INTERNATIONAL CONFERENCE

GROUNDWATER, KEY TO THE SUSTAINABLE DEVELOPMENT GOALS

PARIS - May 18 -20, 2022

4b

PLURALITY OF POSTURES AND APPROACHES TO SUPPORT CONCERTED LOCAL GOVERNANCE OF GROUNDWATER

18th May 2022, Paris



PLURALITY OF TRAJECTORIES

CONCEPTS, APPROACHES AND STRATEGIES
FROM COMMUNITY MANAGEMENT TO LOCAL GROUNDWATER GOVERNANCE

Himanshu Kulkarni, PhD

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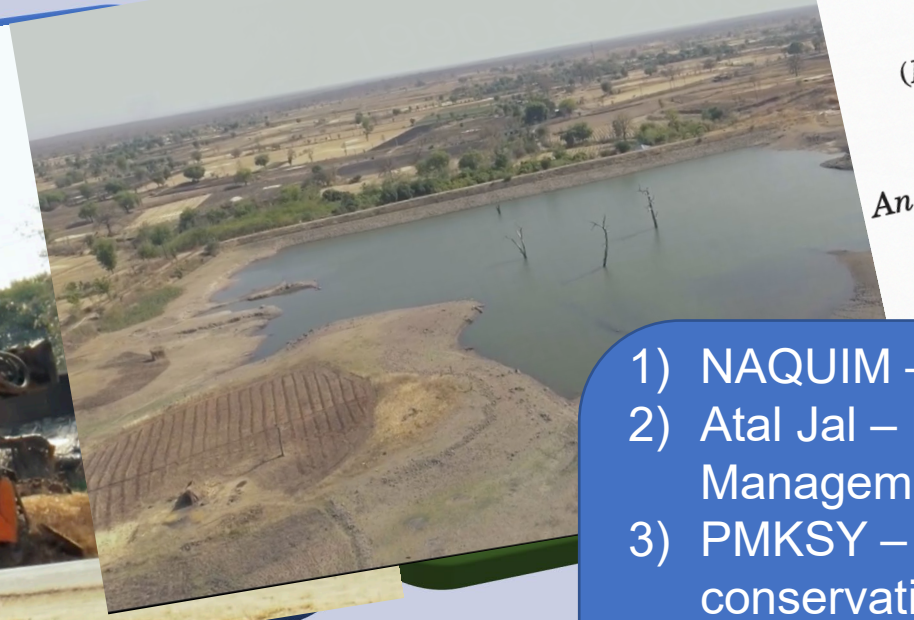
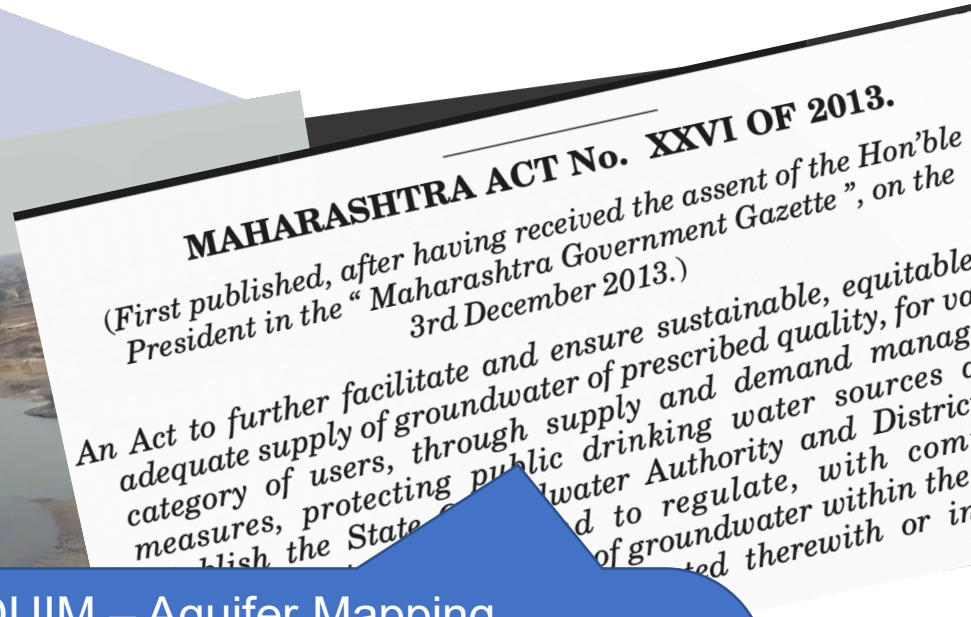
The last few years: a promising shift in perspectives





MAHARASHTRA ACT No. XXVI OF 2013.

(First published, after having received the assent of the Hon'ble President in the " Maharashtra Government Gazette ", on the 3rd December 2013.)

An Act to further facilitate and ensure sustainable, equitable adequate supply of groundwater of prescribed quality, for va category of users, through supply and demand manag measures, protecting public drinking water sources a ablish the State Groundwater Authority and District d to regulate, with com of groundwater within the ted therewith or in

1) NAQUIM – Aquifer Mapping
2) Atal Jal – Participatory Groundwater Management
3) PMKSY – Agriculture, water conservation
4) Natural farming, millets mission
5) JJM – A tap in every house: drinking water
6) Amrit 2.0 – includes Urban Water Security

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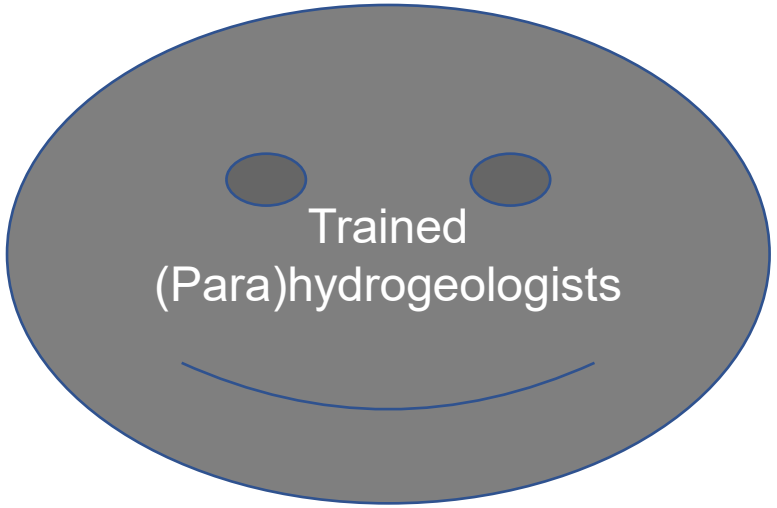
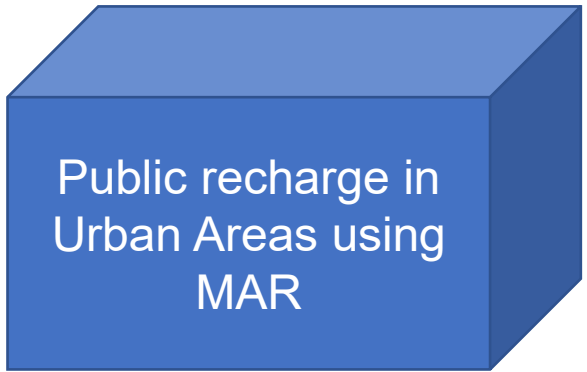
GROUNDWATER

A COMMON POOL RESOURCE

A colourful canvass of approaches and strategies





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A groundwater management protocol: common features

Protocols	*EFFICIENCY*	*EQUITABILITY*	*SUSTAINABILITY*
Systematic water conservation including MAR, based on socio-hydrogeology			
Protection of natural groundwater recharge and discharge zones (Ecosystem connection)			
Efficient well-use coupled with effective groundwater usage			
Energy management including pump capacity regulation			
Protecting drinking water sources through distance regulation (interference between wells) – radial zoning			
Protecting drinking water sources through depth regulation of irrigation sources – vertical zoning			
Crop management – sustainable crop choices through crop-water budgeting			
Comprehensive PGWM (integrating all the above)			

How does each of these address EES?

How are these differently relevant in India's aquifer diversity?

Can such efforts be institutionalised?

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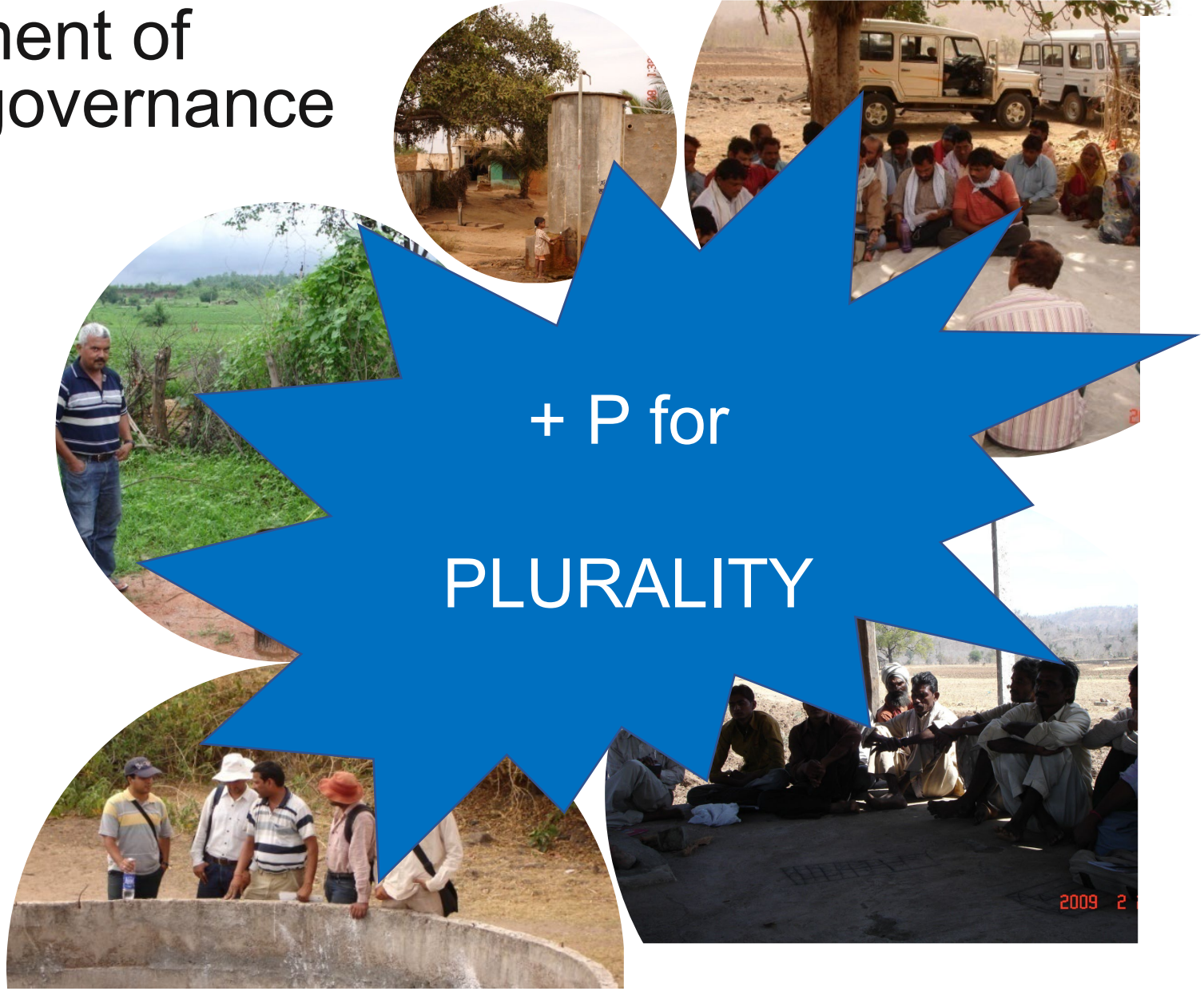
The 5 Ps: micromanagement of aquifers to groundwater governance

- Principles: values and norms around aquifers as CPR
- People: human behaviour, tensions, competition and conflict
- Processes: participative / collaborative data gathering, data-based community decisions
- Practices: community decision-based action
- Policies: securing and sustaining good practices and moving away from command and control



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The last 70 years: a rapid transition

- SOURCES: Increased numbers (about 50 million wells) and deeper wells

- ACCESS: ‘Individualisation’ of community sources through many types of holes in the ground - shallow, intermediate and deep dug wells, bore wells and tube wells

- EXTRACTION: High-end pumps capable of extracting large volumes of water over short periods of time

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s impacts

drying up of

s:
vater quality

e flows leading to
er flows: perennial rivers
asonal

THE NOT SO OBVIOUS ONES…

Iniquities, marginalization, competition and conflict

PLUS

the deterioration of natural resources

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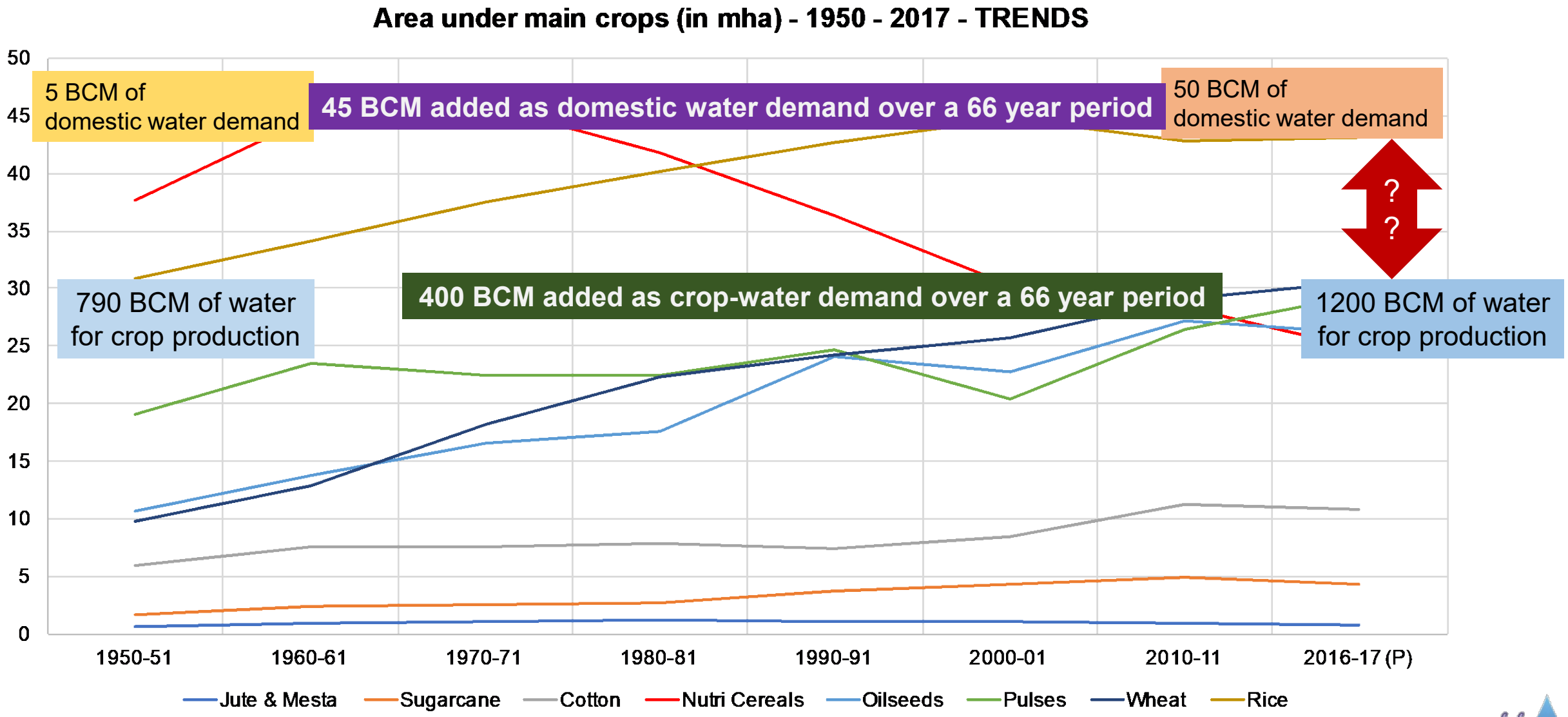
Managing tradeoffs: water - food – nutrition - income



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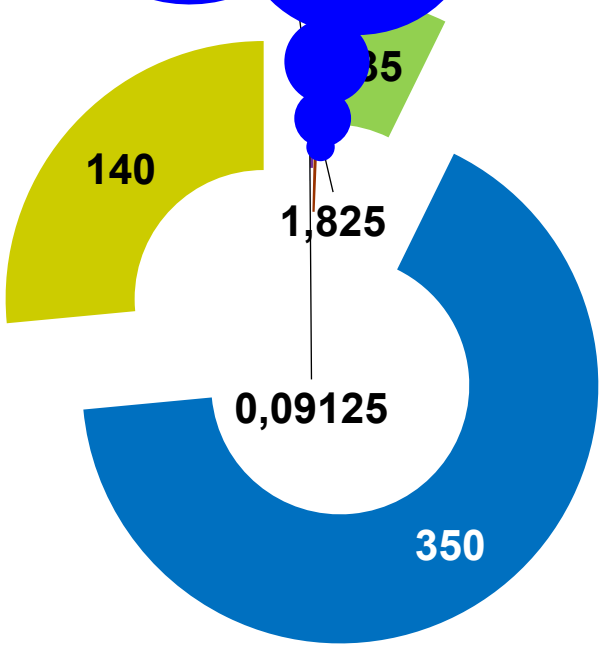
A variety of tradeoffs
…the skewed nature of domestic water demand

Domestic water demand including drinking water and livestock needs is as less as 3.5 mm / year

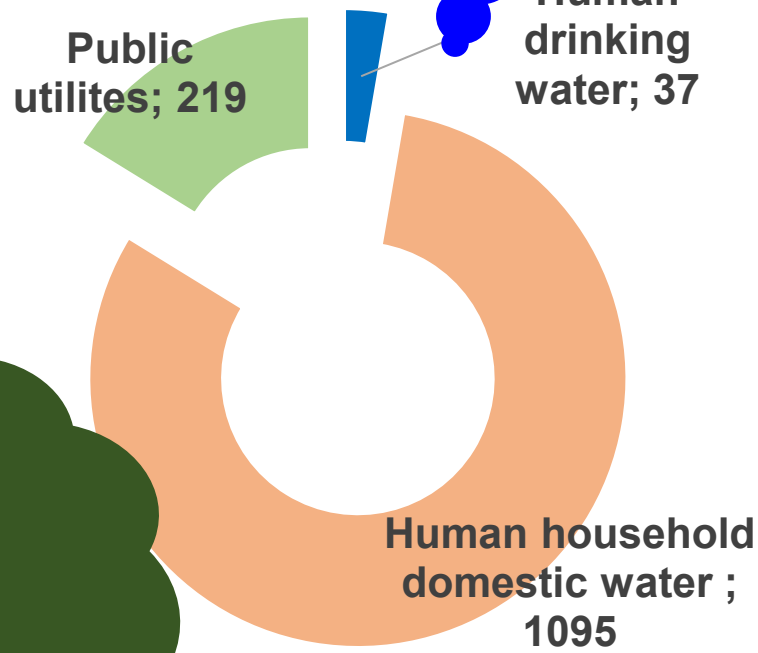


ibution
India

- Human drinking water
- Human household domestic water
- Animals
- Rainfed agric kharif
- Irrigate rabi
- Irrigated summer

Annual (d for a values

Domestic demand including drinking water is as much as 1132 mm / year



A typical shallow basalt aquifer system holds groundwater storage of an equivalent of 20 to 150 mm

urce: ACWADAM, various years

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