

Commoning Water: Co-creating Knowledge and Institutions for Conjunctive Use of Water

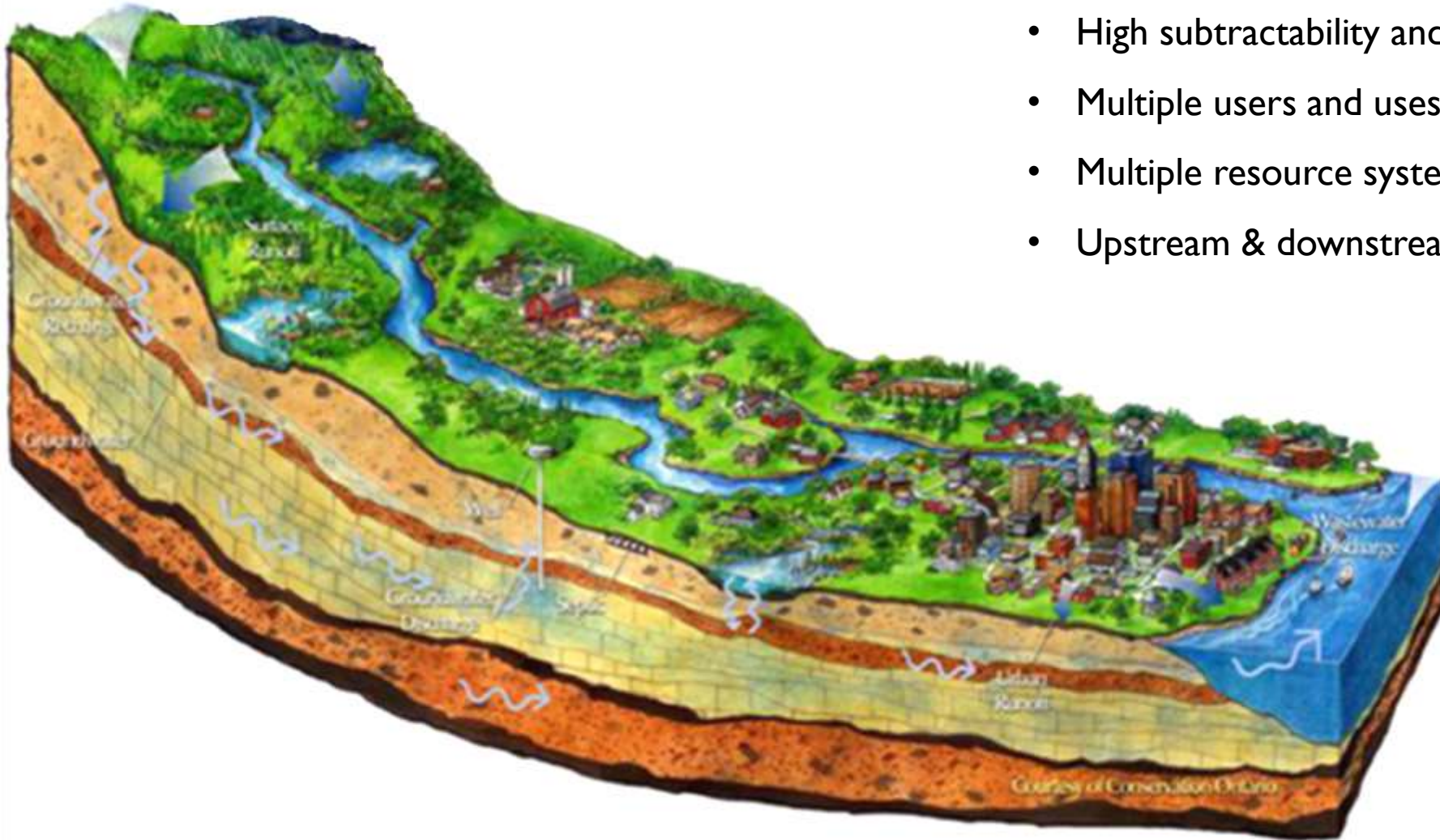
A Case from India

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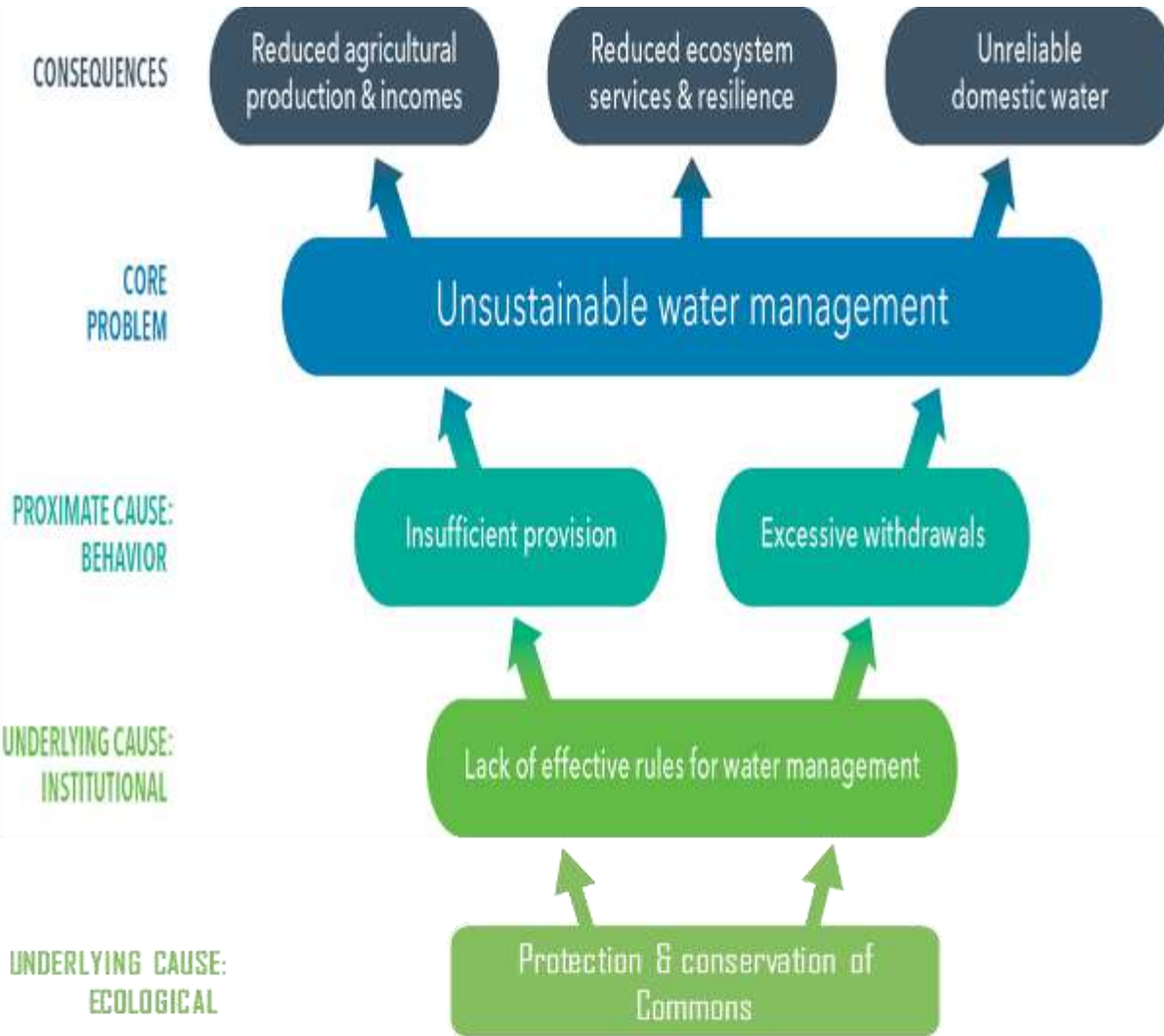


Water as Commons

- High subtractability and low excludability
- Multiple users and uses (*multiple decision makers*)
- Multiple resource systems
- Upstream & downstream interactions

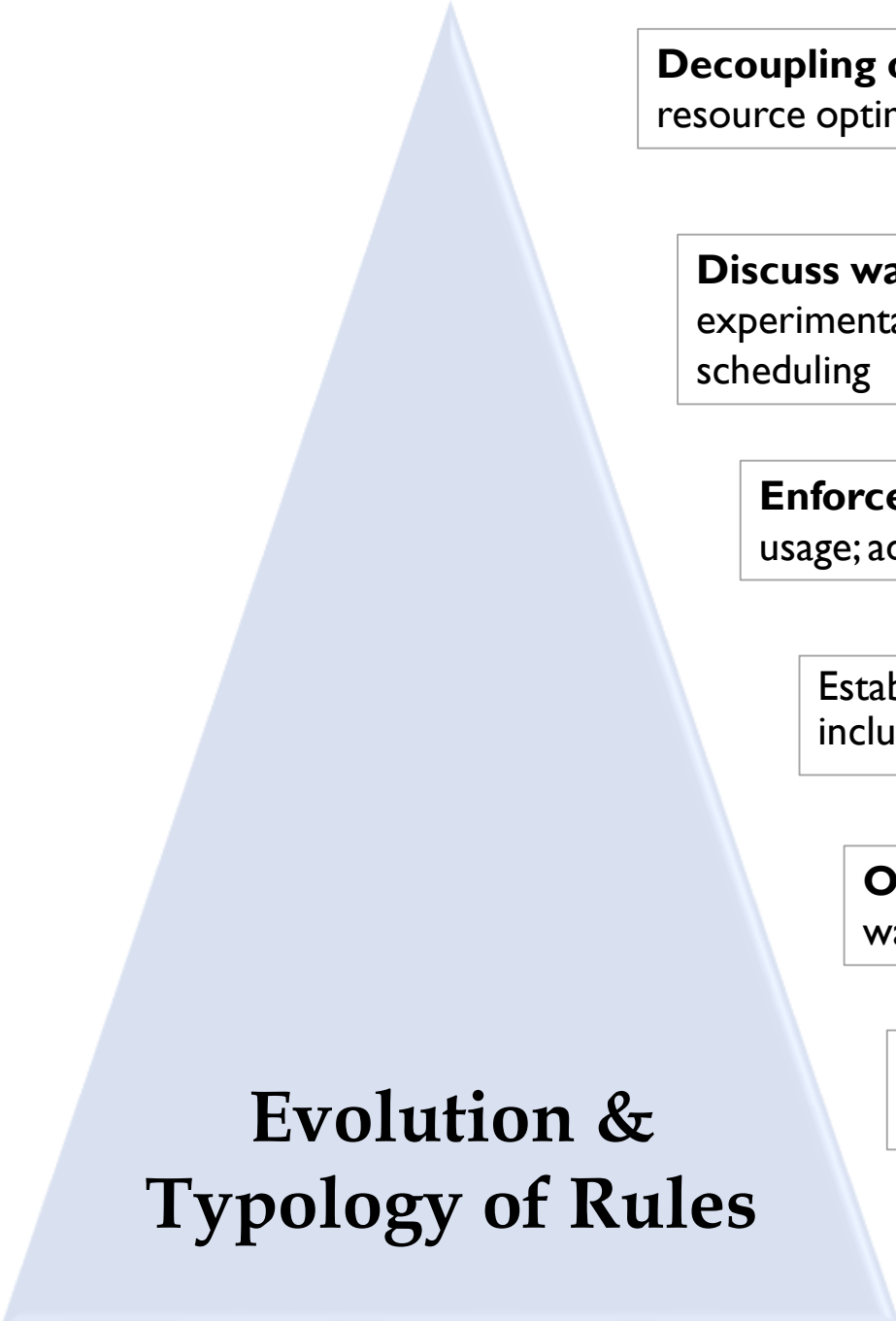


The Challenge



- High investments on improving surface water supply, but many communities fail to sustain the benefits over time.
- Water easily depletes if there is no effective coordination among users to ensure provision and regulate withdrawals.
- Blueprint rules introduced in a top-down manner have not made much impact.
- Research and practice demonstrates that self-governance by communities can be very effective for sustainable management of water and other shared natural resources. But examples of such efforts are limited and diffused.

What are the innovations we want to bring about to improve water management?



Evolution & Typology of Rules

Decoupling of land and water rights and evolve mechanisms for water sharing and resource optimization

**Constitutional
rules**

Discuss water monitoring information, such as estimated supply and demand (as in experimental games, crop-water budgeting), or seasonal assessment of crops and irrigation scheduling

Enforce restriction on water-intensive crops; restrictions on well spacing, depth or usage; adjustment of rules in a very wet year or dry year, etc.

**Collective-
choice rules**

Establish **rules about withdrawal of water**, fish, or other resource units, including irrigation water allocation; crop choice, or irrigation practices

Operate & maintain infrastructure such as operating gates, de-silting, or watershed conservation to increase water storage or groundwater recharge

**Operational
rules**

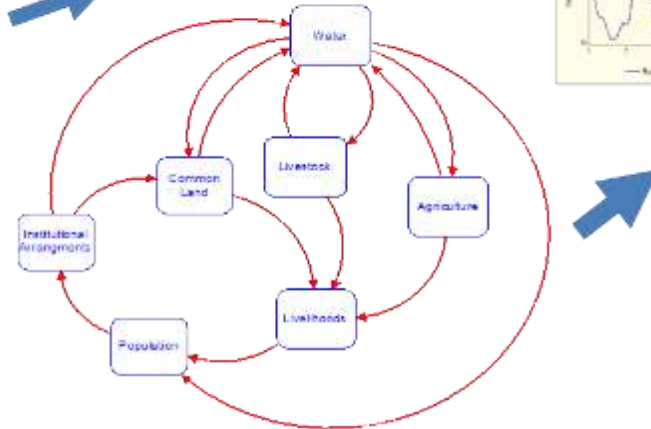
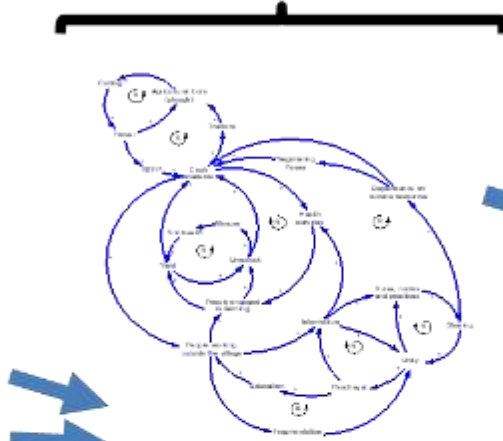
Mobilize household **contributions**, in labor, cash or kind, worth on average least one person-day/hh/yr

Establish rules to **protect from damage** to infrastructure, prohibiting pollution, water quality, restricting entry for non-desirable uses

Mapping socio-economic-ecological interactions influencing livelihoods

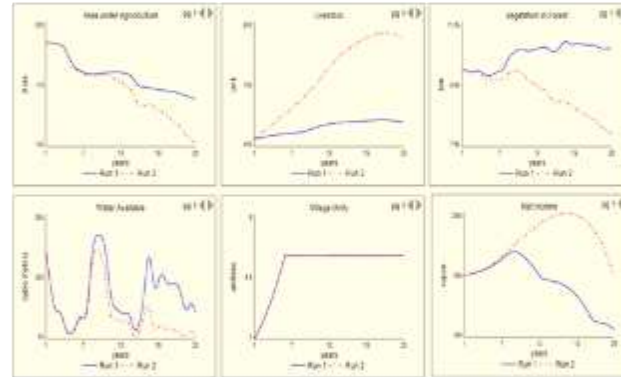


Analysis & Synthesis
CLDs



Simulation Model

Data Collection and Model Calibration - identifying operational pathways



Nurturing Systems Thinking

Community Based System Dynamics

- Helps understand the interconnections between resource systems, and surfacing upstream-downstream issues
- Helps visualize the long term changes and stimulates discussions around thresholds in the system

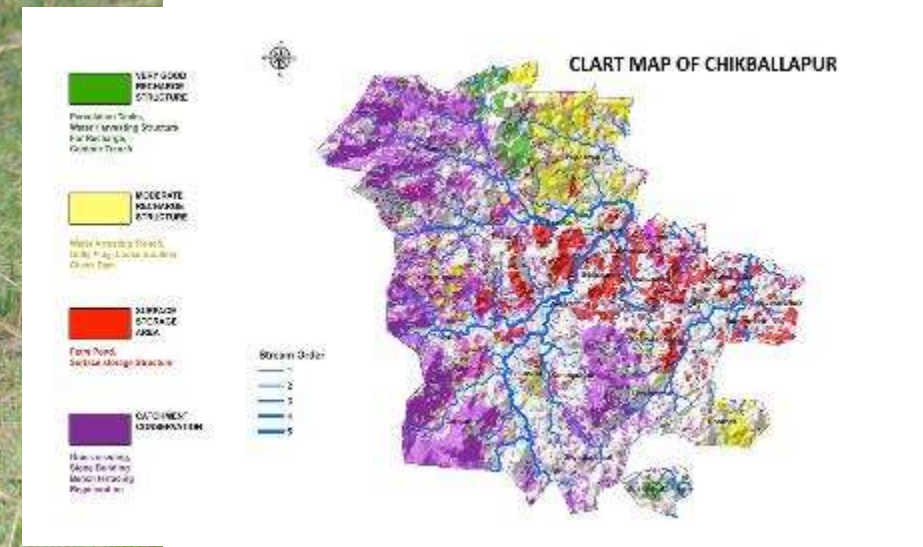


Equipping communities for data-driven decision making



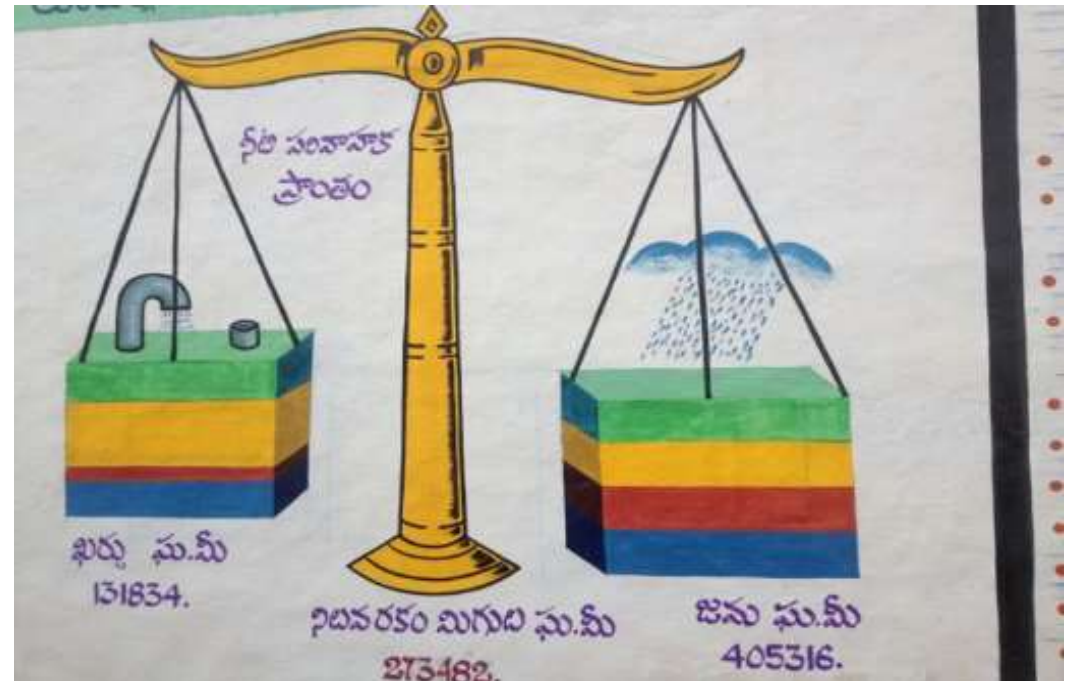
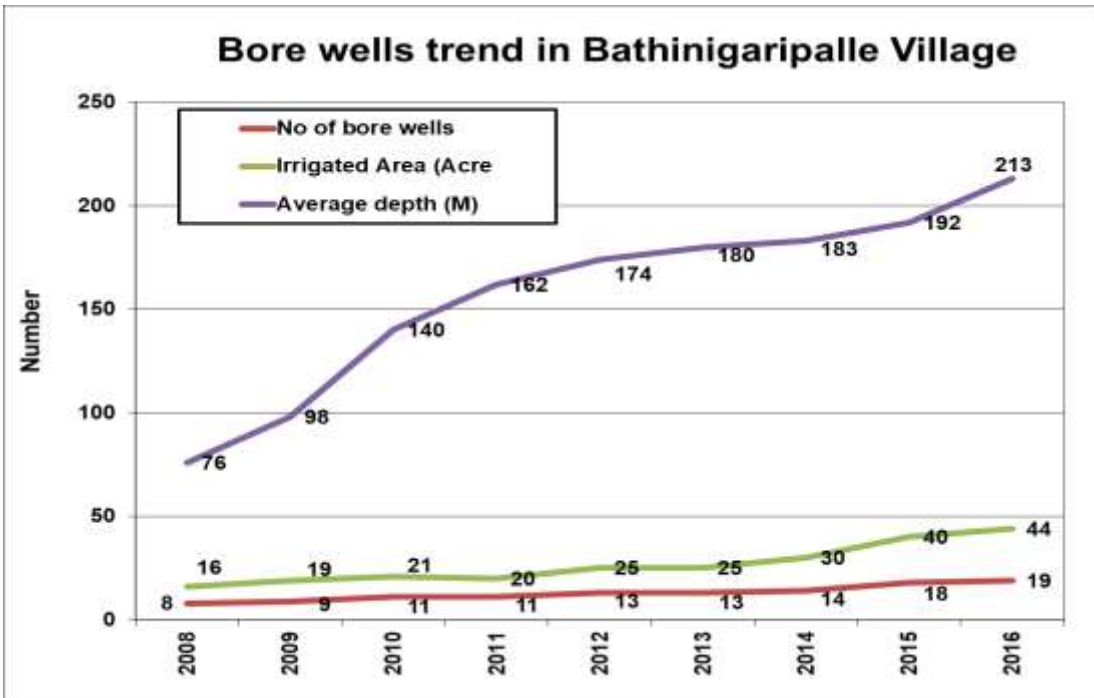
CLART

*An easy colour-coded tech platform to
guide people on adequate means to
store ground and surface water*





Behavior Change through Experimental Games and Crop Water Budgeting





Rajasthan

Semi-arid, Dark Zone, agro-pastoralist communities, mixed farming

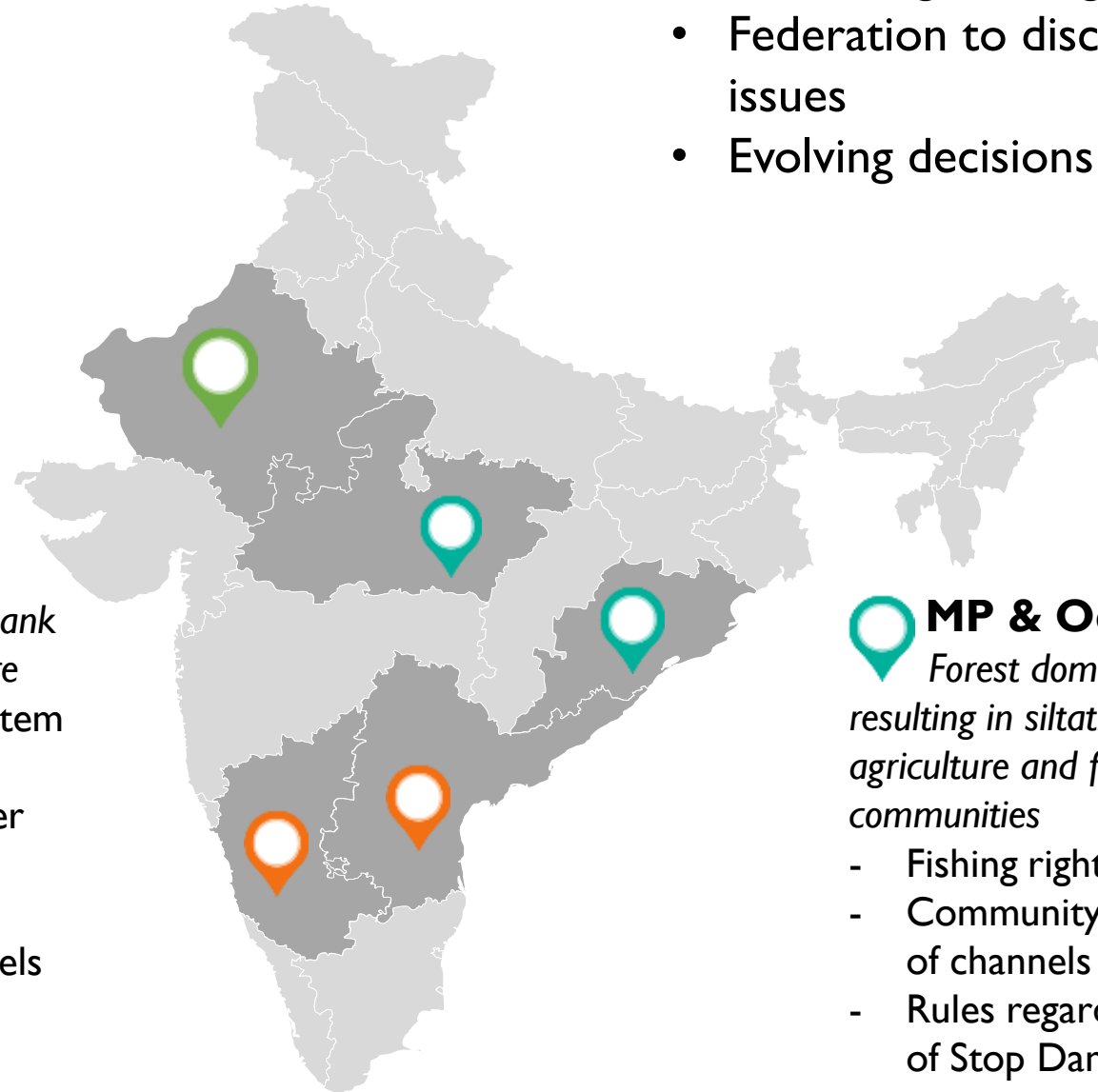
- Reservation of surface water sources for livestock drinking & for groundwater recharge
- Ban on drilling of borewells
- Sharing water from wells
- No use of soap/detergent in water sources reserved for livestock



AP & Karnataka

Drought prone, erosion of traditional tank management systems, intensive agriculture

- Revival of traditional *neeruganti* system of tank management
- No encroachment of tanks & feeder channels
- Focus on groundwater recharge
- Crop decisions based on water levels (*crop holidays during severe drought years*)



- Water sharing
- De-linking land rights and water rights
- Federation to discuss upstream-downstream issues
- Evolving decisions based on water numeracy



MP & Odisha

Forest dominated, degraded uplands resulting in siltation & drying of streams, agriculture and forest dependent tribal communities

- Fishing rights for traditional fisher folks
- Community contribution for de-siltation of channels
- Rules regarding opening/closing of gates of Stop Dams and for water allocation

Thank you