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Definitions, Objectives & Typologies of Transboundary Water Allocation

Suvi Sojamo, Finnish Environment Institute, 3rd Meeting of the Expert Group on the Transboundary Water Allocation Handbook 20th-21st October 2020



Chapter 1 2): Current outline

2) Water Allocation in a Transboundary context

- a. *Water Allocation in the Era of Changing Circumstances*
- b. *Definitions and Objectives of Water Allocation in Transboundary Context*
- c. *How Allocation Relates to Water in a Transboundary Context*
- d. *Key Processes & Methods of Water Allocation*
- e. *Basis of Water Allocation in International Water Law*
- f. *Shared Knowledge & Data for Water Allocation*
- g. *Cooperation & Scales of Governance for Water Allocation*



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Proposed elements for a new chapter

- Definitions and Objectives of Water Allocation in Transboundary Context (Ch I)
- Key Processes & Methods of Water Allocation (Ch I)
- Three-Step Transboundary Allocation Typology: Groundwater and Surface Water (OSU)
- Understanding Allocable Water (Ch II)
- **Potential title: Definitions, Objectives & Typologies of Transboundary Water Allocation**



Definitions of Transboundary Water Allocation i

- **Transboundary water allocation** is an **iterative planning and decision making process** that determines quantity, quality and timing of water at the border between two or more parties and grants associated entitlements.
- **Water quantity** is most commonly specified as a volume of water (per year, month or other period) **at certain location**. It may also be defined as an average, minimum volume, as a percentage of available supplies (a share of flow or of the volume in storage), or by a particular access rule (e.g. right to abstract a certain volume under particular circumstances).
- **Water quality** concerns certain water quality objectives and criteria with associated parameters.
- **Timing** relates to **monthly**, seasonal **or** inter-annual variabilities and exceptional circumstances, both natural and human induced, in water quantity and quality.



Definitions of Transboundary Water Allocation ii

- **Transboundary contexts** cover a range of settings where surface **and** ground waters (including rivers, lakes and aquifers) mark, cross or are located on boundaries between two or more nation states, federated states or other sub-national jurisdictions.
- **Allocable water in transboundary context** is the share of water resources utilizable for abstraction for different uses in the given basin or aquifer area, **sometimes** after the flows needed to meet environmental objectives have been reserved.
- **Water entitlements** give rights to abstract and use water for different parties and purposes. The entitlements may be further allocated to sub-basins, regions and ultimately individual users who get water abstraction rights, permits, concessions or licenses, depending on the jurisdiction.



Objectives of Transboundary Water Allocation iii

- **The objectives of transboundary water allocation** are context specific, but they may be related to:
 - Equitable and reasonable use of shared water resources
 - Avoidance of significant harm to other states and parties
 - Environmental protection
 - Climate change adaptation (necessitating re-allocation)
 - Management of exceptional circumstances, such as droughts and floods
 - Efficient use of water resources and economic development
 - Benefit sharing



Key Processes & Methods of Water Allocation

- Transboundary water allocation processes typically consist of:
 1. *Identification* of water issues at stake, water resources and resource use and demand assessments, and identification of current legal status and institutional frameworks in place;
 2. *Negotiating and establishing transboundary agreements or arrangements*, defining the water allocation method and criteria applied;
 3. *Implementation* consisting of legal and policy instruments and mechanisms at international, national and subnational level, including water laws, monitoring and enforcement mechanisms, and entitlements, permits and licenses granted to individual or collective water users.



Water Allocation Approaches Defining Allocation Mechanism (OSU)

- **Hierarchy approaches** defining the priority of different water needs, uses and entitlements; most commonly, different sectors or uses are giving priority (e.g., drinking water, agriculture) (Speed et al. 2013), but this could also give hierarchy to historical or existing uses.
- **Criteria (single or multiple) approaches** based on e.g. (population, surface area,) mean annual or monthly diversions, minimum guaranteed volume, caps on abstractions, cross-boundary flow requirements, percentage of available flow or 'no further development' approach (Speed et al. 2013).
- **Strategic development approaches**, based on e.g. socio-economic and ecological scenarios and risk assessments (Speet et al. 2013).
- **Economic/market-based approaches**, based on the economic value water generates in different economic activities (Speed et al. 2013; Roozbahani et al. 2014).
- **Rights-based approaches** emphasizing the right to water based on hydrography or historical use (Wolf 1999)
- **Needs-based approaches** establishing allocation based on riparian needs (Wolf 1999; Hamner and Wolf 1998; Giordano et al. 2013)
- **Proportionate division approaches** based on physical division of water (Speed et al. 2013),
- **Future uses approaches** based on projected future demand and supply (Speed et al. 2013).



Three-Step Transboundary Allocation Typology: Groundwater and Surface Water (OSU)

- Groundwater allocation, surface water allocation, and hydropower benefit division
- Explanatory Clause
 - *Direct Mechanisms*
 - *Indirect Mechanisms*
 - *Mechanisms Based on Principles*
 - *Groundwater Specific Mechanisms*
 - *Not Defined*
- Context Clause
 - *Purpose or Context of Mechanism*
- Hydropower Benefit Division
 - *Fixed Quantities of Power*
 - *Variable Quantities of Power*
 - *Percentage of assessed value of electricity generated*
 - *Percentage of power generated*
 - *Fixed value of electricity generated*
 - *Consultation*
 - *None*
 - *Other*



Chapter I: Open questions and feedback

- Chapter I restructuring to two separate chapters
- Definitions of transboundary water allocation
- Objectives of transboundary water allocation
- Key processes of transboundary water allocation
- Water allocation approaches defining allocation method
- Three-Step Transboundary Allocation Typology: Groundwater and Surface Water (OSU)