

# D7. Towards a Guidance Note on Valuing Water

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Tallinn, Estonia

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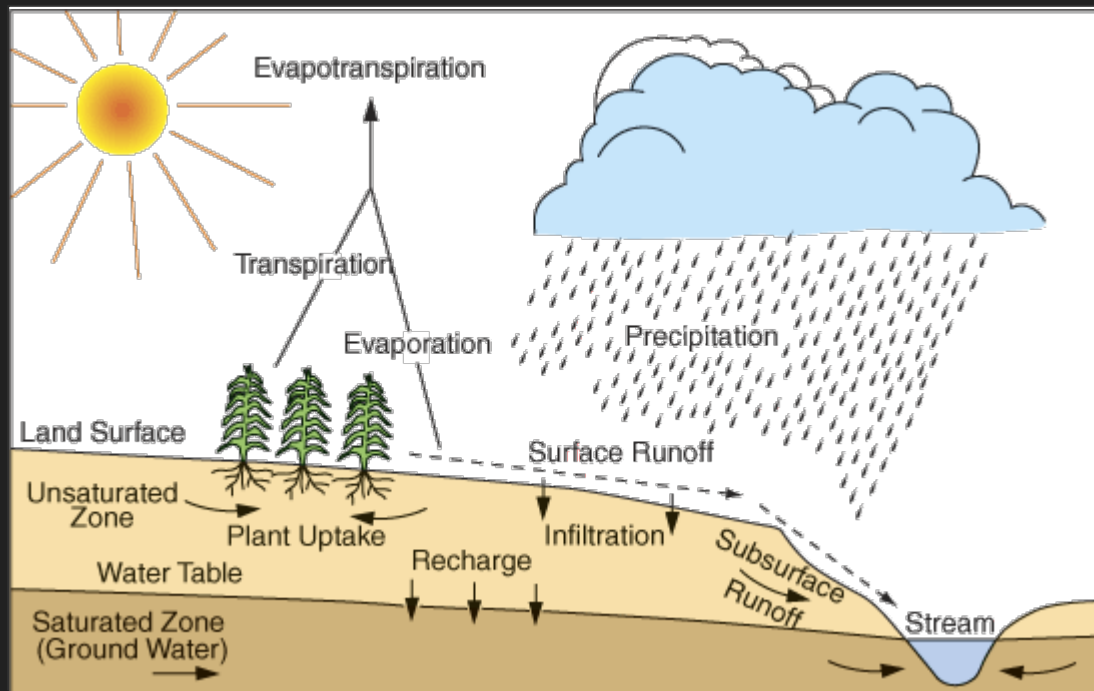


# Motivation

“The SEEA should be in a position, given the volume of currently available research & existing practice, to provide appropriate guidance & support in ... measurement [of the value of water]”

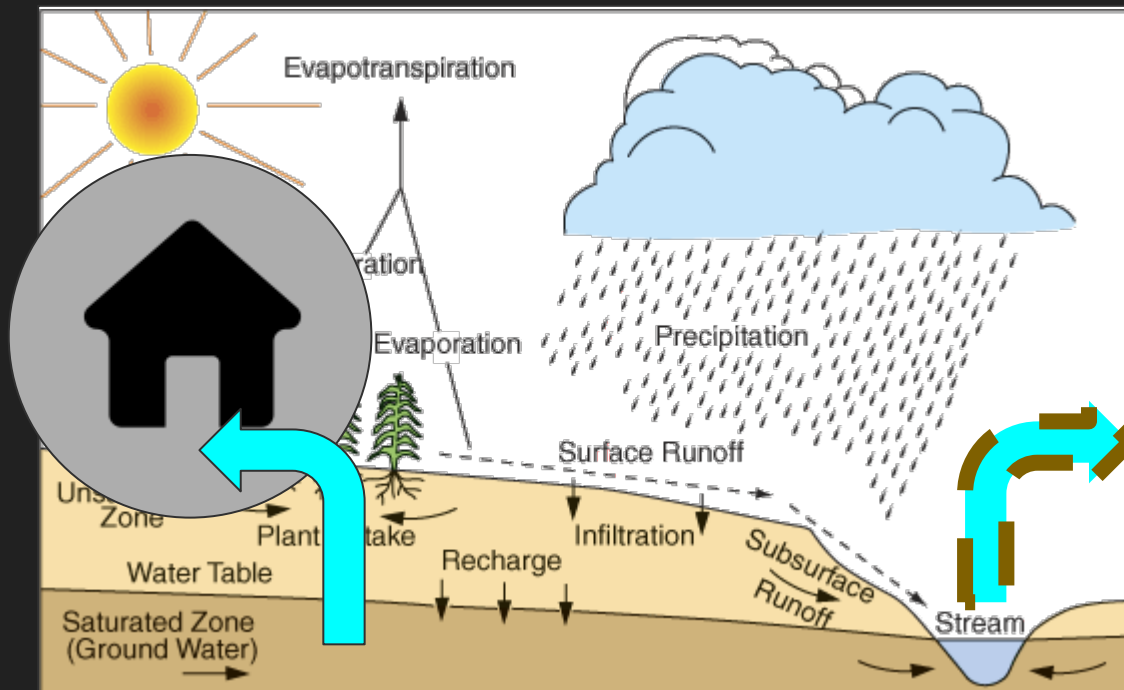


# The hydrological system

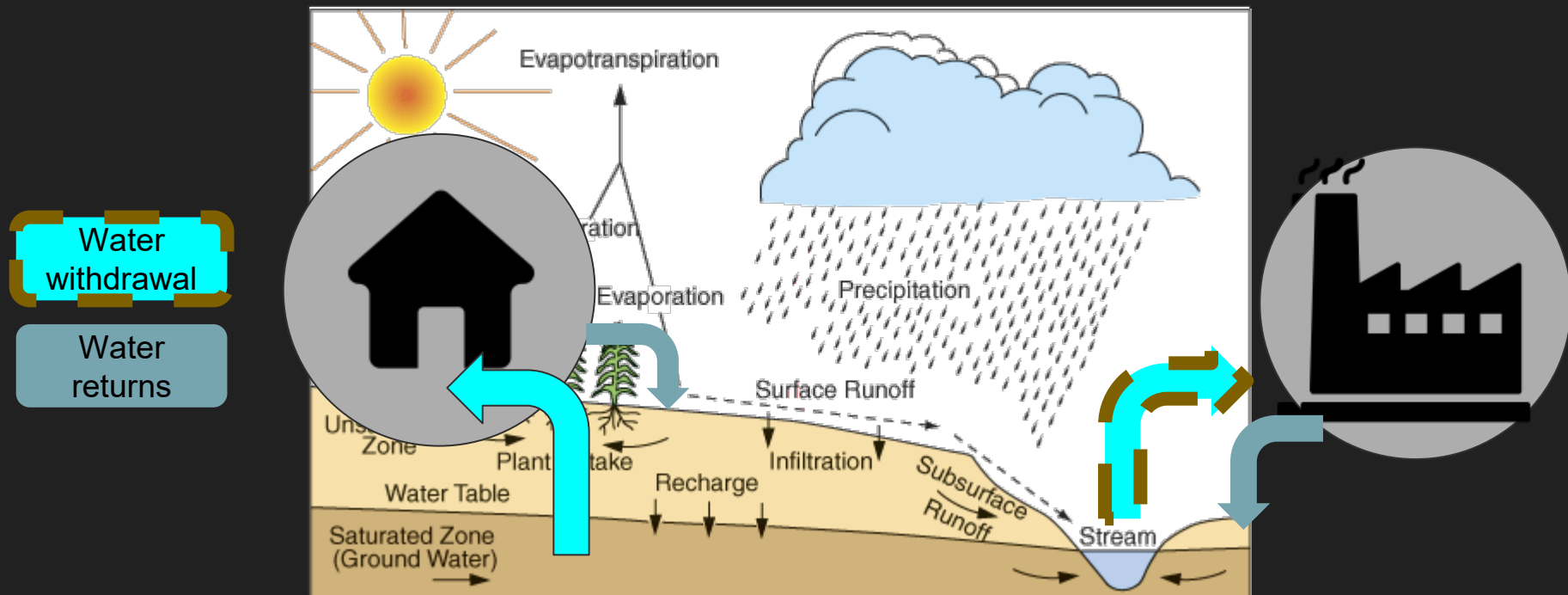


# The hydrological system ~ economy

Water withdrawal



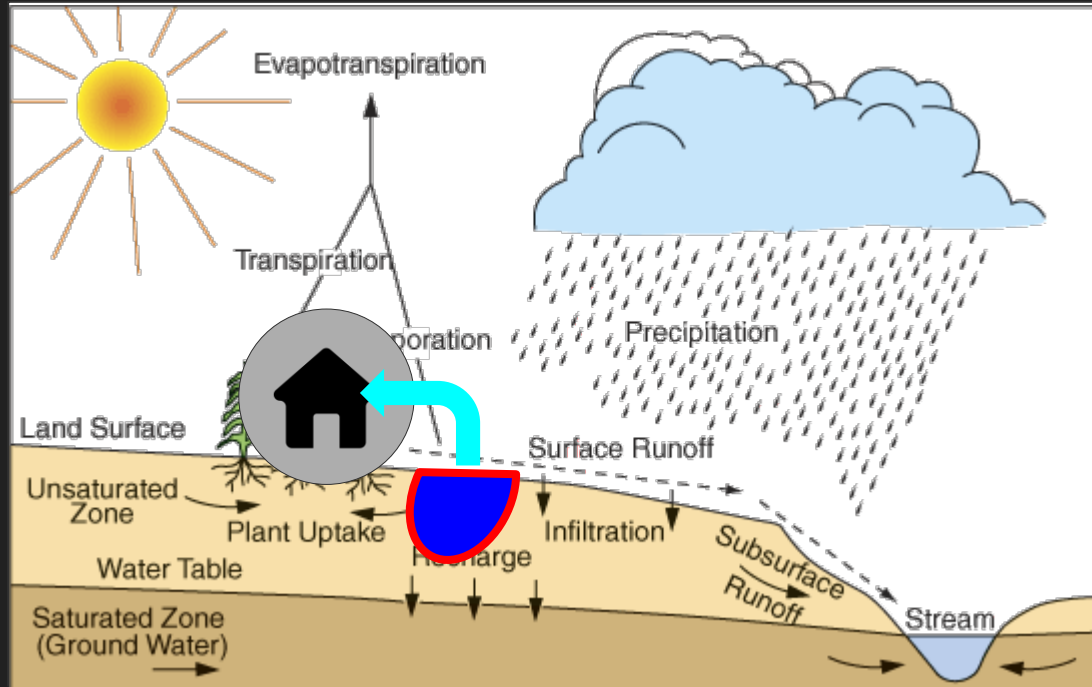
# The hydrological system ~ economy



# Storage stabilizes supply

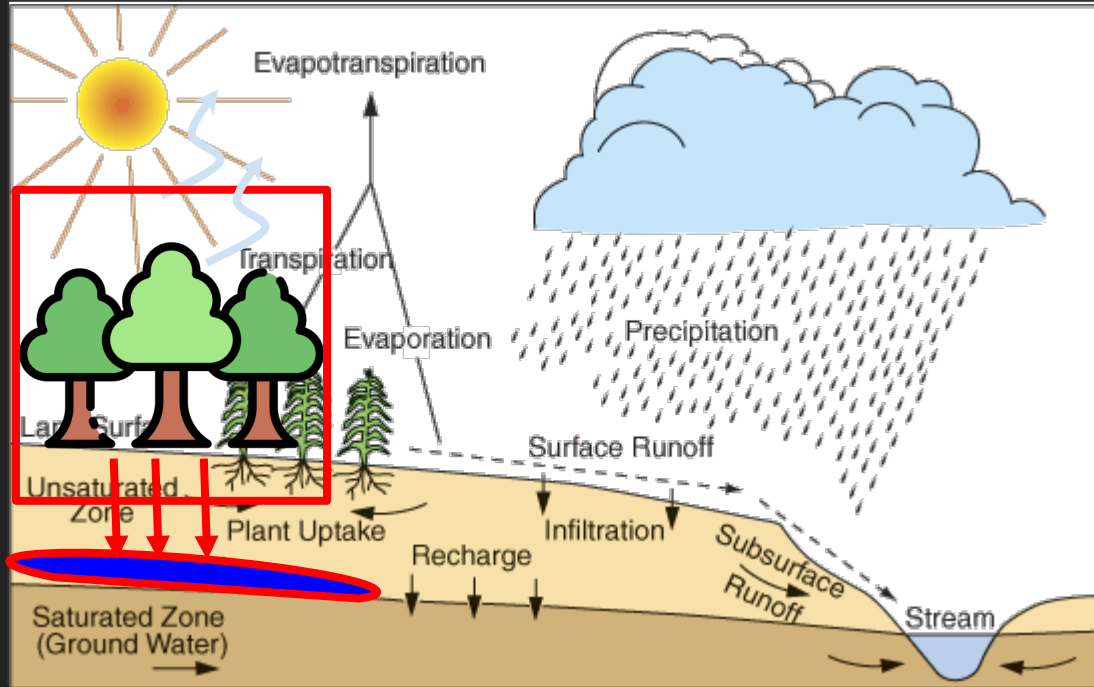
Water  
withdrawal

Water  
storage



# Land cover can alter recharge rates *(but don't forget plants transpire)*

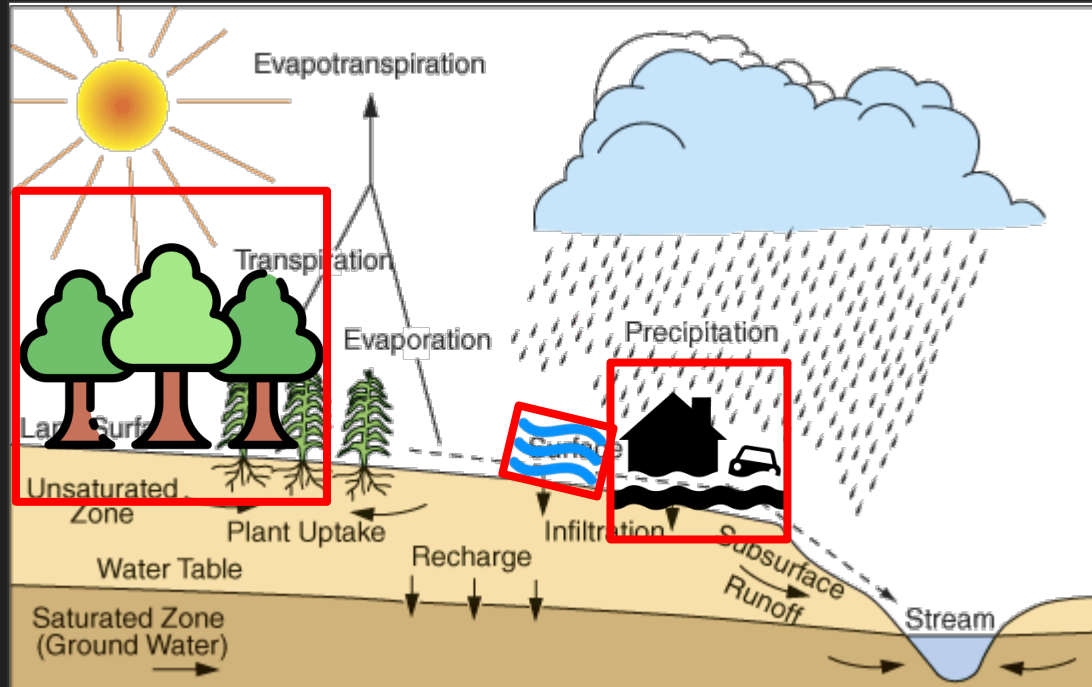
- Land cover
- Water storage
- Water recharge



# ..& land cover can affect flooding

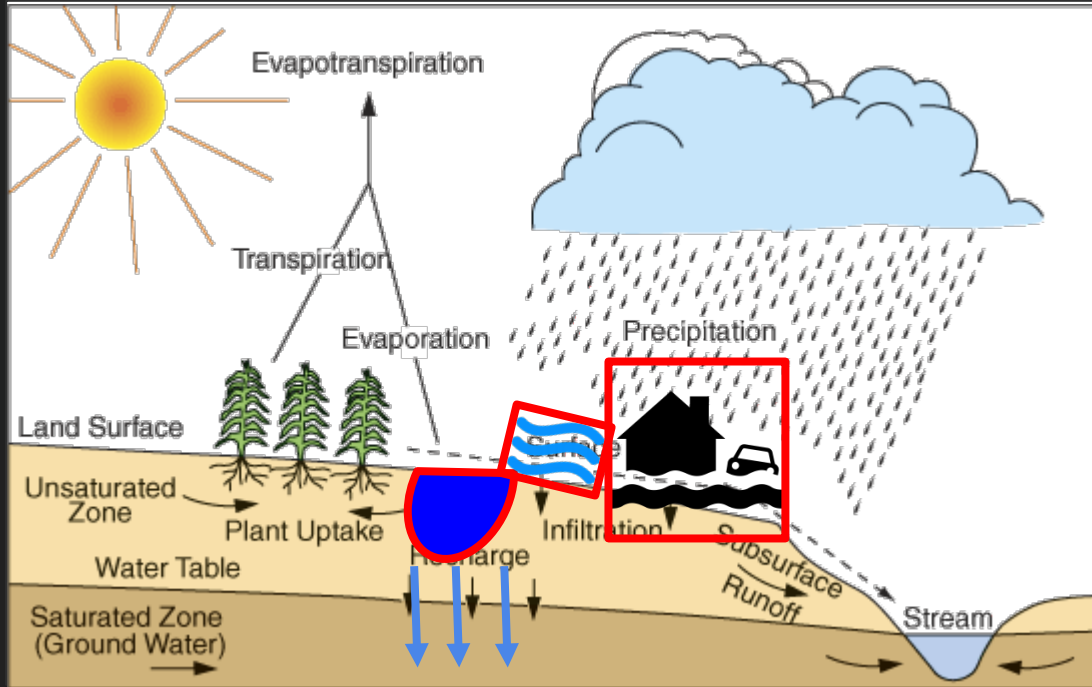
Land cover

Flooding



(by the way, **storage** can also alter **flooding** & **recharge**)

- Water storage
- Water recharge
- Flooding



# Hydrological realities that need to underpin our thinking

- The economy **uses** water, **moves** it, **pollutes** it, **puts** it back
- Water's value depends on its **intended use, quantity, quality, location, & timing**
- A unit of water can be **reused** again & again



# Parallels with Ecosystem Accounting

- Ecosystems do not “**produce**” water, they alter **where, when, & how** it flows
- Right way to think about water’s ES value “**in relation to what?**” (?)
  - The value of ecosystem in delivering hydrological services = the difference between water with ecosystem compared to “next best use” (?)
  - Similar to carbon accounting (?)





## Scoping: Research Issues

- A. What is the specific **target of valuation**, e.g., the total stock of water, the value of abstracted water, changes in the stocks of water resources; and what are the relationships among these values?
- B. What **scope of water resources** should be considered, e.g., only those water resources where there is abstraction; and whether groundwater, rivers and lakes and artificial reservoirs should all be included?
- C. Should the valuation of all **ecosystem services** and abiotic flows supplied by water resources be considered, including **passive uses** of water?



## Scoping: Research Issues

- D. What **valuation framework** and concepts should be applied?
- E. How should issues of water **scarcity** (and **abundance**) and the zero problem (i.e. the final litre of water having infinite value) be considered?
- F. How should **water quality** be taken into account?



## Scoping: Research Issues

- G. How can entries in the SNA **supply & use table** (in monetary terms) best support the compilation of monetary supply and use tables for water?
- H. How should valuation methods account for **variation in prices** across catchments within a country?
- I. Should **alternative & complementary valuations** of water be described in the SEEA CF?



Literature  
review  
X  
Issue

SEEA CF 5.11.4

SEEA Water Ch. 8

London Group Issue Paper

2025 SNA

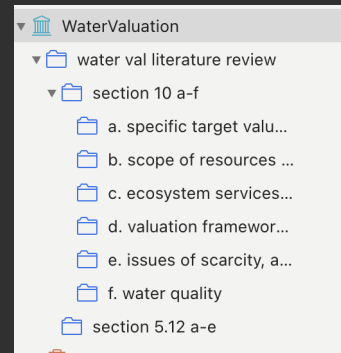
SEEA EA

UNSD Guidance on EA

Wider economic valuation  
literature

# Sort/Tag

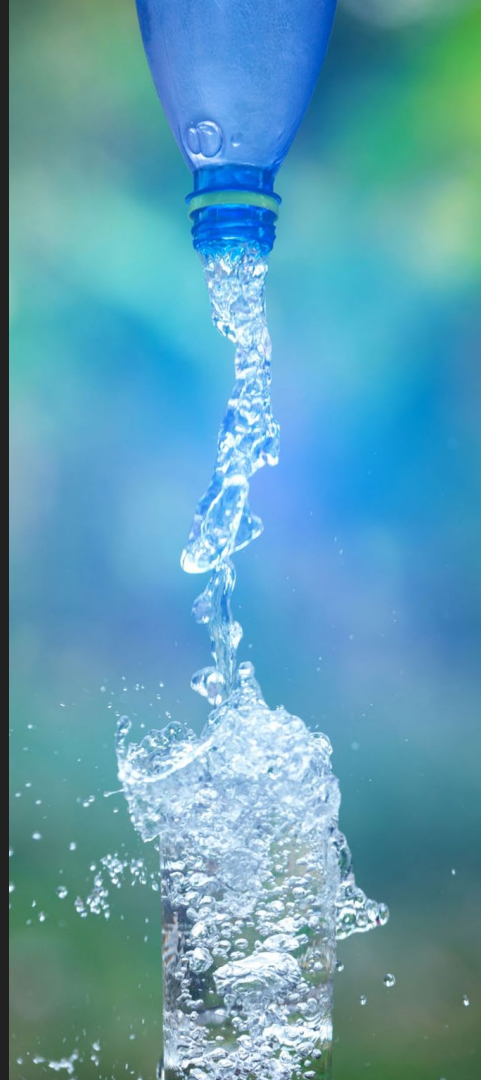
Purpose: link  
each paper to  
**issues** it  
addresses



- A. **target** of valuation (e.g., total stock of water, abstracted water, changes in the stocks of water resources)
- B. **scope** (e.g., abstraction; ground water, rivers, lakes; artificial reservoirs)?
- C. **ecosystem services**; abiotic flows; passive uses
- D. valuation **framework; concepts**
- E. **scarcity** (and abundance); zero problem
- F. water **quality**

# Code

Purpose: code **specifics** (of target, scope, framework, service, etc.)



## *Thematic coding under development*

- A. **target** of valuation (e.g., **total stock of water, abstracted water, changes in the stocks** of water resources)
- B. **scope** (e.g., **abstraction; ground water, rivers, lakes; artificial reservoirs**)?
- C. **ecosystem services**; abiotic flows; passive uses
- D. valuation **framework; concepts**
- E. **scarcity** (and abundance); zero problem
- F. water **quality**

# REFERENCE

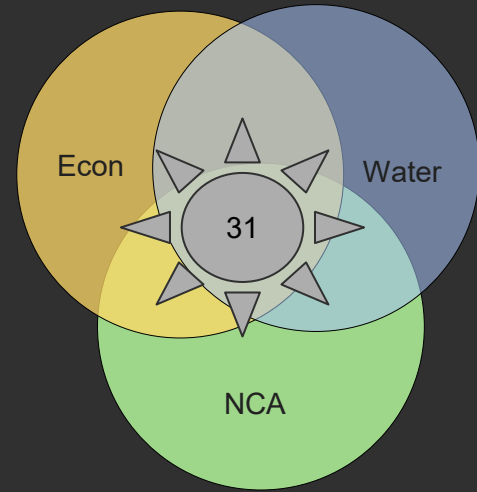
Summary:



Issue	pp./§	Text	Theme	Code
1 Target				
2 Scope				
3 Services				
...				

# Finding wider literature

Purpose: Collect literature on theory and empirics of water valuation



**Search databases:** Web of Science; Google Scholar; JStor; NBER; IDEAS/RePEc; EconLit; Scopus

**Search terms:** Natural Resource Valuation, Water Valuation, Water accounting, Natural Resource Accounting, Ecosystem management, Water governance, Resource valuation methods



- WaterValuation
- water val literature ...
- section 5.12 a-e
- section 10 a-f
- a. specific tar...
- b. scope of re...
- c. ecosystem ...
- d. valuation fr...
- e. issues of s...
- f. water quality
- Duplicate Items
- Unfiled Items
- Trash
- Zoe - Capstone Proje...

- Accounting
- Agricultural Economics
- Agricultural Geography
- Agricultural system
- Allocative Efficiency; Cost-...
- AQUATOOL Asia Asset price
- Assets

Filter Tags

Search: All Fields & Tags

Title	Creator	Date
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> Integrating physical and economic data into experimental water accounts for the United States: Lessons an...	Bagstad et al.	10/2020
> A Trusteeship Theory of Accounting for Natural Capital Assets	Barton	1999
> Social sustainability and equity in the blue economy	Bennet et al.	
> Using economic valuation techniques to inform water resources management: A survey and critical appraisa...	Birol et al.	2006-07-15
> Rent Seeking, Wealth Transfers and Water Rights: The Hawaii Case	Bowen et al.	1991
> Wai Ea: Restoring Hawai'i's Public Trust and Reclaiming Lahaina's Water Future	Chang	2023-2024
> A review of water valuation metrics: Supporting sustainable water use in manufacturing	Das et al.	2023-06-01
> A multivariate statistical approach to the integration of different land-uses, seasons, and water quality as w...	de Souza Pereira et al.	2019-08-03
> A multivariate statistical approach to the integration of different land-uses, seasons, and water quality as w...	de Souza Pereira et al.	2019-08-03
> Limits to Substitution Between Ecosystem Services and Manufactured Goods and Implications for Social Dis...	Drupp	2018/01/01
> Discounting Disentangled	Drupp et al.	2018/11
> Experimental valuation of Dutch water resources according to SNA and SEEA	Edens and Graveland	2014-09-01
> Establishing the SEEA Ecosystem Accounting as a global standard	Edens et al.	2022-04-01
> Economic Value of Climate Change Adaptation Strategies for Water Management in Spain's Jucar Basin	Escriba-Bou Alvar et al.	May 1, 2017
> A New Era of Economic Measurement for the Environment and Natural Capital	Fenichel	2024-06
> Natural Capital: From Metaphor to Measurement	Fenichel and Abbott	2014-03
> The nature of natural capital and ecosystem income	Fenichel et al.	2018-01-01
> The path to scientifically sound biodiversity valuation in the context of the Global Biodiversity Framework	Fenichel et al.	2024-08-20
> National Accounting for the Ocean and Ocean Economy	Fenichel et al.	2023
> Water Accounting. International Approaches to Policy and Decision-making.	Godfrey and Chalmers	2012
> The price and value of water: An economic review	Grafton et al.	2023/01
> The price and value of water: An economic review	Grafton et al.	2023/01
> Discussion on water resources value accounting and its application	Guo et al.	2018-06-05
> Theory and practice of water ecosystem services valuation: Where are we going?	Hackbart et al.	2017-02-01
> Relative Price Changes of Ecosystem Services: Evidence from Germany	Heckenhahn and Drupp	2024/03/01
> Progress in natural capital accounting for ecosystems	Hein et al.	2020-01-31
> Water Valuation in Urban Settings for Sustainable Water Management	Irfeev et al.	2023/1

# Synthesis

Purpose: Identify similarities,  
differences, patterns, gaps



# Time line

**Summer 2025:** form authorship team, hire research assistant, start lit review

**Fall 2025:** LG meeting, authors meet; review approach; define codes; confirm roles; literature review continues; outline GN

**Spring 2026:** Draft GN

**Summer 2026:** Consultation

**Fall 2026:** Finalize



# Comments & Questions

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