Joint FAO-WMO Report: Extreme Heat and Global Food Systems (2026)

Prelims: *Current events of national and international importance | Environment | Agriculture*

Why in News?

A joint report released by the Food and Agriculture Organization (FAO) and the World Meteorological Organization (WMO) warns that extreme heat is primary threat to global food security.

Key Findings

- Most major food crops begin to suffer yield losses once temperatures ***exceed 30°C.***
- **Crop Yield Reductions (Per 1°C of Warming)**
  - **Maize:** -7.5% baseline drop (with future projections modelling up to a 10% fall per additional degree Celsius).
  - **Soybean:** -6.8% drop.
  - **Wheat:** -6.0% drop.
- The report underscores that grain production has shown negligible adaptation or increased resilience to extreme heat over the last 50 years.
- **Total Factor Productivity (TFP) Impact -** Due to escalating heat stress on land, capital, and labour, global agricultural productivity has been slashed by 21% since 1961.
- It effectively erases nearly 7 full years of structural, technological and agronomic gains.

Specific Vulnerabilities of India's Agrifood System

- The FAO-WMO report highlights India as a high-risk zone.
- **Rice Crop Vulnerability -** More frequent, intense heatwaves during crucial growth phases are destabilising rice yields.
- While Indian farmers are implementing adaptive manoeuvres such as altering sowing calendars, adopting heat-tolerant/early-flowering

cultivars, and deploying surface-cooling irrigation these measures are hitting physical and biological limits.

- **Severe Labor Deficits -** India's agrarian economy relies heavily on outdoor manual labour.
- Data reveals that in 2024, an average Indian agricultural worker lost ***648 working hours (equivalent to 54 full working days)*** to dangerous heat stress.
- **The Wet-Bulb Peril -** Under high-emission trajectories, major portions of the economically vital ***Ganga and Indus river basins*** are projected to experience wet-bulb temperatures.
- It approaches or breach safe biological thresholds for human survival during outdoor physical activity.

Sector	Quantifiable Damage Matrix & Triggers
Livestock	• Cattle, goats, and sheep experience heat stress above 25°C; pigs and poultry above 24°C. • Every 1°C rise past 30°C causes a 3% to 5% drop in feed intake, severely degrading milk/egg output and immunity. • Under a high-emission scenario, global cattle industry losses could reach $40 billion annually by 2100 (reducible by two-thirds under low-emission compliance).
Fisheries	• Intense Marine Heatwaves (MHWs) are causing mass mortality of coastal marine life. • Forcing the geographic migration of commercial fish stocks toward cooler polar waters, undercutting small-scale coastal livelihoods.
Forests & Orchards	• Spurring fruit drop and lower production in commercial orchards • Drastically increasing fuel-load aridity, causing mega-wildfires that decimate carbon sinks.

Reference

Down to Earth | FAO-WMO report

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