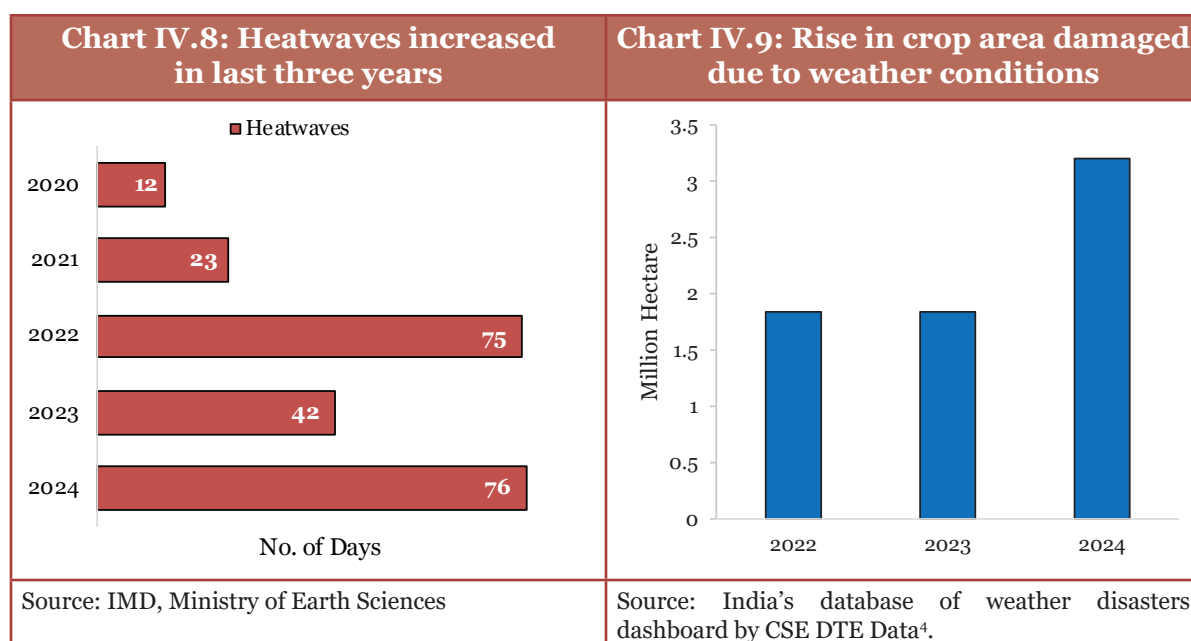


Extreme weather conditions impact vegetable production and prices

4.11 Vegetables are more susceptible to uneven weather compared to food grains, as highlighted by various studies. Extreme weather events such as cyclones, heavy rains, floods, thunderstorms, hailstorms, and droughts impact vegetable prices. Further, evidence indicates that inflationary pressure in horticultural commodities in 2023-24 was driven by unseasonal rainfall during the pre-monsoon season, which damaged crops in major horticulture-producing states³. The coexistence of good areas sown coupled with greater price volatility suggests that extreme weather events significantly impact production and supply chains, thereby affecting retail prices.

4.12. The data accessed from the India Meteorological Department (IMD), Ministry of Earth Sciences indicates a notable increase in the frequency of extreme weather conditions, particularly heatwaves. On an average, during 2022-2024, India experienced heatwaves on 18 per cent of days compared to 5 per cent of days in 2020 and 2021.



4.13. Data published by the Centre for Science and Environment (CSE) and Down to Earth (DTE)^{5,6} finds that the total crop area damaged in 2024 was higher compared to the last two years due to extreme weather events.

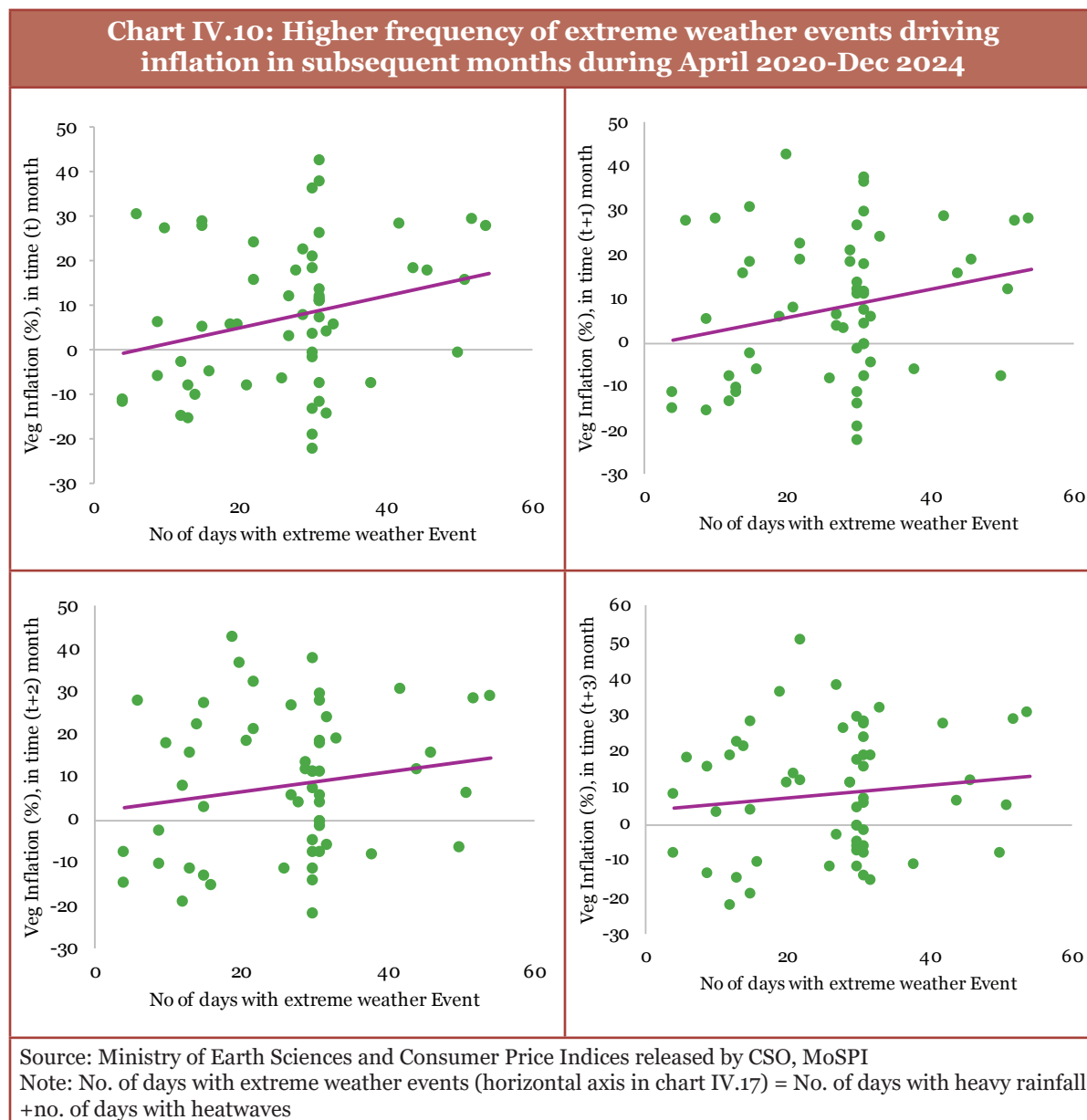
³ Raya, D., & Roy, R. (2023). Unseasonal Rainfall and Price Rise in Horticulture Crops. *Climate-roofing Agriculture. Agri-Food Trends and Analytics Bulletin Vol 3. Issue-1*. (<https://tinyurl.com/yyr8fzek>)

⁴ Data sourced from the Disaster Management Division Union Ministry of Home Affairs, India Meteorological Department and media reports

⁵ Centre for Science and Environment and Down to Earth. (2024). *Climate India 2024: An assessment of extreme weather events*. November. <https://tinyurl.com/2r5r85dw>.

⁶ CSE/DTE tracks each day's report from the IMD website and maps out the events by state and Union Territory (UT) and event type.

4.14. The increasing frequency of extreme weather events—specifically uneven and unseasonal rainfall and heat waves - impacts vegetable production, thereby increasing prices. These adverse weather conditions also present significant challenges to storage and transportation, resulting in temporary disruptions to the supply chain and causing an increase in vegetable prices. This phenomenon is also corroborated by a positive correlation between the frequency of extreme weather events occurring within a given month and the vegetable inflation rates observed in the subsequent months, with notable effects evident for up to three months following such events.



4.15. Furthermore, the fall in onion and tomato production in the last two years can be partially explained by higher extreme weather events in major producing states compared to other regions.