World-wide Experience of River Basin Planning and its Adoption in Indian Condition

A. K. Gosain

Professor, Civil Engineering Department

Indian Institute of Technology Delhi

Water resource development

- Shall always remain one of the preferred options to cater to
  - Inherent Spatial and Temporal variability of this resource

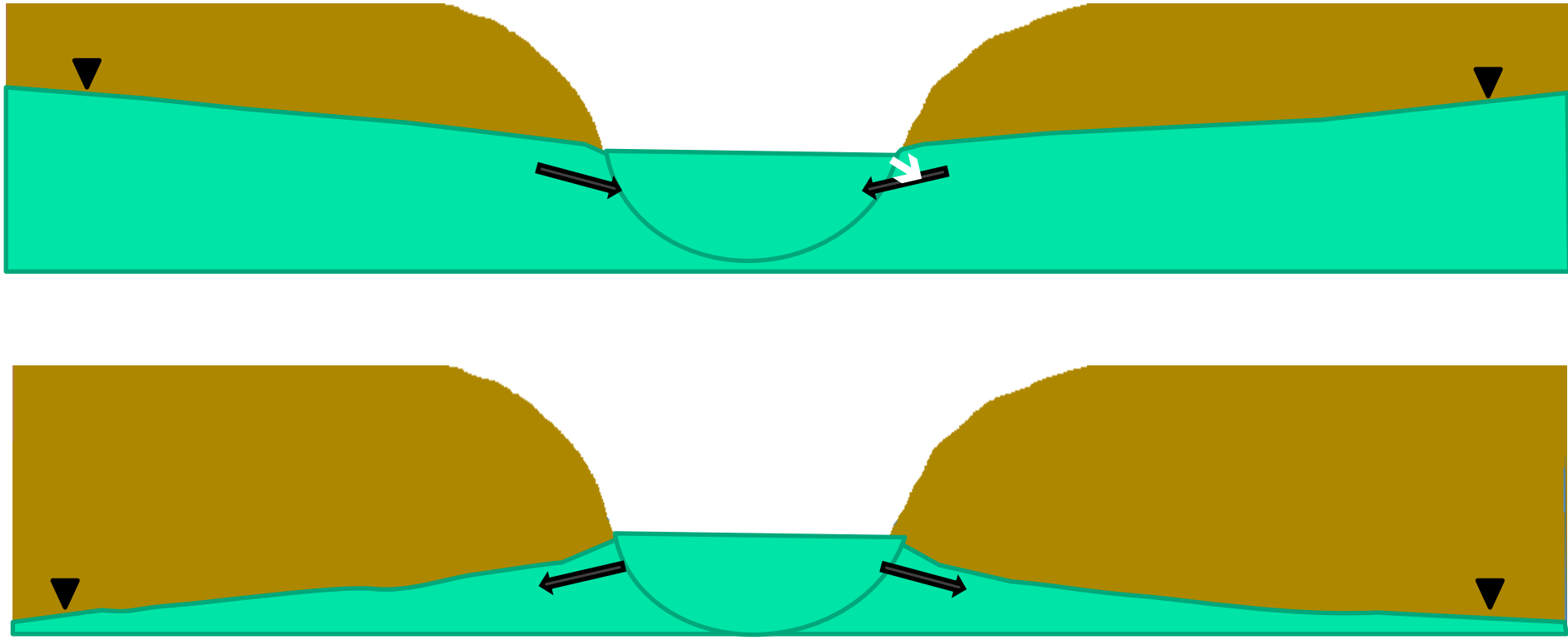
Issues around Development

- How much development?
- Water resource is finite
- Any development big or small results in moving the water around (more often upstream)
- Every development/intervention has associated impact

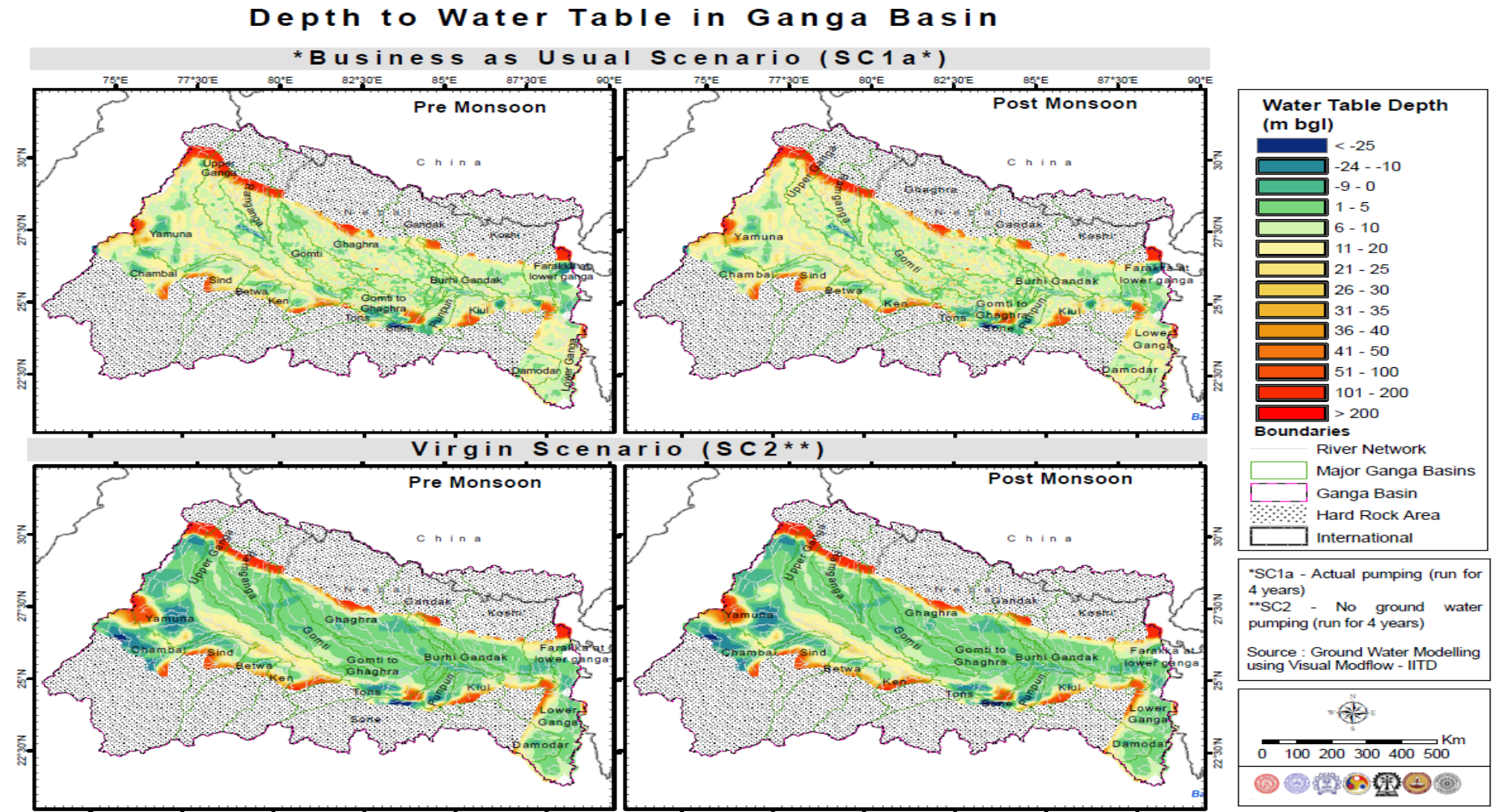
What planning should address

- Hydrological health is preserved
  - Demands do not exceed availability
  - That is why we use basin as a unit
- Environmental health is preserved
  - Environmental demands of the rivers are recognized and provided

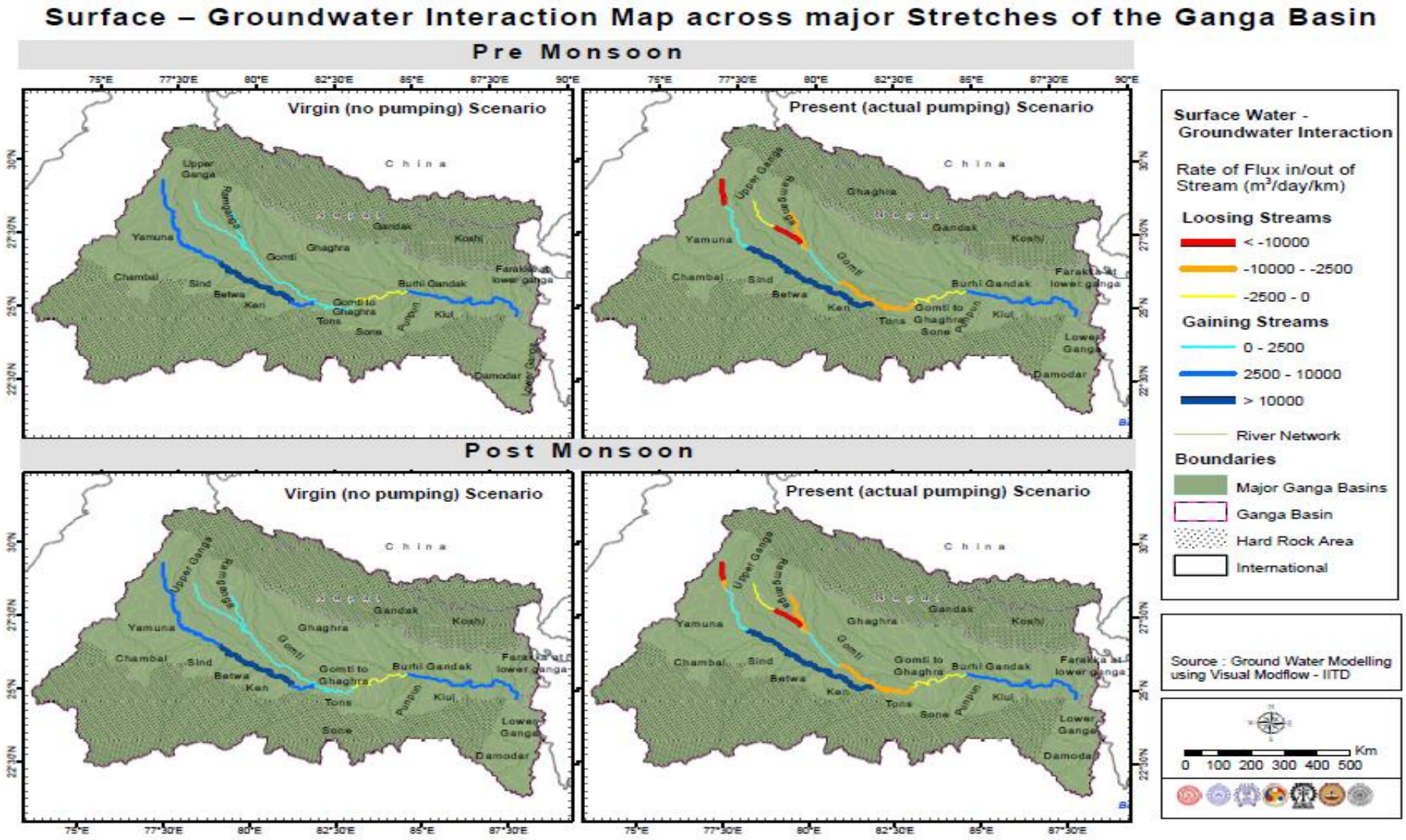
Schematic of Gaining & Loosing river stretches



Water Table Depth for Pre & Post Development - Ganga



Gaining & Loosing Stretches – Ganga Basin



Actions required to be taken

- Develop River Basin Management Plans
  - Addressing Present & future demand
  - Developmental pathways (with Climate Change as well)
- Find alternatives for development
  - That are sustainable
- All this requires a scientific backup

Scientific base is essential

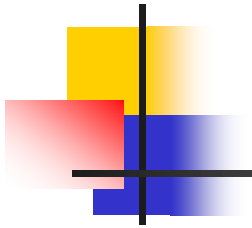
- Model base to be deployed
  - Hydrological, Hydraulic, Groundwater Environment, System model
  - To generate reliable information
- Framework
  - Composed of databases
  - to allow interoperability

Initiative by IIT Delhi

- Taken up 10 basins in collaboration with CWC and eWater
  - To formulate basin plans using IWRM
  - By engaging officials of respective State water resources departments
  - An initiation Workshop was conducted from 28-30 September, 2016

Conclusions

- Basin level plans using IWRM principles are required to be formulated
- Creation of sharable information is essential for sustainable use of water resources through engagement of stakeholders
- Capacity building of all the organizations engaged in the process through engagement of academic/research institutions



Thank you