3R: Retention, Recharge, Reuse

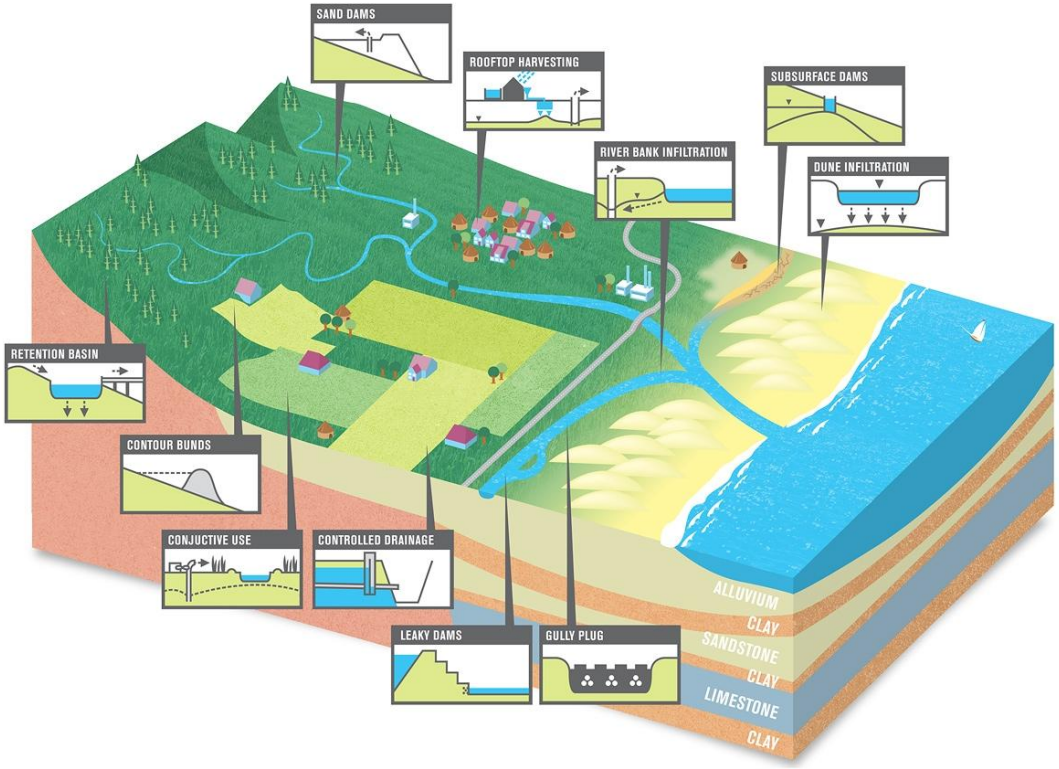
3R consortium

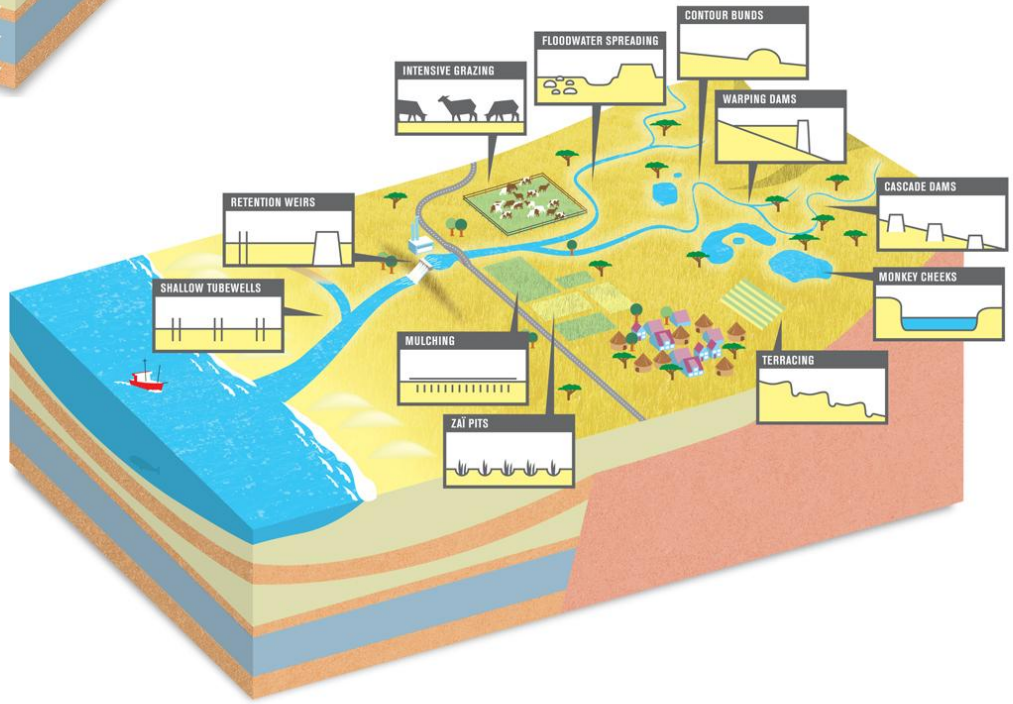
Storage = buffering

- **3R** concept – Recharge, Retention and Reuse
- A different way of thinking
- Local (cisterns) and subsurface storage (active use of aquifer) of surface water for both water- and food security
- Its not about allocation scarce water but to catch and retain water and extend the chain of use and reuse as possible within a basin
- Introduce buffer management at scale – basin by basin. Not piecemeal/scattered
- Subsurface storage largest potential in terms of **m^3**

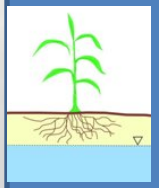
3R
MANAGING THE WATER BUFFER

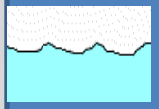
Buffer management at scale





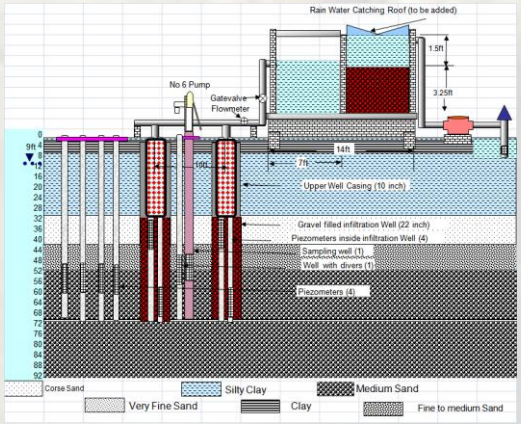
3R techniques



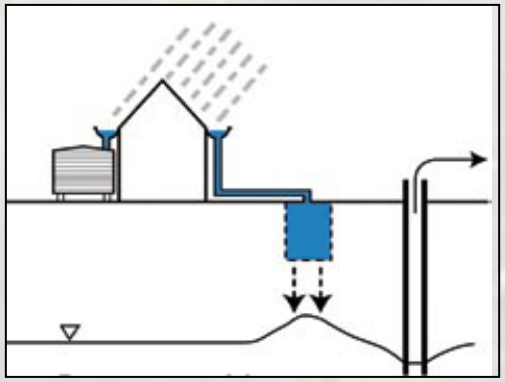


Retention method	Recharge method	Measures
A. Closed tank storage	1. Rainwater interception	Rooftop harvesting
	2. Fog harvesting	Fog shield and tank
B. Groundwater storage	1. Run-off reduction: riverbed infiltration	River bed modification
		Gully plugging
		Sand dams
		Recharge dams
	2. Land surface infiltration	Infiltration ponds
		Spate irrigation
		Ditches and drains/furrows
	3. Direct aquifer infiltration	Wells
		Riverbank infiltration
C. Soil moisture storage	1. Run-off reduction	Terracing
		Contour bunds
	2. Land surface infiltration	Deep ploughing
		Spate irrigation
	3. Evaporation reduction	Mulching
D. Open water storage	1. In the riverbed	Checkdam
	2. Outside the riverbed	Storage pond

Well, shaft and borehole recharge

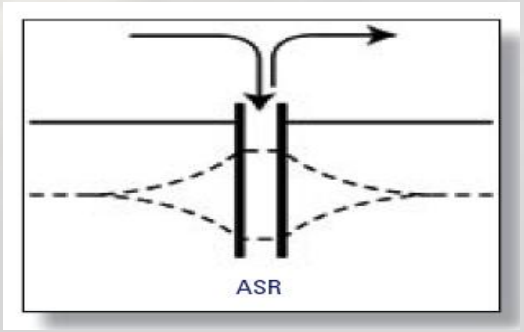


Shallow well injection Bangladesh



Roof top rainfall harvesting and storage

Maharashtra, India



ASR well; Australia

Recharge pit, Rajasthan, India ASR

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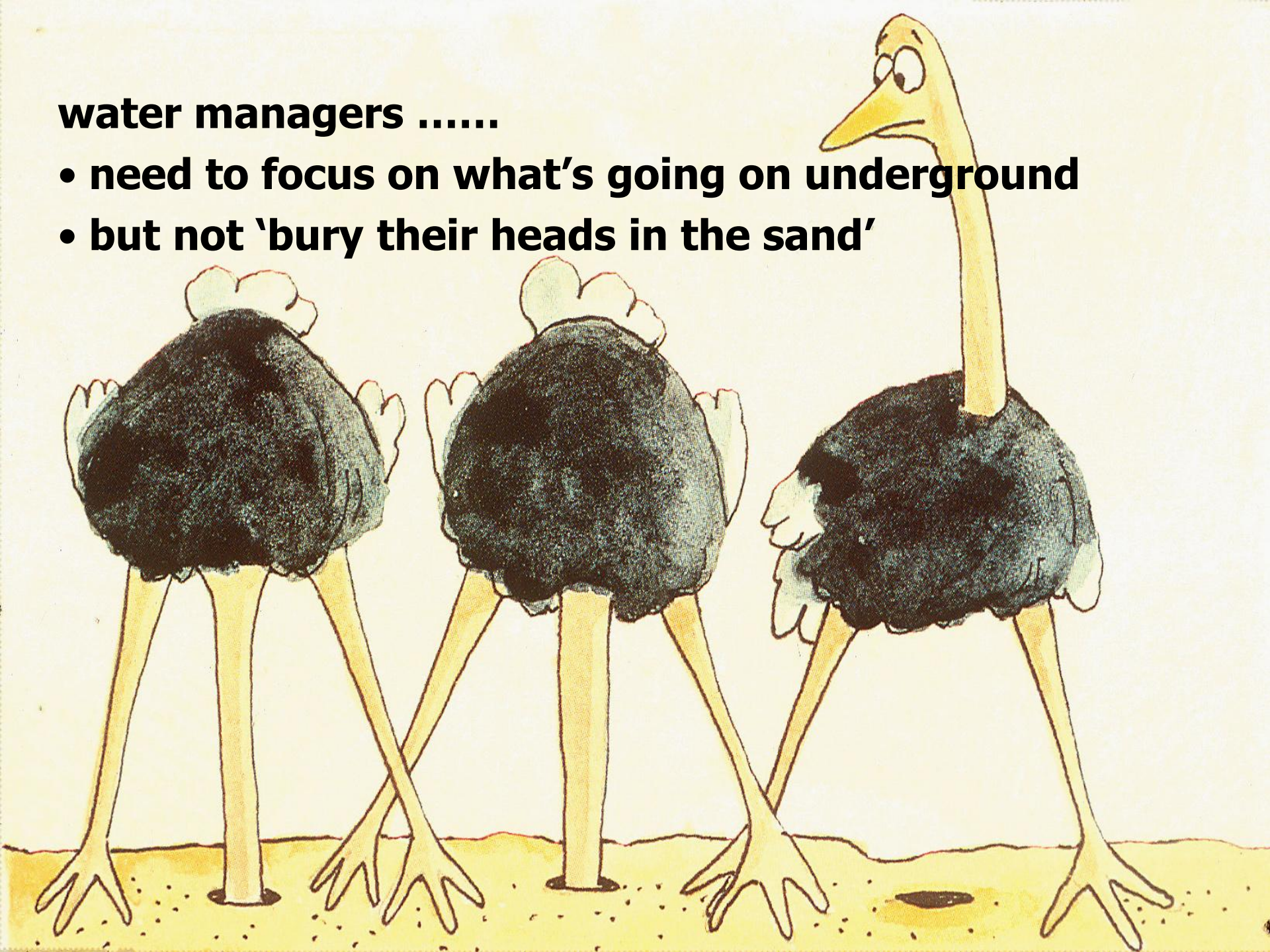
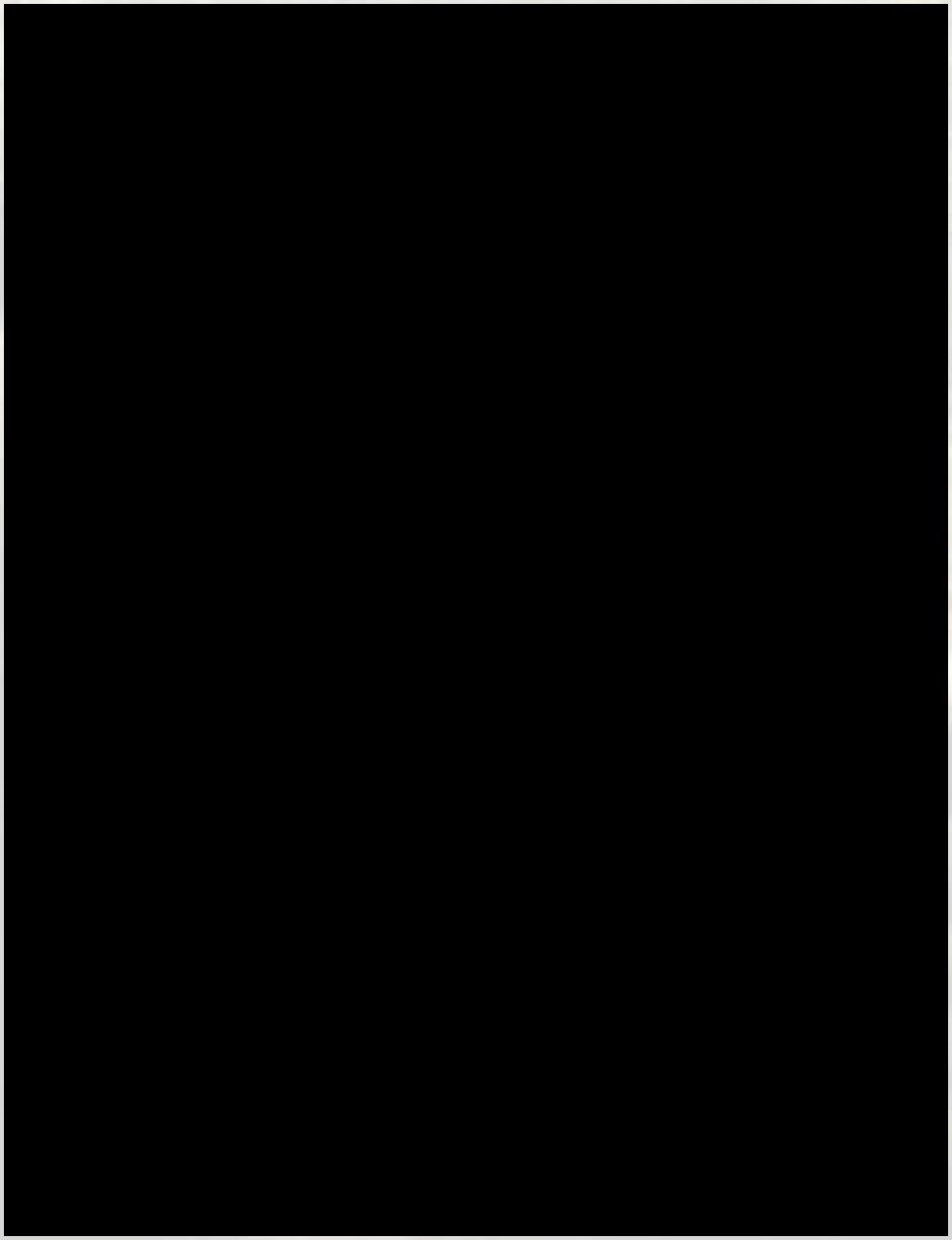
water managers ……

- **need to focus on what's going on underground**
- **but not 'bury their heads in the sand'**





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Conclusions

- Conventional water resources are not always feasible to supply rural communities.
- Water shortages can for a large part be solved by storing excess water during wet seasons and making it available during dry seasons.
- Water storage in the subsurface has many advantages over surface water storage.
- Everybody has the right to a BUFFER

Contact

Join the 3R family for knowledge sharing, partnering and new opportunities!

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you're standing
on a solution
without even
knowing it…
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