



UNIVERSITY OF  
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# Chapter II: Issues Water Allocation Can Address

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



# Chapter II: Rationale

- Discussion on how, in a transboundary context, water allocation approaches and frameworks can seek to address challenges of
  - competing demands and growing pressures
  - limited availability of water for different uses and functions including ecosystems services and needs
  - excesses and deficits in flows
- Highlights the importance of understanding
  - the water resources available in terms of quantity, quality and variability influenced by natural and anthropogenic factors including climate change
  - the uses and functions of water
  - various factors impacting on the allocable water resource



# Chapter II: Contents

## 1) Understanding Water Availability Now and in the Future

- a. Understanding Water Available for Allocation
- b. Climate Change as a Cross-Cutting Challenge

## 2) Availability & Variability of Surface Waters and Groundwaters

- a. Availability
- b. Drought
- c. Flooding

## 3) Balancing Water Uses and Competing Needs

- a. Environmental Needs/[Requirements](#)
- b. Water Use Sectors and Functions
- c. Considering Historical, Current and Future Uses
- d. [Balancing Different Water Uses and Needs](#)

## 4) Understanding Impacts on Allocable Water

- a. Water management infrastructure
- b. Water Scarcity
- c. Water Quality
- d. Ecosystem Degradation



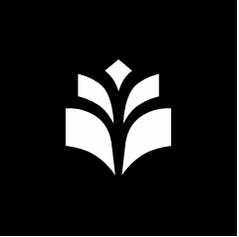
# Chapter II: Understanding Water Available for Allocation

1. Delineating and agreeing on the basin and/or aquifer boundaries;
2. Assessing the surface and groundwater availability, taking into account inter- and intra-annual variability, with hydrological and geohydrological analyses utilizing commensurate methods and data;
3. Assessing water requirements, i.e. needs, uses and functions within each state, potentially in different climate and development scenarios;
4. Assessing water balance between water availability and requirements of each state, potentially in different climate and development scenarios;
5. Estimating allocable water in different seasons and in different scenarios.

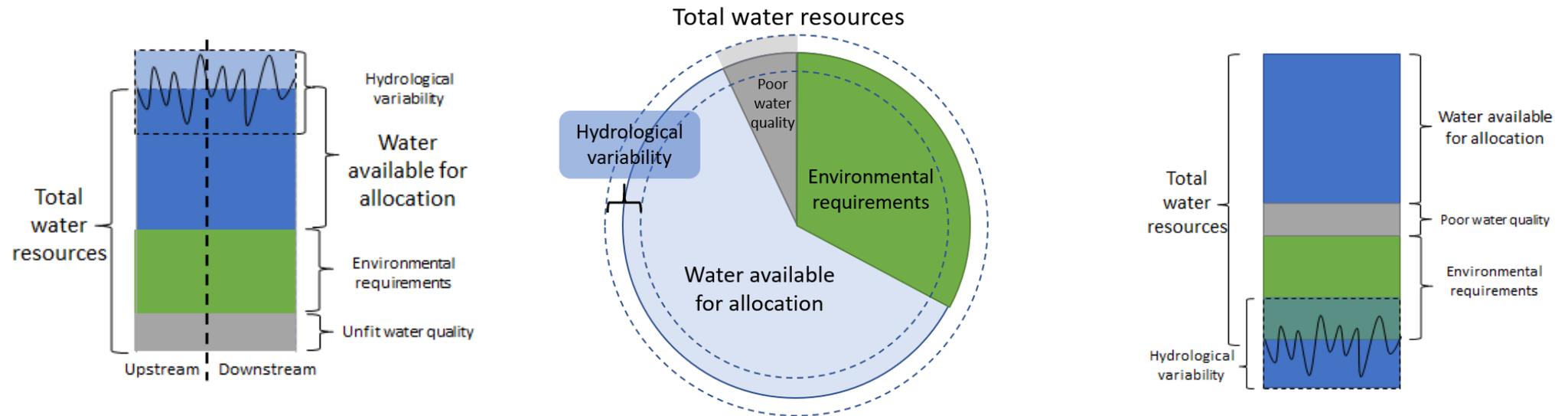


# Chapter II: Understanding Water Available for Allocation

- The water available for allocation does not equate with the total water resources of a basin or aquifer
  - water availability may be constrained by hydrological variability, geology or infrastructure
  - part of the flow is required for maintaining ecosystem and environmental functions
  - the natural or degraded quality of water does not necessarily meet the requirements of different needs, uses and functions
- The total water available for allocation: share of water resources utilizable for abstraction for different uses in the given basin or aquifer area, **after the flows needed to meet environmental objectives have been reserved.**
- Dynamic concept and number



# Chapter II: Understanding Water Available for Allocation - Visualisations





# Chapter II: Contents with case studies

## 1) Understanding Water Availability Now and in the Future

- a. Understanding Water Available for Allocation
- b. Climate Change as a Cross-Cutting Challenge [Cubango-Okavango](#), [Colorado Federal River Treaty](#)

## 2) Availability & Variability of Surface Waters and Groundwaters

- a. Availability [Albufeira Convention](#), [Saq-Ram Aquifer](#), [Limpopo](#), [Trifinio Aquifers](#), [Genevese Transboundary Aquifer](#)
- b. Drought [Orange-Senqu](#), [Mara](#)
- c. Flooding [Dniester](#), [Chu-Talas](#), [Germany & Netherlands Flood Management](#)

## 3) Balancing water uses and competing needs

- a. Environmental Needs/Requirements [Transboundary Aquifers in Southern Africa](#), [St Mary's Milk and Poplar Rivers](#), [Pripyat](#)
- b. Water Use Sectors and Functions [Agr: Disi-Saq Aquifer Agreement](#), [Amu Darya](#), [Colorado River Energy: Tejen/Harirud Doosti Dam](#), [Syr Darya](#)
- c. Considering Historical, Current and Future Uses [Murray-Darling](#), [Jordan Israel Peace Treaty](#)
- d. Balancing Different Water Uses and Needs

## 4) Understanding Impacts on Allocable Water

- a. Water management infrastructure [Albufeira Convention](#), [Jordan Israel Peace Treaty](#), [Tejen/Harirud Doosti Dam](#)
- b. Water Scarcity [Orange-Senqu](#), [Mara](#), [Columbia River](#), [Colorado River](#)
- c. Water Quality [Lake Ontario](#)
- d. Ecosystem Degradation



# Chapter II: Comments and feedback received

- Highly useful comments and feedback from the Expert Group to the individual sub-chapters
  - A general challenge for drafting and commenting: a diverse set of complex issues, clear definitions for transboundary water allocation still missing
  - Original intent
    - what motivations are there for transboundary water allocation, what is its purpose?
  - What we have now
    - a heavy emphasis on basics of resource availability, definitions, overlap with other chapters
    - it was not always evident that water allocation would be the means to address the given issue, but rather the issues listed are something that need to be taken into account while allocating water
- The chapter is in need of restructuring, condensing and a potential change of title



# Chapter II: Open questions

- Chapter rationale and framing
  - Could it be clarified and what would that entail? Should we change the current title *Issues Water Allocation Can Address*?
- Sub-chapter content
  - Could we reduce repetition and overlap between Chapters, how? Moving *Understanding Water Available for Allocation*, balance between *Environmental Requirements* and *Degradation*?
  - Could we cut out definitions and text on basics of water resources management?
- Issues to discuss
  - Prioritizing ecosystem/environmental requirements, allocating water to higher value uses at national level