



E: What are common definitions or interpretations of the term "water community" in the scientific literature?

In scientific literature, the term "water community" can refer to several concepts depending on the context.

Here are the common meanings:

1. **Aquatic Ecosystems**
2. **Hydrological Communities**
3. **Microbial Water Communities**
4. **Biotic Assemblages**
5. **Water User Communities**
6. **Benthic and Pelagic Communities**



E: OK, my interest is in the combination of numbers 2 and 5 from your list.

When combining the concepts of "Hydrological Communities" (number 2) and "Water User Communities" (number 5), "water community" in this context typically refers to groups of people or organizations that are actively involved in the management, conservation, and utilization of water resources. Here are the key aspects:

1. **Stakeholders in Water Management**
2. **Community-Based Water Management (CBWM)**
3. **Water User Associations (WUAs)**
4. **Integrated Water Resources Management (IWRM)**
5. **Water Governance**
6. **Participatory Approaches**
7. **Sustainable Practices**

In summary, a "water community" in this context focuses on the collaborative efforts of various stakeholders to manage and utilize water resources effectively, ensuring sustainability, equity, and community involvement.



E: What would be a good definition of a circular water community?

A circular water community is a collective of individuals, groups, organizations, and institutions dedicated to the sustainable management and reuse of water resources through circular economy principles. This community emphasizes minimizing water waste, maximizing water reuse, and recovering valuable resources from wastewater. By integrating decentralized water systems, innovative technologies, and collaborative governance, a circular water community seeks to create a resilient, self-sufficient, and environmentally friendly water management system. This involves active participation from diverse stakeholders, including local residents, businesses, agricultural entities, and government agencies, working together to achieve closed-loop water cycles that support both human and ecological health.



E: Can you make an illustration of such a circular water community?

It should appeal to a group of scientists and practitioners from the water sector who are about to write a research proposal on this topic.



This sentence suggests a sequence

From ChatGTP's definition:

By integrating decentralized water systems, innovative technologies, and collaborative governance, a circular water community seeks to create a resilient, self-sufficient, and environmentally friendly water management system.

We choose to see a sequence here:

1. First, we decide to decentralize
2. Then, we need a technical solution to make decentralization happen
3. Next, we realize that this technical solution will not work without collaborative governance (in our proposal this is called a coordination mechanism)

Let's illustrate this using the Zeeland case study

1. First, we choose to decentralize:

Why? Because climate change, supply constraints, and increasing demand are causing increasing water stress which cannot be solved with water from outside the region.

2. Then, we need a technical solution:

Reservoir-/water banking to satisfy demand from agriculture, tourism and urban use using a physical reservoir.

3. Next, we make it work with a **coordination mechanism**:

Either formalized using contracts between sectors and the reservoir owner, or community-wise, based on trust and self-management. Or something in between.



E: Can you now illustrate this case study?

Zoom out from Zeeland to other case studies

1. First, we choose to decentralize:

A variety of reasons.

2. Then, we need a technical solution:

Banking, ponds, desalination, water treatment, metering, sensors, water market (note some are physical, others not)

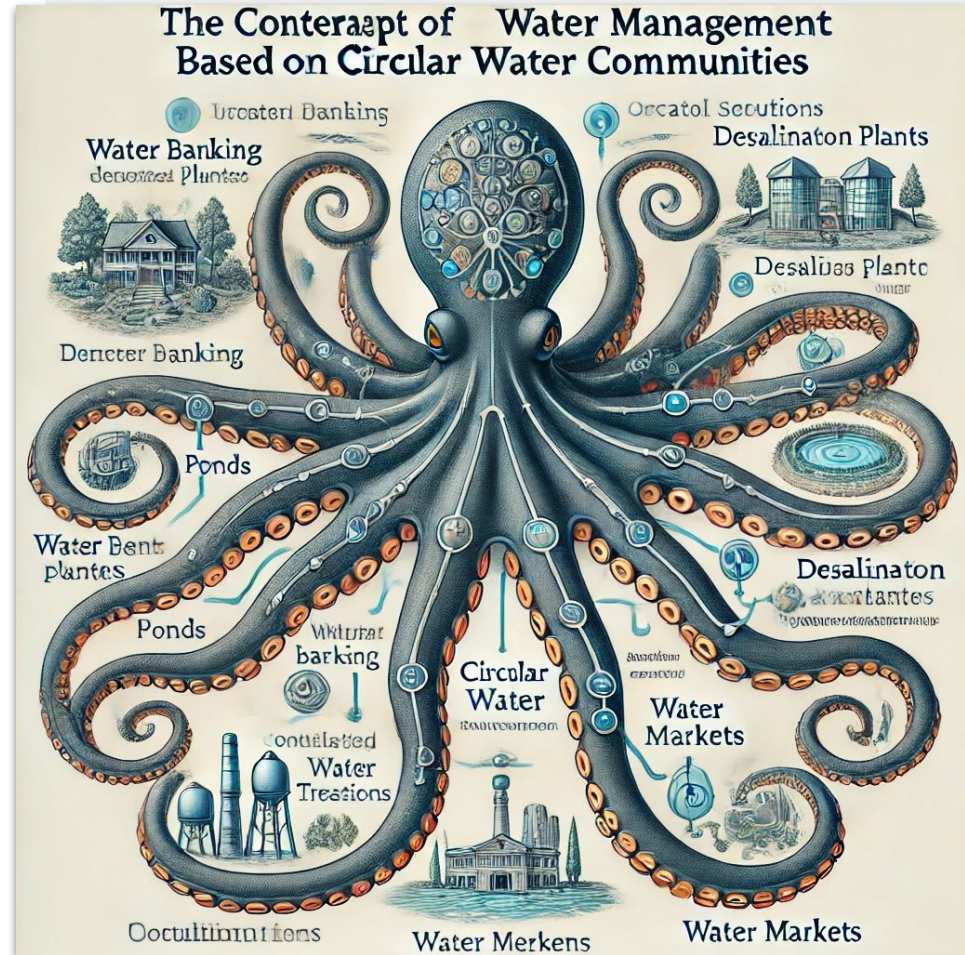
3. Next, we make it work with a **coordination mechanism**:

Either formalized or community-based or something in between (recall the gradient).



E: Illustrate the concept of decentralized water management based on circular water communities as an octopus where

1. its head represents decentralized water management,
2. its tentacles are the technical solutions, and
3. each tentacle features a gradient of coordination mechanisms, from formal to community-based.



Think, pair, share

Our goal was to start talking around water policies / coordination mechanisms / governance arrangements of decentralized water systems in the context of circular water communities.

Think, pair, share

1. What do you recognize?
2. What do you not recognize?
3. What did we miss / would you add?