

Understanding Water: The Bio-physical and Socio-cultural Dimensions of Water

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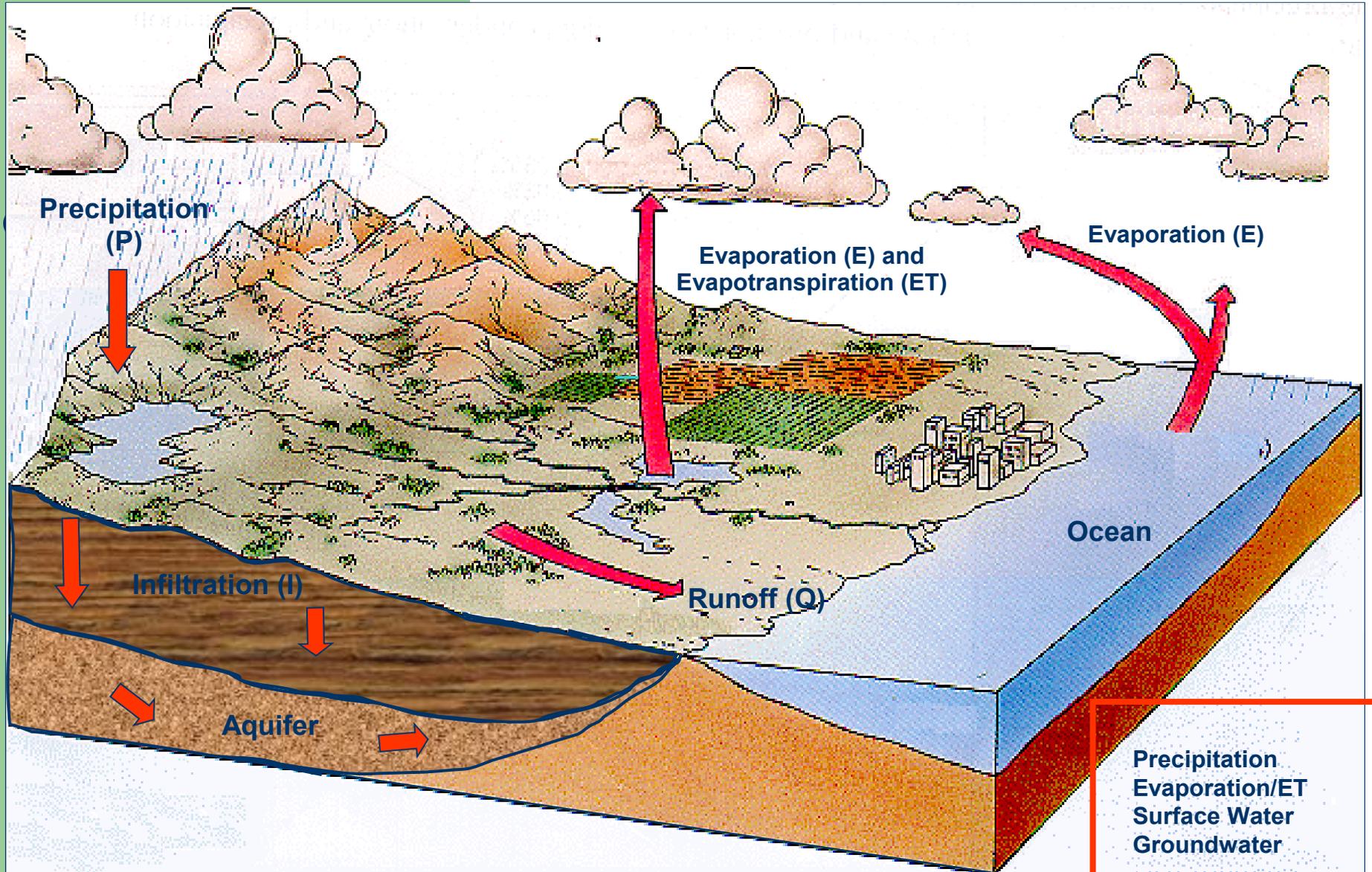
Training Programme on
**Understanding and Resolving Water Conflicts in
the North East India**

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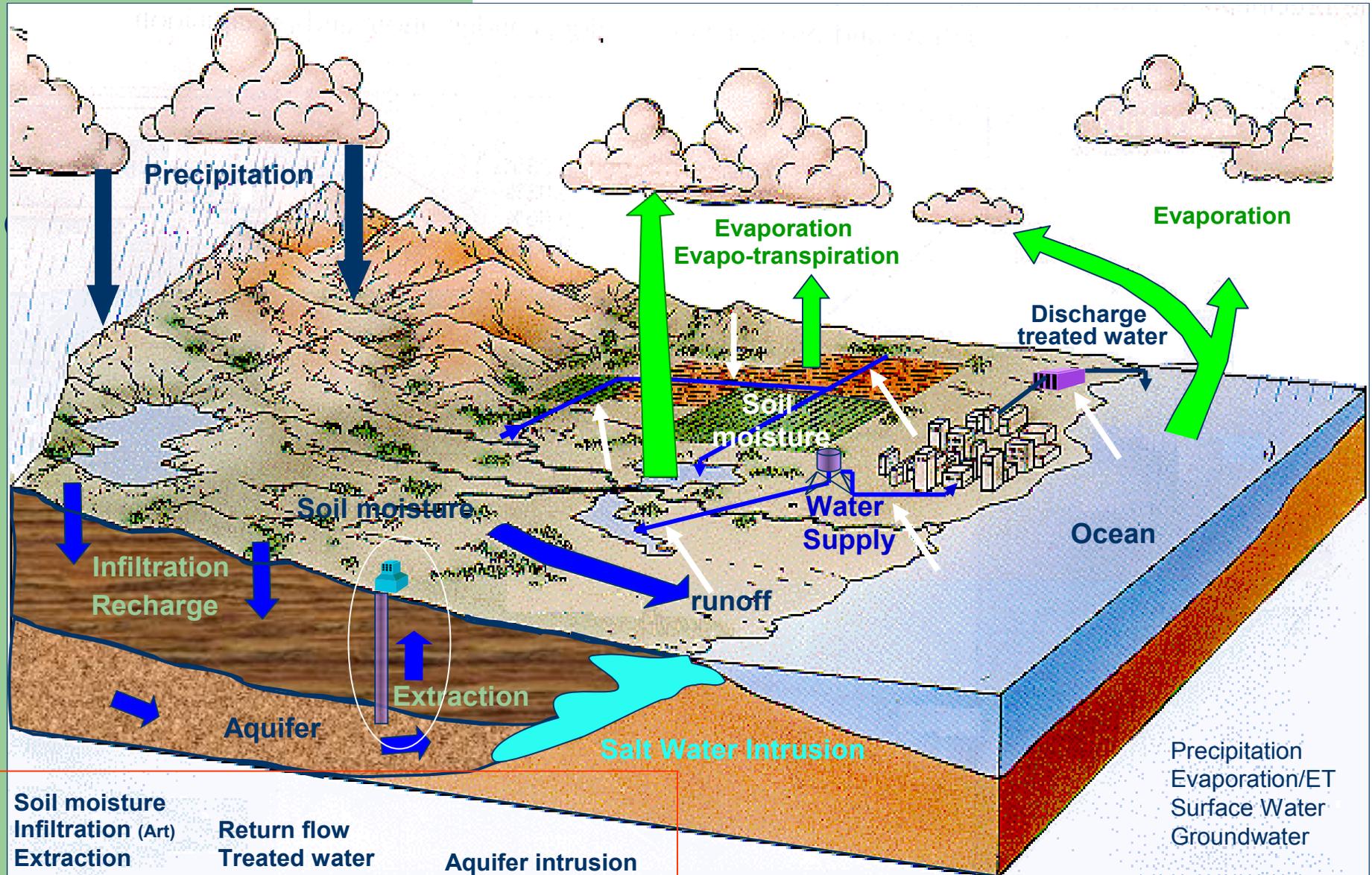
Water is an ecosystem resource

- Water is a resource embedded within ecosystems; not a freely manipulable resource; nor is it a resource to be indiscriminately mined

Hydrologic Processes - Uninterrupted



Hydrologic Processes in Human Environments



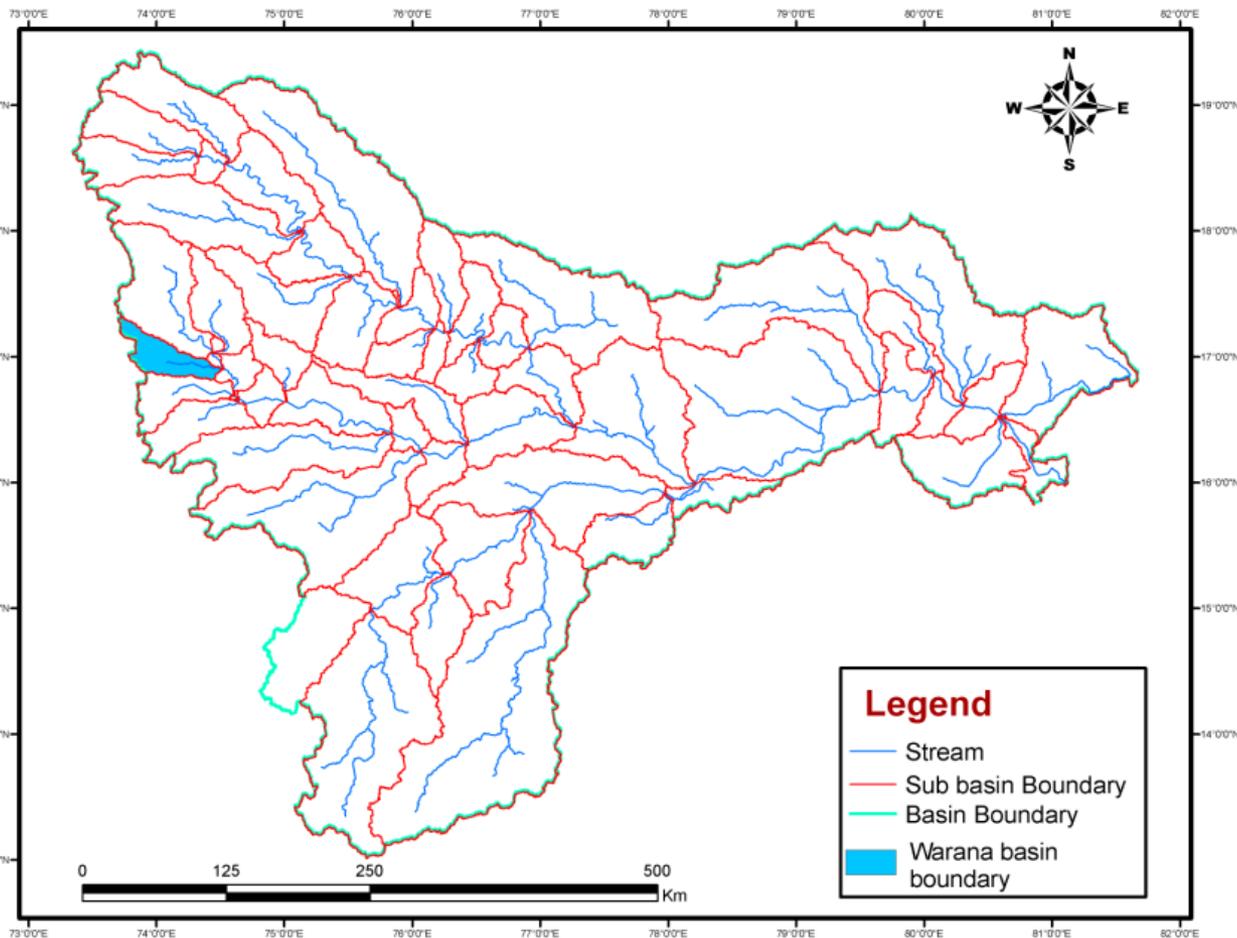
Water is an ecosystem resource

- Concept of environmental flows: flow required for the preservation of ecosystem services
- Issues related to water quality: who is returning how much of water to the ecosystem and in what condition

Water is a common pool resource

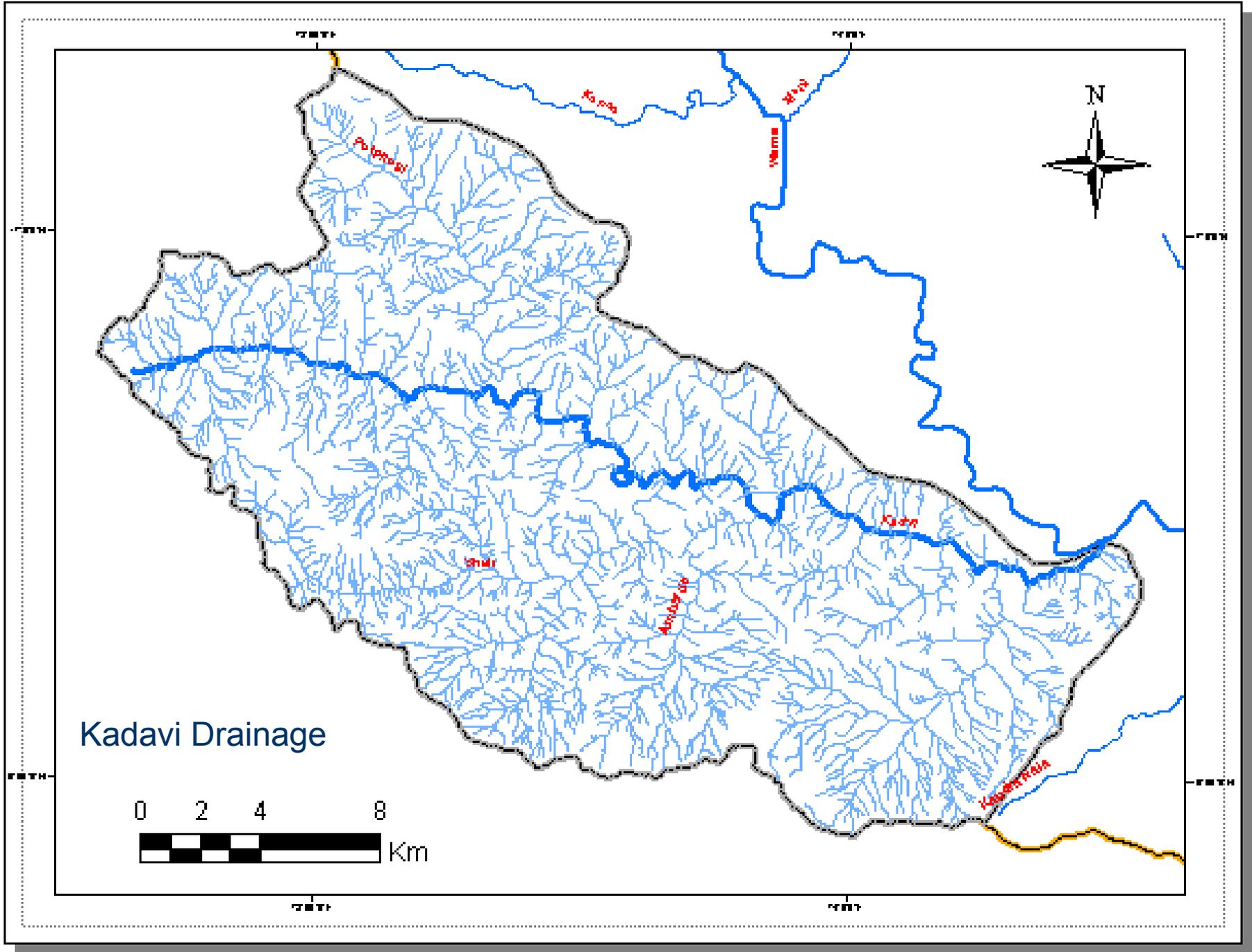
- Water is not a public good
- Common pool character of water irrespective of what property regime it operates under
- Divisible and amenable to sharing
- Has multiple, competing uses and users and so there are resultant trade offs involved
- Inherent problem of excludability; the exclusion costs involved are often very high

Water is both a local and non-local resource



Water is present at many scales

Krishna basin



Kadavi Drainage



Water is both a local and non-local resource

- The way water is planned, used and managed causes externalities
- Unidirectionality and asymmetric relationship
- Limits of slogans like '*gaonka pani gaonme*'
- It needs an approach that nests different scales - from micro watershed upwards to basins and further up to states and countries

Water is both a local and non-local resource

- This has implication for our viewpoint about rights
 - can we say that local communities should have *full* right over it in their areas?
 - what about inter-watershed or basin-level equity?
- Every community has a *proportional* right to water as part of a collective right to assured livelihoods
- Water use beyond fulfillment of livelihood needs, does not form part of this *right* and moreover cannot be at the cost of others' livelihoods

Assured and variable nature of water

- The issue of dependability
- Assured and variable water need to be handled differently
 - Assured water to be more equitably shared and tied to livelihood needs
 - Variable water could be utilised and managed in very many different ways:
 - for bulk biomass production (small dimension timber, bamboo, fibre, etc.) which can be value added through processing and inputs into dispersed industrial production
 - it can be also distributed to more enterprising farmers at economic costs

Socio-cultural dimensions

- Water: The fountain of life and civilisations
- Harappan civilisation: the earliest evidence in the subcontinent of the attempts to harness water
 - Settled, irrigated agriculture
- The influx of the Indo-Aryan speakers from the Central Asians
 - Nomadic, pastoral lifestyle
- The conflict of lifestyle and worldviews between newly arrived pastoral tribes and the already arrived settlers who practiced settled agriculture
 - Both of them viewed water differently
 - Battle is described between Indra and Vritra

Socio-cultural dimensions

- In the southern most part of the sub-continent - Tamil Nadu that we find the earliest evidence of irrigation systems that continue right into the present
 - The tank system and Etram (water lifting device)
 - The Sangam literature
 - The oldest comprehensive account of the construction of tanks that we have is through the eyes of a woman -- Silapadhikaram as we follow Kannagi

Socio-cultural dimensions

- Socio-cultural needs draw attention to the multi-faceted nature of water
- Water needs - drinking water use, domestic water use, water for livelihoods - often mediated, at least partially, through cultural traditions and values
- Social hierarchies and inequalities get intertwined with cultural traditions and values
- Is water culturally constructed?

Peculiarities of water as 'private property'

- 'Ownership' of water is basically an entitlement to use water in a certain way at certain points and times
- Entitlements: not in an absolute sense; but relative or proportionate share in a common pool
- Issue of variability: sharing of surpluses & shortages
- Each of these characteristics of ownership of water moves it further and further away from classical private property ownership that is the basis of most of our laws
- Water never was a commodity prior to the advent of modernity or capitalism: capitalises nature more and more and convert it into private property

In short:

- Because of the peculiar nature of water both as an ecosystem and common pool resource, it cannot be treated as private property in the classical sense
- The instruments like classical market mechanisms cannot work efficiently because water lacks the reliability, the ready manipulability and the constancy that other private property has
- All these characteristics have a bearing on water:
 - water related institutions, policies and laws, movements and struggles around water and the normative concerns underpinning our approach and viewpoints about water

To sum up

- Water is an ecosystem resource
 - Concept of environmental flows
 - Issues related to water quality
- Water is a common pool resource
- Water is both a local and non-local resource
 - The issue of scale
- Assured and variable nature of water
- Socio-cultural dimensions
- Peculiarities of water as `private property`