December 2019

Lakes were formed in the desert
Locust found their ‘right’ breeding opportunity

Exponential
THE SWARMS STARTED MOVING TOWARDS EAST AFRICA AND IRAN IN 2019

2018: Cyclone Mekunu in May and Cyclone Luban in October caused heavy rain in the Arabian Peninsula and created lakes in deserts. It created breeding conditions for locusts which are found in the region round the year. The numbers swell and they moving across continents.

May 2019: Western Rajasthan receives rain in six weeks ahead of schedule, creating food and breeding conditions for locusts in Pakistan. Swarms reported on May 21. Erratic monsoon continues till November and locusts stay on, breeding thrice and swelling.

April 2019: Locust swarms cross over the Persian Gulf and reach Iran-Pakistan, cause heavy loss of crop.

November 2019 to January 2020: Locusts wreak havoc in countries in the Horn of Africa.

1 Apr - 14 May 2020
- Swarms
- Hopper groups
- Hopper bands
- Adults groups

Calm: No threat to crops, but swarms must be regularly monitored
Caution: Increased vigilance and protective measures for crops may be needed
Threat: Crops threatened. Surveys and protective measures must be taken.

Source: Food and Agriculture Organization

May 2020: Excess rainfall in March, April and May bring back locust swarms to India.
FAVORABLE CONDITIONS IN INDIA AND EAST AFRICA HELPED THEM MULTIPLY

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Locusts wreak havoc in countries in the Horn of Africa

Spring breeding (Apr-Jun 2020)

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NOW THEY ARE BACK AGAIN DUE TO UNUSUAL RAINFALL IN ALL REGIONS

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KNOW THY HOPPER

Desert locusts (Schistocerca gregaria) are short-horned grasshoppers with a highly migratory nature. They differ from grasshoppers in that they have the ability to change their behaviour and can migrate over large distances with the help of winds. They live for 90 days and can eat food equivalent to their weight in a day. They feed on green, leafy plants and always travel during the day. Congestion of adult locust is called swarm while that of nymphal locusts is called band. An average locust swarm can have 8 million locusts and eats as much food in one day as 2,500 people or 10 elephants. Locusts grow exponentially with each generation

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- Adults groups

Caution: Increased vigilance and protective measures for crops may be needed

Threat: Crop threatened. Surveys and protective measures must be taken

Source: Food and Agriculture Organisation
Total loss has been pegged at 40,000 hectares in initial estimates.

Excess rainfall in north western, northern and central India has caused the rapid multiplication of locusts.

Overall wind direction over India after super cyclone Amphan is from the north west direction.

The winds have two branches - one towards central and east India and the other towards peninsular India.

Locusts have already reached Maharashtra and central Madhya Pradesh.

Alerts have been generated in Telangana and Karnataka in South India; Bihar and Chhattisgarh in eastern India.

### India 2020

**13-19 May**

- **Swarms**
- **Groups**
- **Adults**

### All India District Rainfall Statistics

- **No Data**
- **Deficient (-59% to -20%)**
- **Large Excess (60% or more)**
- **No Rain (-100%)**
- **Normal (19% to 19%)**
- **Unfilled**
- **Large Deficient (-99% to -60%)**
- **Excess (20% to 59%)**

**Overall rainfall excess in percentage**

**Number of districts with large excess rainfall**

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[Map of India showing locust swarms and rainfall statistics]
Global cooperation critical

- COVID-19; corona virus
- Air pollution
- Greenhouse gas emissions
- Locusts

All have one thing in common. They do not know national boundaries; they occupy common airsheds; move between countries/cities

All need global-regional cooperation – cannot deal with this crisis without global institutions and leadership