IARI’s InfoCrop

February 17, 2023

In news– The ICAR-Indian Agricultural Research Institute(IARI) scientists used InfoCrop version 2.1 to study the long-term impact of climate change and crop management practices on yield.

About InfoCrop-

- It is **India’s only dynamic crop simulation model developed and released by the institute in 2015.**
- I**nfoCrop is more suited for India as it has the life cycle data for almost all the local varieties of 11 crops:** paddy, wheat, maize, sorghum, pearl millet, pigeon pea, chickpea, soybean, groundnut, potato and cotton.
- In InfoCrop, the parameters are already calibrated to Indian crop varieties and they are updated at regular intervals by the institute.
- The parameters deal with aspects of weather (precipitation, temperature, radiation and others), crop growth (phenology, grain characteristics, leaf growth, temperature and flooding sensitivity and others), soil (texture and organic carbon, water holding characteristics and pH levels) and pests and crop management (organic matter, fertiliser and irrigation).
- Besides forecasting, simulation models can be used to assess crop loss in the aftermath of an extreme weather event, which can then be used to provide relief packages.
- Since the model can be used to simulate management scenarios, it can help improve crop yield.
- **The model has an 85 per cent accuracy rate**, which is on par with widely used dynamic models such as the Decision Support System for Agrotechnology Transfer model, developed by the US, and Agriculture Production Systems

sIMulator, developed by Australia.

- The Union Ministry of Environment, Forest and Climate Change included the model’s projections for 1976-2100 in the first two national communications, reports submitted to the UN Framework Convention on Climate Change detailing the level of vulnerability and risks the country faces due to the impacts of climate change.
- But the March experiment shows that the model can also be used for near-term forecasts.
- **IARI launched its first simulation model, Wheat Growth Simulator, in the 1990s. It could predict the yield of two wheat crop varieties. In 2004, InfoCrop version 1 was launched.**
- The model had to be updated because it did not include crucial parameters such as CO2 levels.