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WATER
CONVENTION

LIMITATIONS TO WATER ALLOCATION & BROADER APPROACHES

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Scope and structure proposed for chapter III

Limitations to water allocation

- Limitations of Water Quantity, Quality and Timing

Broader approaches to consider

- Basin-wide planning approach
- Water-Food-Energy-Ecosystems Nexus Approach
 - Case: Syr Darya Basin (Central Asia)
- Assessment and sharing of benefits
 - Case: Drina River Basin (the Balkans)

Limitations to water allocation

Limitations of Water Quantity, Quality and Timing:

- Volumetric allocation of water reduces negotiations to a zero-sum game
 - Fixing excludes the flexibility that dealing with natural variability would require; Climate change, land use change and other factors may make a fixed allocation difficult to ensure
 - Allocation is based on incomplete information/observations
 - Agreed allocation is a simplification
- (to be further elaborated)

“Tracks” of action in water allocation, basin planning & beyond

	Water allocation	Basin-wide planning approaches	Nexus approach
Scale	At a specific defined point, border, construction	Basin level	Beyond basin, scale independent (i.e. applicable at different levels)
Timing	Targeted. When many other options have not produced a result?	Long or medium term	BEFORE sectoral policies/strategies/ plans turn into water demands
Scope of action	Water supply/Bulk water	Water management, considering water-using sectors’ demands	Acting on trade-offs and economic activities; requires engagement of the sectors concerns
Benefits dimension	Considering benefits from water and sharing them can inform water allocation	Transboundary level coordination in planning and management has various benefits, adding to the effectiveness of measures	Helps to substantiate the broader benefits (including from action in different sectors)

Basin-wide planning approach

1. River basin forms the **natural unit for integrated water resources management** in which rivers, lakes and groundwaters interact with other ecosystems.
2. Basin planning overall **needs to strategically and consultatively consider different social, economic and environmental priorities**, and manage water resources so as to best contribute to meeting different (potentially partly conflicting) goals.
3. As river basins (and aquifers) usually **stretch over different administrative and geographical units and State borders**, cooperation between competent actors is needed.
4. The key means to coherent planning is a **river basin management plan**, in international basins ideally a joint plan or at least coordinated plans

Water-Food-Energy-Ecosystems Nexus Approach

1. water, energy and food sectors are **inextricably linked**: actions in one often have impacts on the others, as well as on ecosystems.
2. Resource management and economic policy (e.g. agriculture and energy) **decisions are taken outside water management but they translate into impacts and demands on water**. Need for water allocation measures to address scarcity or impacts could potentially be avoided by integrated planning and informed sectoral policies that are coordinated and take into account availability and variability of water resources.
3. Where competition for water resources has resulted from sectoral demands that have turned out difficult to reconcile, approaches have been developed where **other resources (or benefits) are traded for water** (e.g. the Syr Darya River Basin in Central Asia).
4. Various examples from nexus assessments under the Water Convention

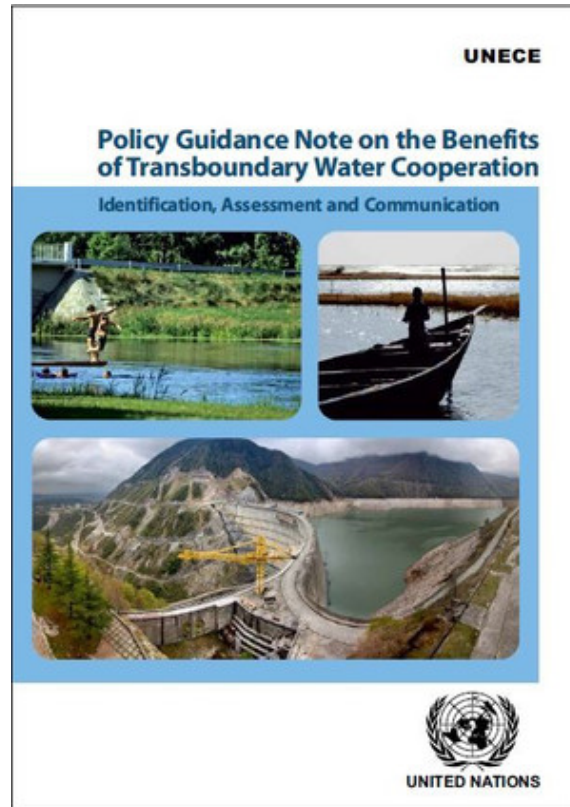
Water-Energy Nexus case study: the Syr Darya Basin

- Agreement on use of water and energy resources of Syr Daya basin (1998) between Kazakhstan, Kyrgyzstan and Uzbekistan (Tajikistan joined a year later) attempted to regulate water for energy exchange.
- The 1998 agreement mandated upstream countries to keep water in reservoirs over Winter period and release it to downstream countries for irrigation later while downstream countries would compensate upstream ones with energy carriers for not using water for hydropower production during Winter.
- The agreements concentrated on multi-annual regulation of the Naryn Syr Darya Cascade and Toktogul reservoir in Kyrgyzstan. The compensation from downstream countries was foreseen in energy resources, such as coal, gas, electricity and fuel oil, and the rendering of other types of products (labor, services), or in monetary terms as agreed upon.
- implementation of the 1998 agreement stopped already after few years.
- Nexus assessment of the Syr Darya (2017) illustrated value of actions like diversifying energy sources as well as improving energy and water efficiency



Assessment and sharing of benefits

- Examination of principles of benefit-sharing approaches at the transboundary level, going beyond water allocation.
- Cooperative management of shared basins should provide **opportunities to increase the scope and scale of benefits**
- **Types of benefits** from cooperation on transboundary rivers: benefits to the river, from the river, because of the river and beyond the river. The potential for sharing these benefits can also inform water allocation.
- Focus on benefits in strictly **economic** terms (quantifiable by e.g. hydro-economic modelling) does not lessen the importance of other benefits
- Cooperation benefits go **beyond economic activities, such as social and environmental benefits as well as peace and security benefits** (typology of benefits of cooperation developed under the Water Convention).

Broader Approaches to Consider: Transboundary water cooperation can generate multiple types of benefits...



“Policy Guidance Note on the Benefits of transboundary water cooperation: Identification, assessment and communication” (UNECE, 2015)

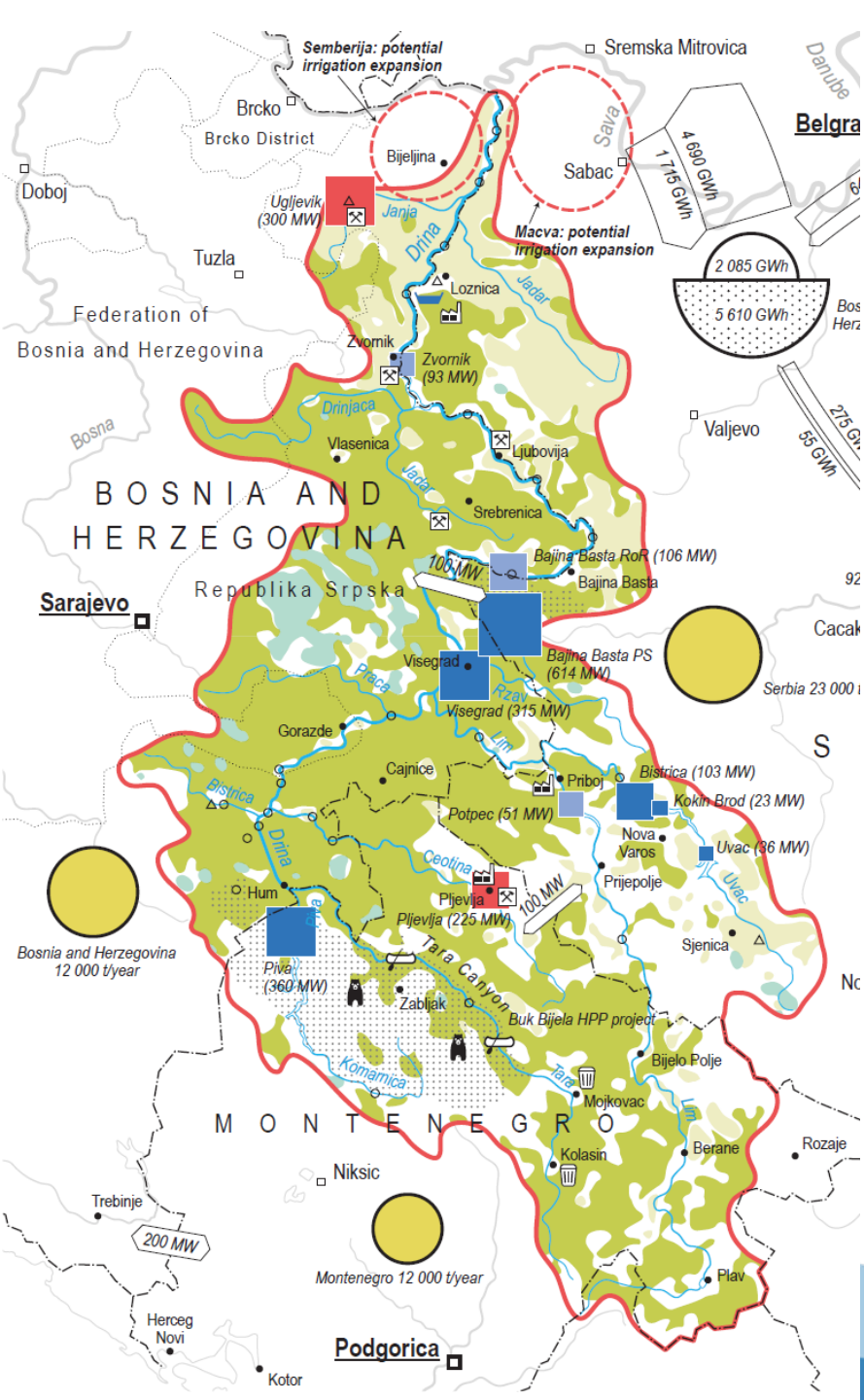
	Economic activities benefits	Benefits beyond economic activities
<p>From improved water management</p> 	<p>Economic benefits</p> <ul style="list-style-type: none"> • Expanded activity and productivity in economic sectors • Reduced cost of carrying out productive activities • Reduced economic impacts of water-related hazards (floods, droughts) ... 	<p>Social and environmental benefits</p> <ul style="list-style-type: none"> • Health impacts • Employment and reduced poverty impacts • Improved access to services (electricity, water supply..) • Preservation of cultural resources or recreational opportunities. • Avoided/reduced habitat degradation and biodiversity loss
<p>From enhanced trust</p> 	<p>Regional economic cooperation benefits</p> <ul style="list-style-type: none"> • Development of regional markets (for goods, services & labour) • Increase in cross-border investments • Development transnational infrastructure networks 	<p>Peace and security benefits</p> <ul style="list-style-type: none"> • Strengthening of international law • Increased geopolitical stability • Reduced risk and avoided cost of conflict • Savings from reduced military spending

Case: Flow-related issues in the Drina River Basin: a case for balancing water management, flood protection, electricity generation and environment protection

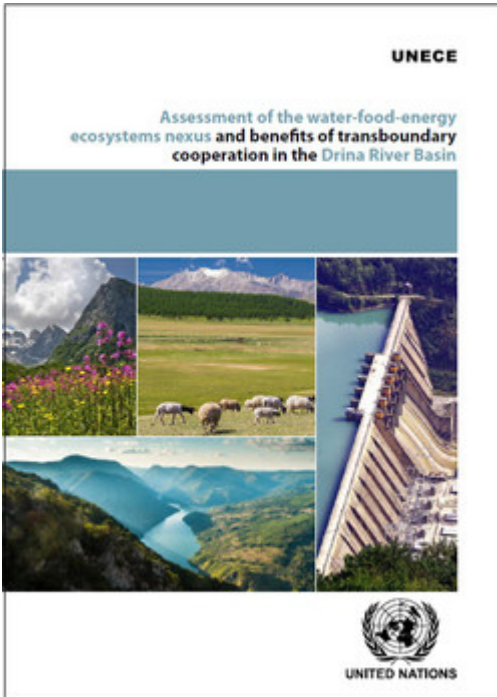
Basin shared by Bosnia and Herzegovina, Montenegro and Serbia

Various flow related needs:



- Hydropower generation
- Plans for expanding irrigation; predicted increased scarcity with climate change
- Erosion, sediment transport
- Solid waste, pollution
- Recreational activities on the tributaries
- Downstream: navigation on the Sava



Example: Identification of benefits of cooperation in the Drina River Basin



Illustrative quantification done: benefits from increased electricity generation from coordinated HPP operation, GHG emission reduction benefits and flood protection reserve

	Economic activities benefits	Benefits beyond economic activities
<p>From improved water management</p> 	<p>Economic benefits</p> <ul style="list-style-type: none"> • Increase in electricity production (e.g. by optimising water release regimes) • Increase in agricultural production (e.g. by improving irrigation systems through coordination and experience exchanged) • Reduced damage from floods (e.g. by better modelling of flood risks, developing protective infrastructure and cooperating in flow regulation) • Development of the tourism sector 	<p>Social and environmental benefits</p> <ul style="list-style-type: none"> • Reduced human costs of floods • Creation of jobs and reduced rural-urban migration (as a result of new economic opportunities) • Increased resilience of local communities to climate change • Protection of water quality and ecosystems (including through improved wastewater treatment and solid waste disposal)
<p>From enhanced trust</p> 	<p>Regional economic cooperation benefits</p> <ul style="list-style-type: none"> • Increased transboundary cooperation in all areas by making the Drina a form of connection and not division • Strengthened process of accession to the EU and better use of EU funds • Increased energy trade and integration, and energy security • Increased number of people employed due to... 	<p>Peace and security benefits</p> <ul style="list-style-type: none"> • Increased trust between countries from working together in flood protection • Facilitated compliance with international obligations to the EU targets on renewables • Avoided conflicts and adoption of cheaper solutions, due to the development of connections between experts and the sharing of information

Questions to the Expert Group

Limitations to water allocation

- *Elaboration of the Limitations of Water Quantity, Quality and Timing?*

Broader approaches to consider

- Basin-wide planning approach: *Key references to suggest?*
- Benefit sharing:
 - *Any very illustrative operational and formalized example?*
 - *Several different divisions of benefits from hydropower have been applied. Benefit sharing vs. allocation i.e. should the topic be moved to this chapter?*
 - *Tools for quantifying benefits: to be covered in Knowledge base?*