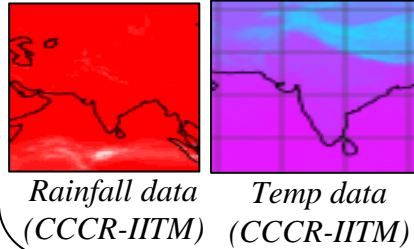


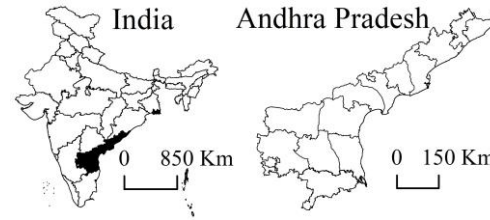
- Groundwater (GW) accounts for 40% of global irrigation.
- Climate change further aggravating **pressure** on GW
- Food-Energy-Water security under **threat** → requires **synergistic** solutions

Datasets

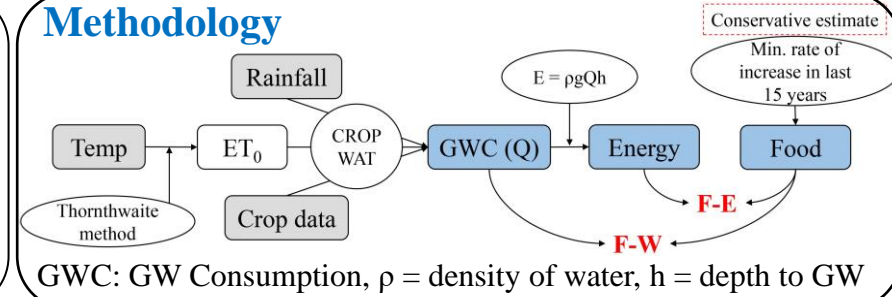


Agriculture data:
Crop type, acreage, sowing date, irrigation source

Study area:

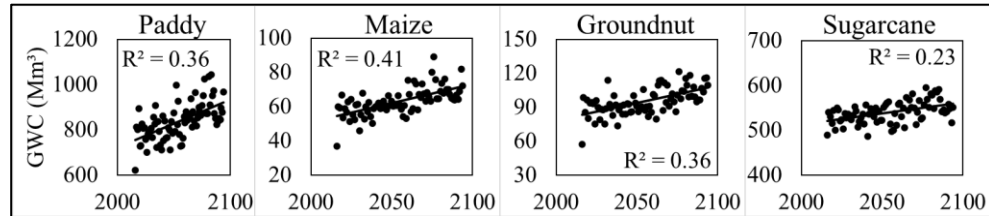


Methodology

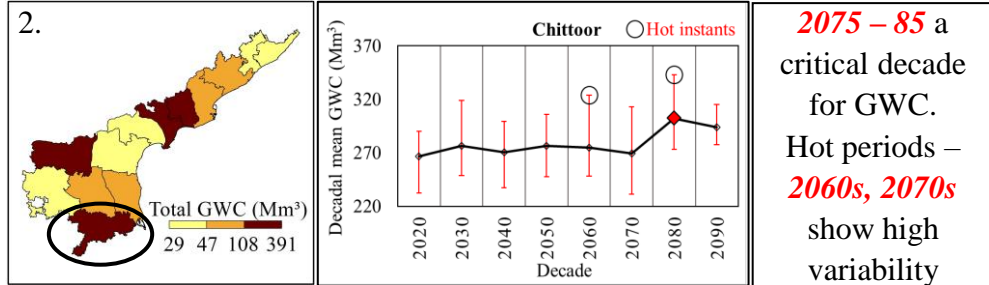


Results

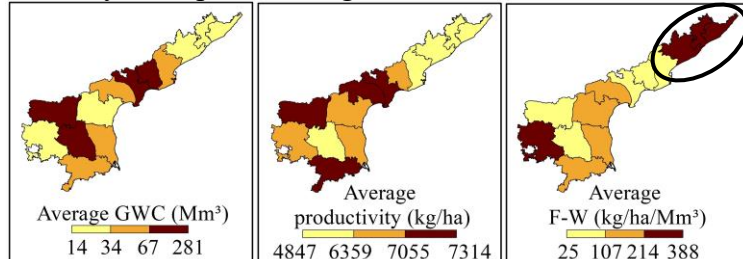
1. Climate change likely to cause increase in state's total GWC for all crops



2.

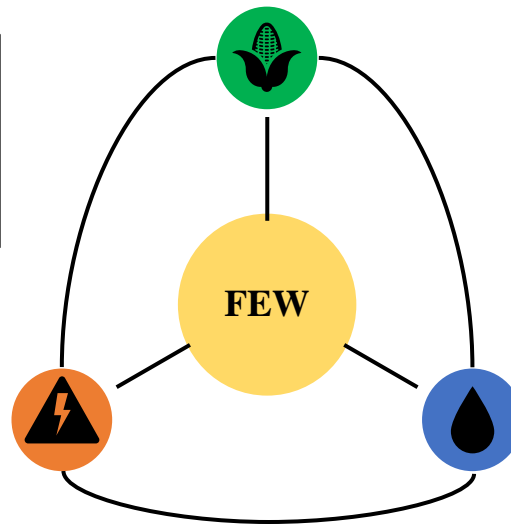


3. Paddy's temporal average GWC, Food, and F-W

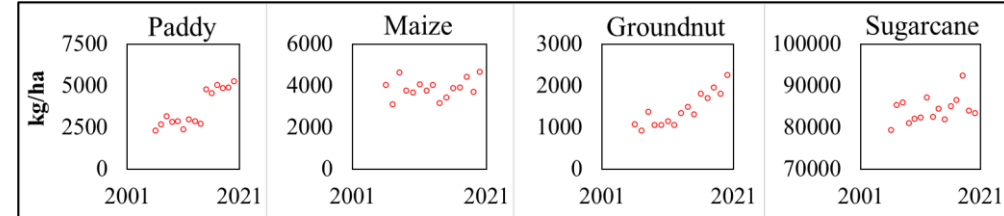


Discussion

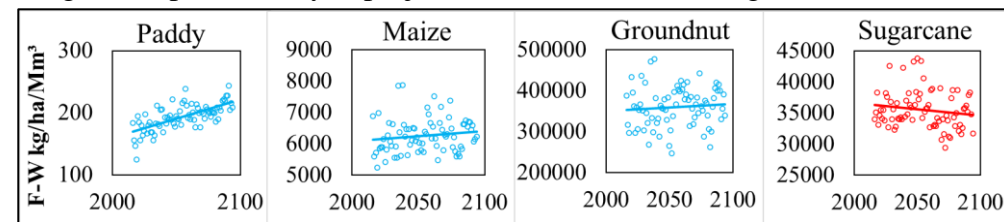
1. GW consumption in southern parts is relatively higher
2. Food productivity is higher in these regions, but low F-W interaction is projected → adverse environmental consequences
3. Energy requirements for pumping also increase → higher economic burden and more green-house gas emissions



4. Food productivity – projected into future using existing data



5. An increasing trend of F-W ((kg/ha)/Mm³) is predicted for most crops. Sugarcane productivity is projected a **decline** – needs regulation.



Conclusions and future scope

- Significant **upward trend** in future GWC was predicted for every crop and in each district
- Worst-hit F-W hotspots are in **Southern regions**
- **Process-based GW models** can further improve predictions