



## Looming Threat to Food Security

A recent report titled “State of the World’s Biodiversity for Food and Agriculture” has warned of a growing threat to global food security as a result of severe loss of biodiversity — that is, plants, animals and microorganisms that contribute to food production.

- It is released by the Food and Agriculture Organisation (FAO) of the United Nations.

### Findings

- India was placed among the countries with a very high threat to soil biodiversity on an index that was created by combining eight stressors of soil biodiversity, which include loss of above-ground diversity, overgrazing, among others.
  - Soil biota is critical for release of nutrients to the crops as well as organic matter formation. With climate change soil biota will be impacted even more and there will be further loss of nutrients causing collapse of agriculture in some places.
- The global map shows almost all of India falls in the highly stressed zone along with some parts of Africa, Americas and Asia.
- The report also highlights the loss of biological control agents (BCAs) — insects and pests — as an important factor in declining biodiversity.
  - India has noted a decline of parasitoid wasps and parasitoid flies, which play an important role in biological pest control.
  - Bangladesh has reported a decline in spiders and predatory insects in fields.
  - Nepal has mentioned a general decline in the diversity of the natural enemies of pests.
  - The United States has reported a decline of almost 40% in its grassland bird index between 1968 and 2014.
- On climate change, it notes that extreme weather events are causing major disruptions to species distribution and yields.
  - For example, rising temperatures in the tropics are pushing coffee growing towards higher elevations in mountainous areas.
  - Frequent cold or windy days in spring can also disrupt pollination process.
  - Egypt has reported that rising temperatures will lead to northwards shifts in the range of fish species, with impacts on fishery production.

### Background

- Biodiversity in agriculture is crucial to adapting to climate change.
  - E.g.: Livestock diversity is a buffer against crop failure. In India, Small land holders and landless rural dwellers manage 75% of livestock resources and obtain nearly half of their income from them.
- Risk can be reduced, for example, by raising species, breeds or varieties that are well adapted to coping with shocks such as droughts or disease outbreaks or by raising a number of different types of crops, livestock or aquatic organisms so as to increase the likelihood that at least some will survive such events.
- Before the Green Revolution [of the 1960s], India was growing a large biodiversity of crops on a landscape level. There were different cropping and tree systems at a farm level. Even if there was a failure, all crops would not be affected at the same time.
- However, specialisation of crops for high yields has made farmers vulnerable. Crop failures are

common when there is natural disaster or pest attack.

### **Food and Agriculture Organization (FAO)**

- The Food and Agriculture Organization is an agency of the United Nations that leads international efforts to defeat hunger.
- FAO is also a source of knowledge and information, and helps developing countries and countries in transition modernize and improve agriculture, forestry and fisheries practices, ensuring good nutrition and food security for all.
- Formation: 16 October 1945, in Quebec City, Canada
- Headquarters: Rome, Italy
- Every year, World Food Day (Theme for 2018- Zero Hunger) is celebrated on October 16 to commemorate the founding of the Food and Agriculture Organisation (FAO) of United Nations in the year 1945.
- The Sustainable Development Goal (SDG-2) also aims to “End hunger, achieve food security and improved nutrition and promote sustainable agriculture” by 2030.

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