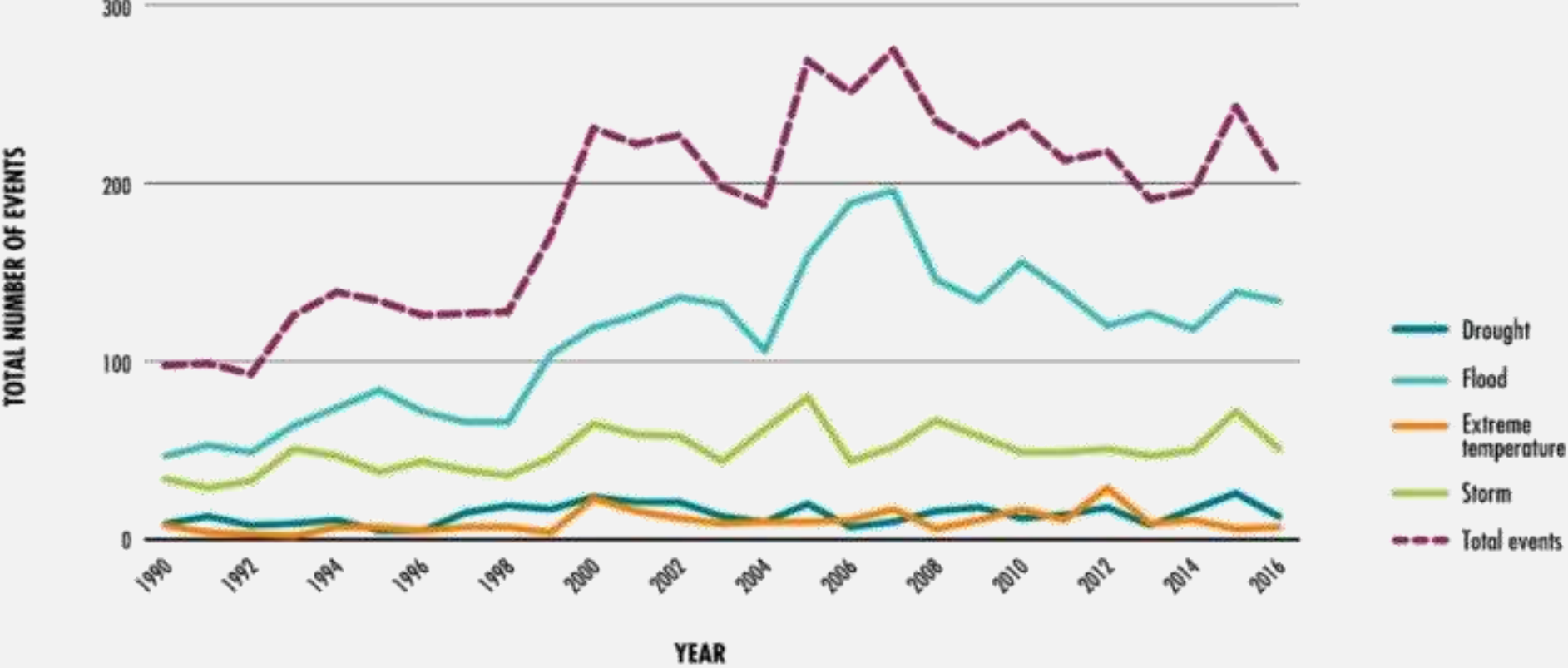




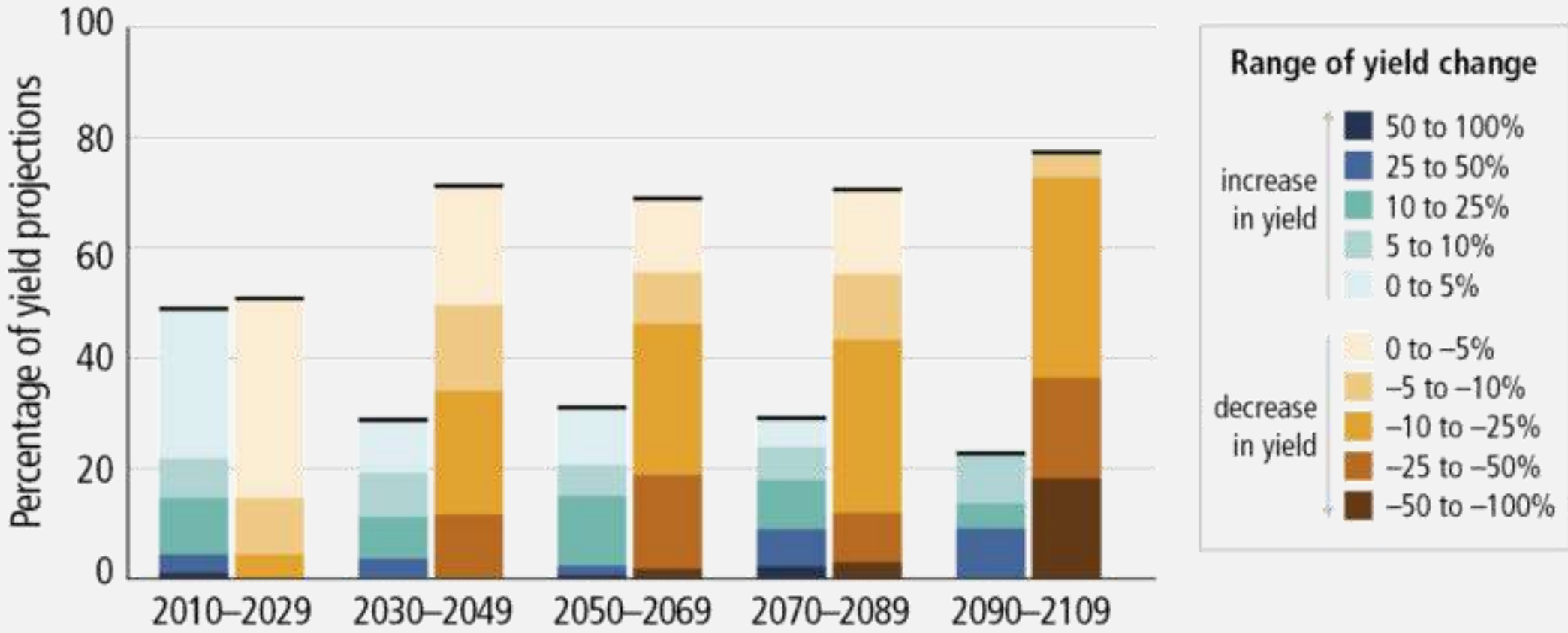
Water Security for Agriculture and Rural Development



CLIMATE CHANGE & AGRICULTURE



CLIMATE CHANGE & AGRICULTURE



https://www.stat.berkeley.edu/~aldous/157/Papers/extreme_weather_resilience.pdf

SITUATION IN INDIA

India - Commodity wise impacts

(from modelling)

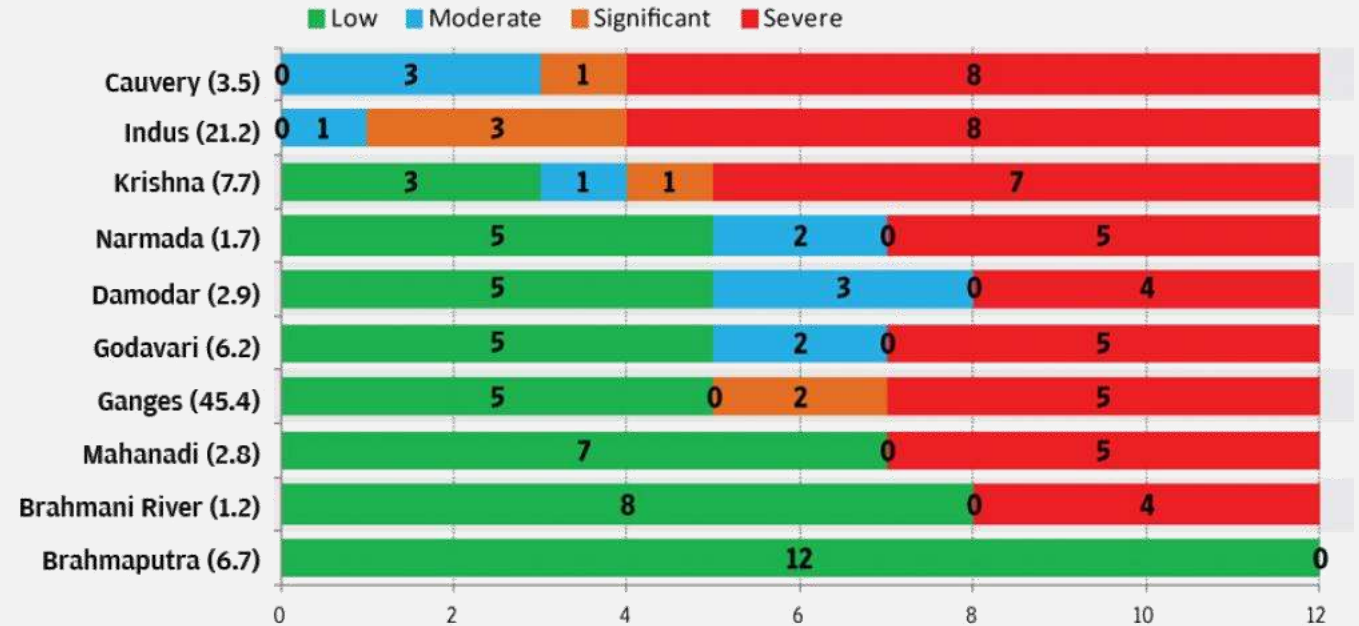
NEGATIVE MIXED POSITIVE



Most of India has severe water scarcity

Bars show the number of months in a year by water scarcity situation in given river basin.

Figures in parentheses with river basin indicate the population in crores. Data refers to 1996-2005



Note: Concept of different water scarcity levels are explained in the story. ¹ Indus river basin includes areas in Pakistan.

Source: Hoekstra, A.Y. and Mekonnen, M.M. (2011) Global water scarcity: monthly blue water footprint compared to blue water availability for the world's major river basins, Value of Water Research Report Series No. 53, UNESCO-IHE, Delft, the Netherlands.

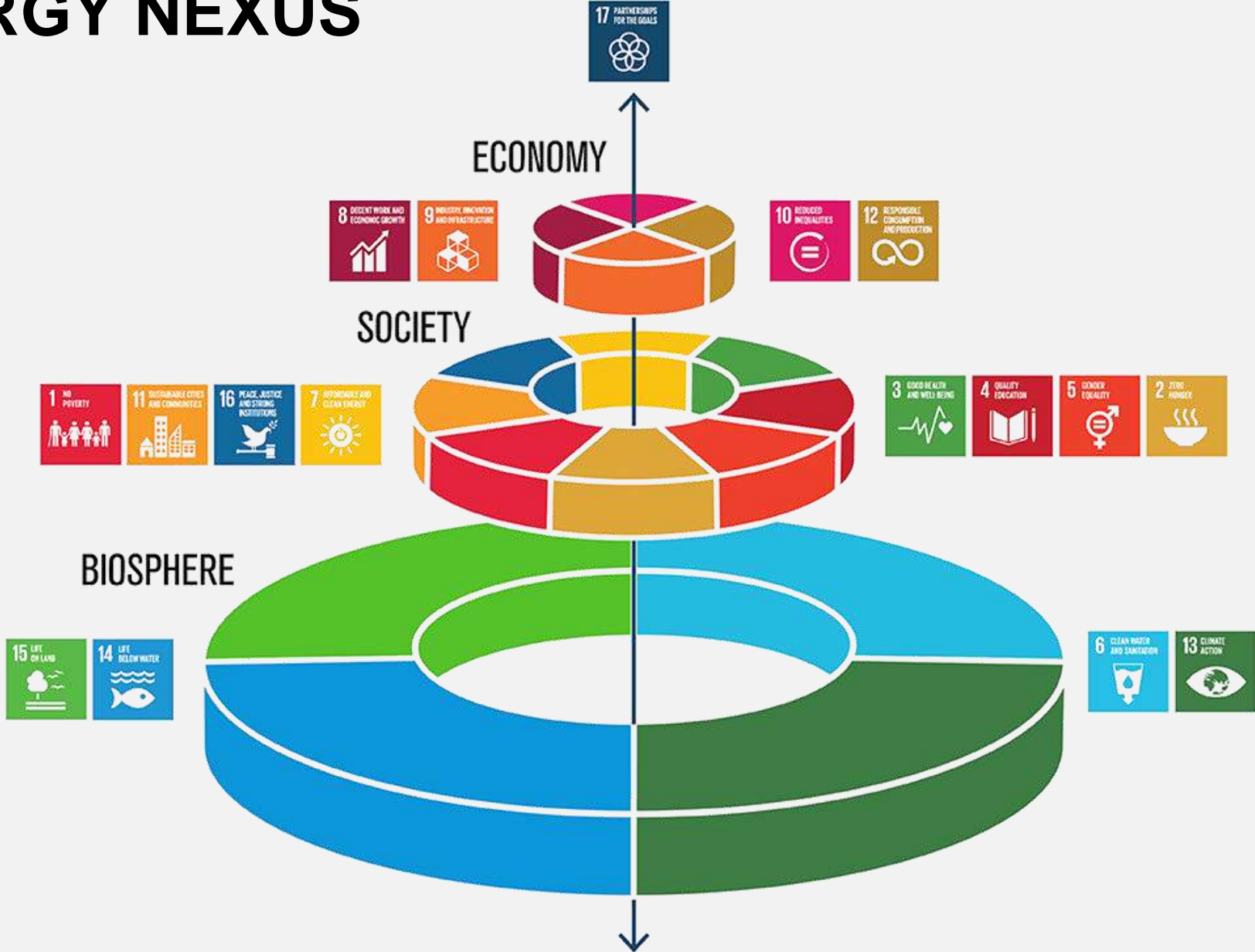
WATER FOOD ENERGY NEXUS

Fulfil water demand

competing water management due to diversified stakeholders of water

Crop risks

The climate change directly impacts risks for crops which needs to be assessed in near realtime



MORE CROP PER DROP



Assessing Crop Risks

Remote sensing based near realtime analysis of crop health and crop water demand



Optimizing Canal's Productivity

Planning & release management with assessment of irrigation in near realtime using remote sensing



River interlinking

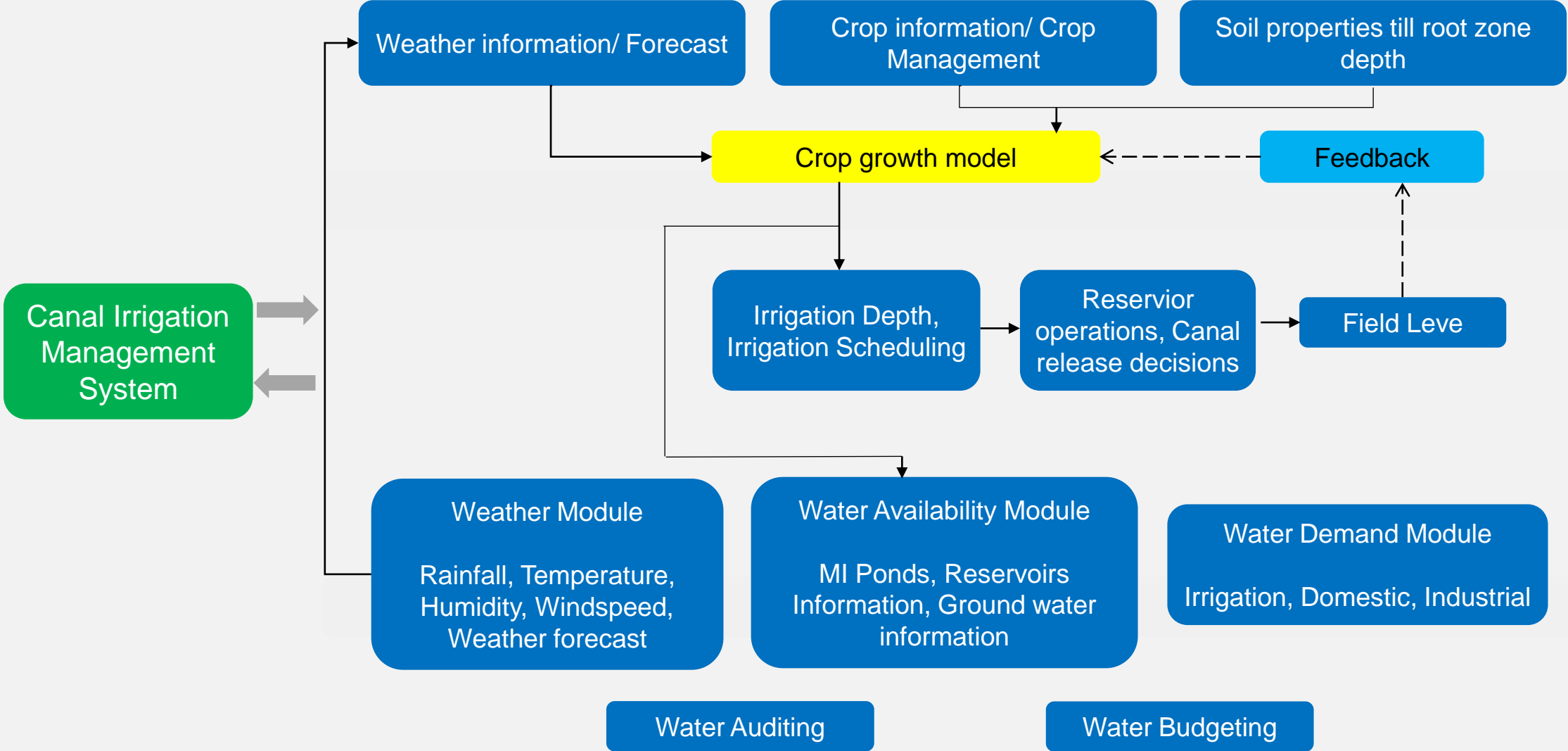
Linking rivers for interbasin transfer and optimizing transfer for power utilization and water efficiency.



Tapping Flood Water

With the help of interbasin transfers, and cascade of tanks, tap the flood water for future utilization

CANAL AGRICULTURE MANAGEMENT



CANAL AGRICULTURE MANAGEMENT

Last Mile Participatory Planning

Capturing demands till canal subminor level in the command area

Warabandi based on crop sown analysis

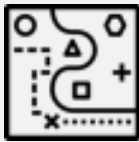
Weekly water release scheduling to ensure equitable distribution of water resources

Reservoir release planning & irrigation assessment

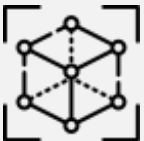
Holistic reservoir planning by considering water demand, weather forecast in catchment and command as well as current water in project



LEVERAGING LIFT SCHEMES



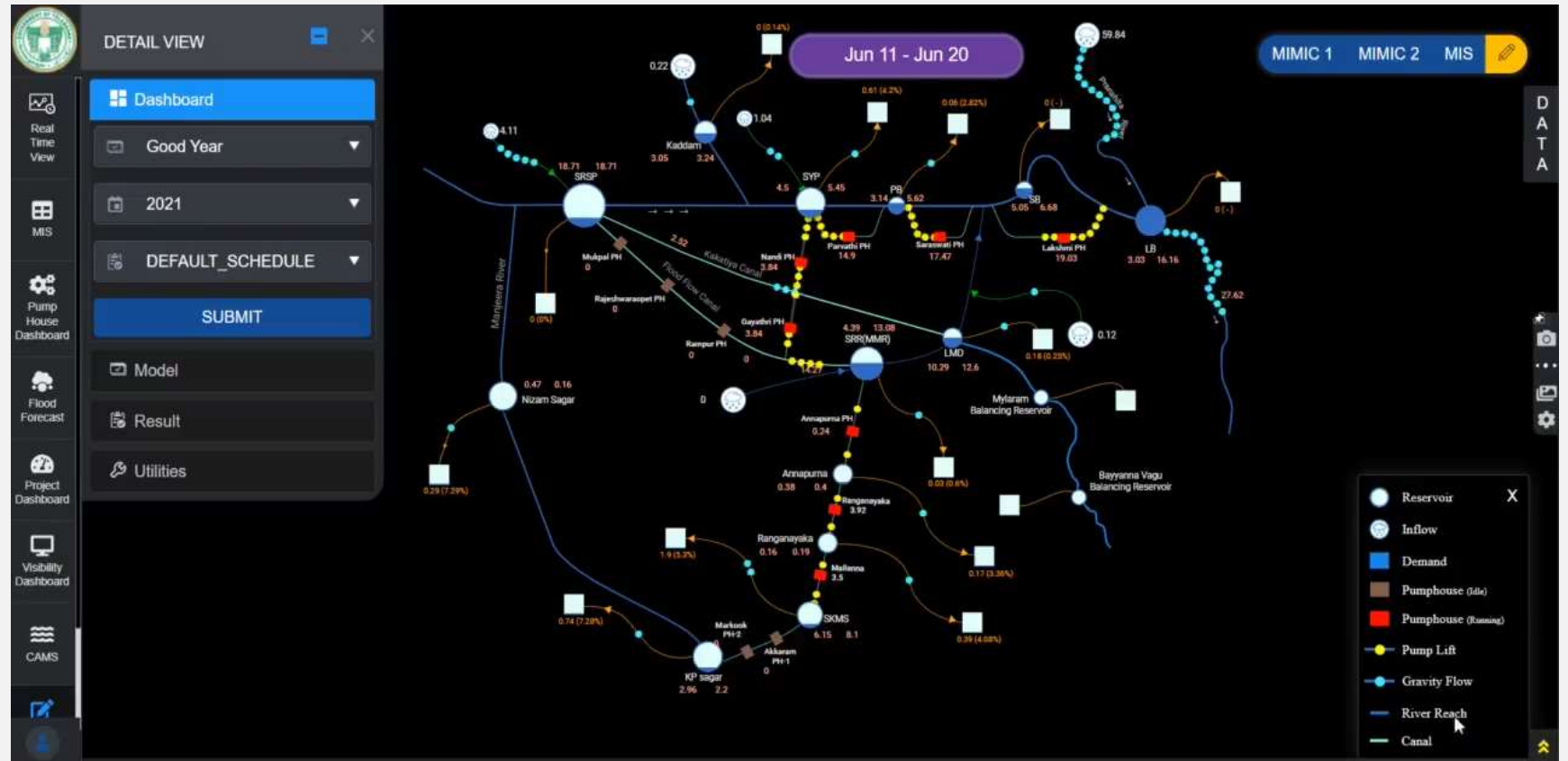
Mitigating water deficit via complex chain of lift schemes



Optimizing pump operations



Decision support & performance monitoring



CROP RISK MONITORING IN NEAR REALTIME: AI ON SATELLITE DATA



Farm boundary detection

AI based farm boundary extraction from satellite data



Near Realtime crop health and stress

Monitoring crop health and stress in near real-time using satellite data and AI

EARLY SEASON DROUGHT

APDIMS

3 Weeks

31-August-2020

SUBMIT

Mandatory Parameters

Impact Parameters

Crop Sown Area

Remote Sensing (VCI)

Soil Moisture (PASM)

Trigger 2 Status

Drought Status

Rajahmundry (urban)

Remote Sensing (VCI)

- Severe
- Moderate
- Normal

District : East Godavari Mandal : Rajahmundry (urban) Drought Status : Normal

S No	Parameter	Value	Status
1	Rainfall Deviation	45.22%	Normal
2	Dry Spell		True
Mandatory Indicator			false
3	VCI	NDVI : 36.42% NDWI : 89.01%	Severe
4	PASM	96.65%	Normal
5	Crop Sown	274.00%	Normal
Impact Parameter Indicator			Normal
Drought Status			Normal

- Area Sown



THANK YOU



info@vassarlabs.com