

**Item 2. Taking stock of 10  
years of nexus work under the  
Water Convention  
10:10 – 10:30 a.m.**

# Fostering dialogue on « nexus » issues and possible solutions in transboundary basins



# 10 years of WFEE Nexus work under the Water Convention



- **Trans-Boundary Nexus (TBNA) Methodology** (adaptable, flexible) developed, piloted & reviewed, disseminated & adapted by partners (Niger, Central Asia)
- **6 «nexus assessments»** of resources and governance in transboundary basins completed (5 transboundary basins and 1 shared aquifer), in cooperation with regional and basin organizations and international partners;
- **Politically relevant output**, e.g. the Drina RB Nexus Roadmap, including options to formalize flow regulation
- **Scientific knowledge produced/enhanced**, e.g. modelling of water-energy of hydropower in Drin RB, irrigated agriculture in NWSAS
- **Renewable energy and Nexus:** [“toolkit” for energy policy makers](#) to deploy renewable energy more sustainably in transboundary basins in cooperation with UNECE SED
- **Financing and investments** across sectors: regional discussions with IFIs, global stocktaking of [Nexus Solutions and Investments](#) in TB basins, nexus solutions project concepts
- **Energy resilience and transboundary water cooperation**, e.g. upcoming Ikl project 2024-2027 with OECD, EBRD, FAO)



## 2013 (6th Water Convention MOP)

### Establishment of the «Water-Food-Energy-Ecosystems Nexus Task Force»

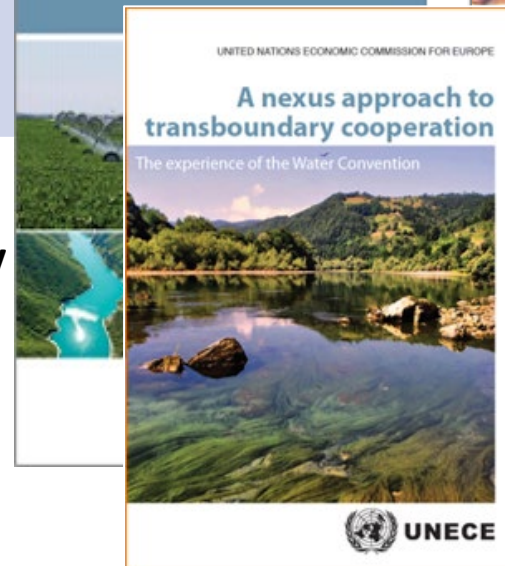
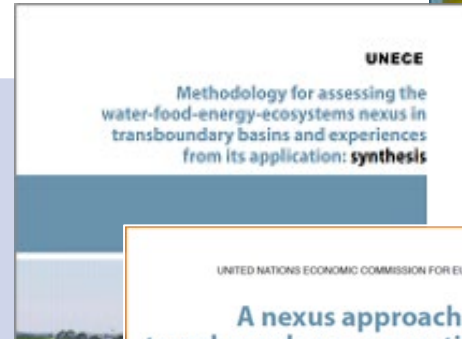
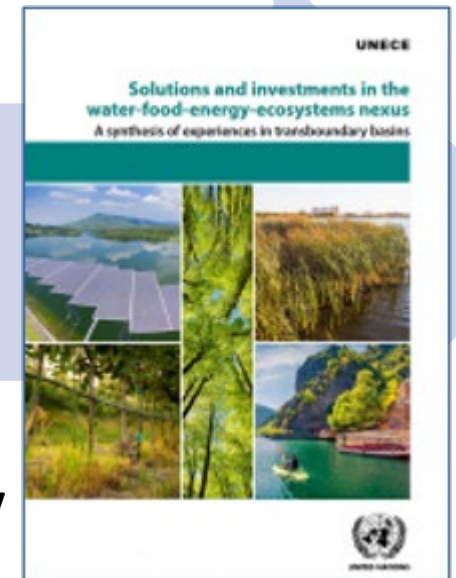
- North-Western-Sahara Aquifer System
- Drina River Basin



## 2018 Synthesis of experiences



## 2021 Stock-taking of Nexus Solutions and Investments



## 2020 «Renewable Energy Toolkit» (with UNECE SED)

- Drin River Basin

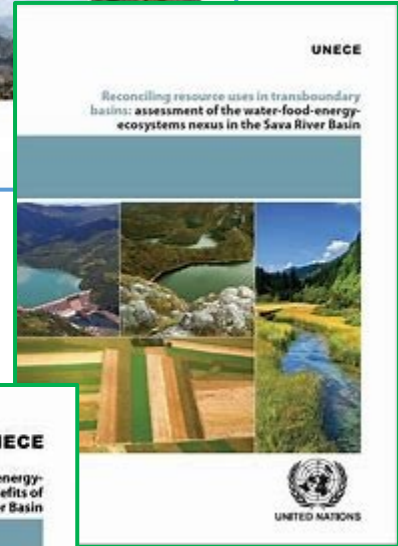
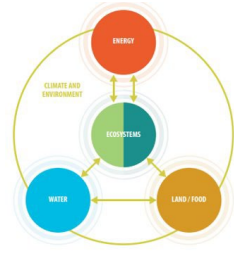
- Central Asia Region (2024...)

## 2015 Trans-Boundary Nexus Methodology (TBNA)

- Alayani-Ganykh River Basin
- Sava River Basin
- Syr Darya River Basin







**Sava** (Bosnia and Herzegovina, Croatia, Serbia, Slovenia, Montenegro)

**Drina** (Bosnia and Herzegovina, Serbia, Montenegro)

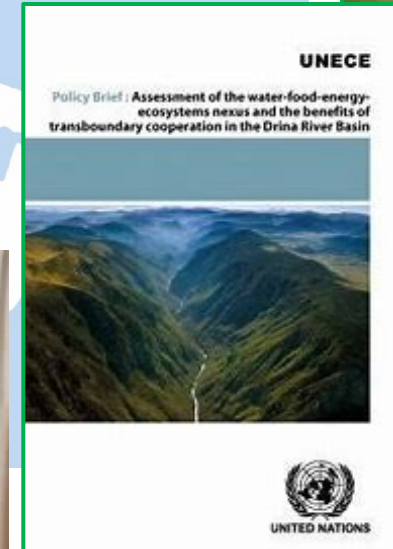
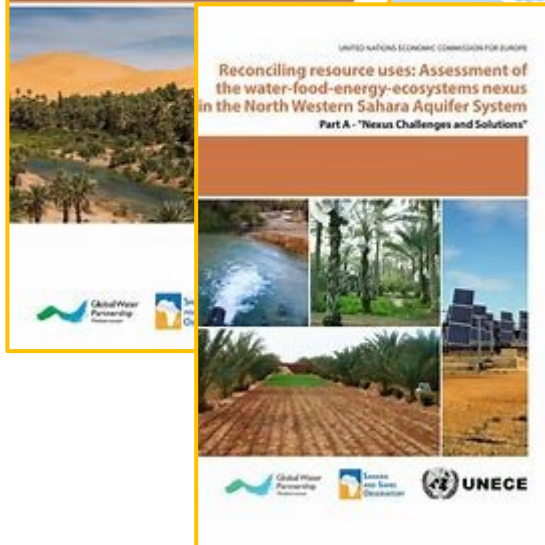
**Isonzo/Soča** (Slovenia, Italy)

**Syr Darya** (Kazakhstan, Kirgizstan, Tajikistan, Uzbekistan)

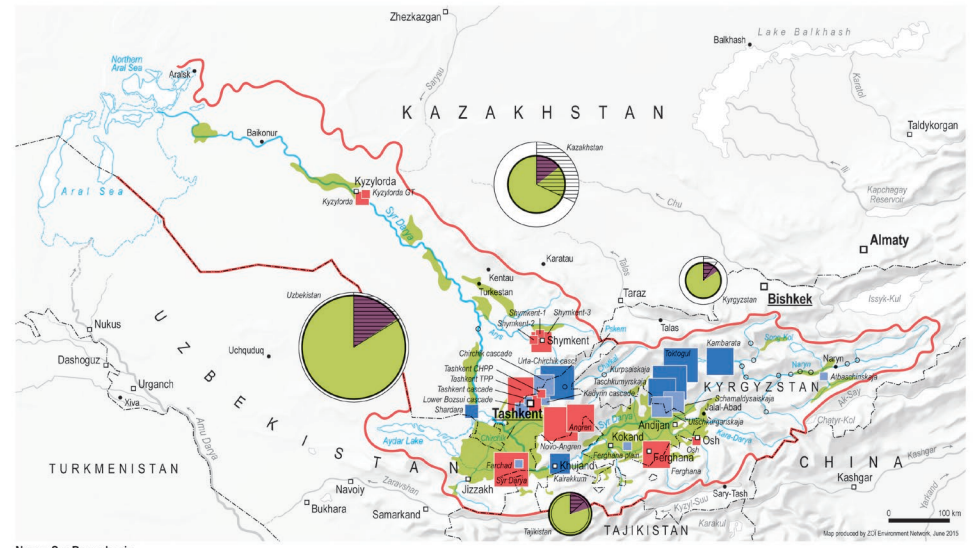
**North West Saharan Aquifer** (Algeria, Tunisia, Libya)

**Alazani/Ganykh** (Azerbaijan, Georgia)

**Drin** (Albania, Kosovo\*, FYR Macedonia, Montenegro)



\* United Nations administered territory under the UN Security Council Resolution 1244 (1999)



# Building knowledge on: reconciling hydropower and irrigation

Recommendations: no-regret national actions, then regional coop:

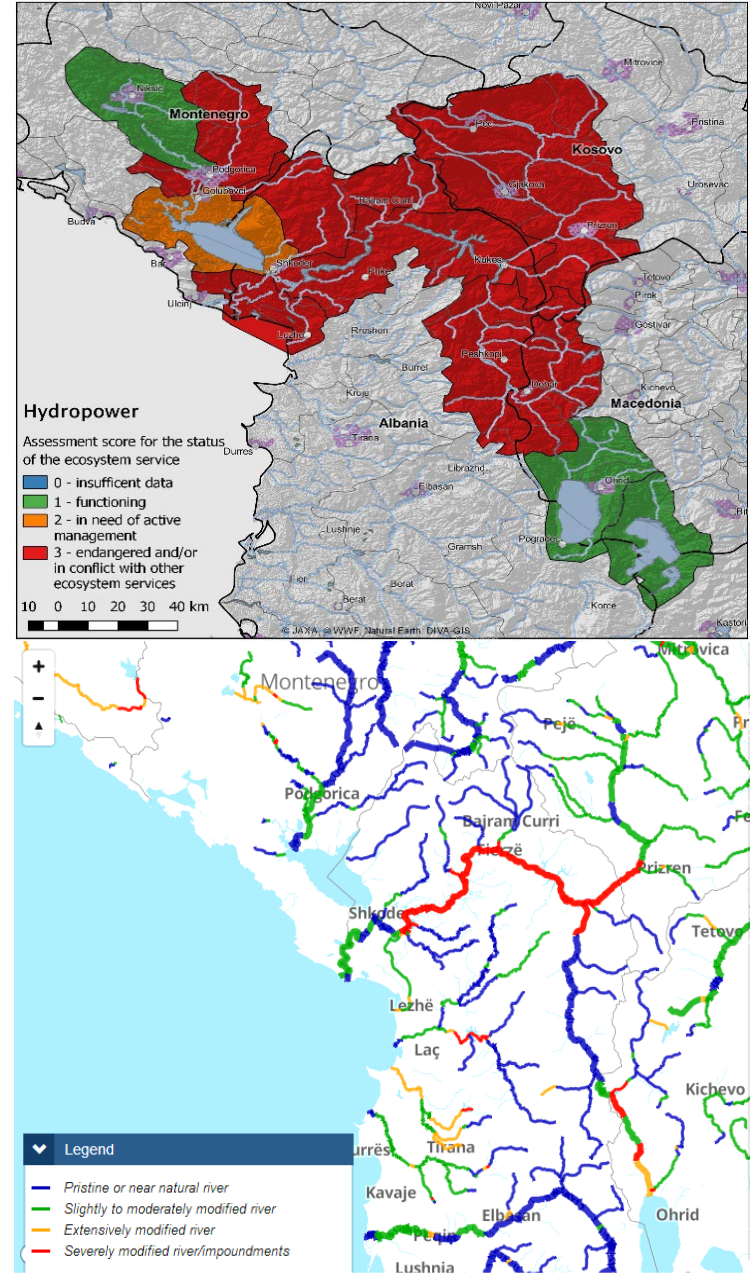
- energy efficiency, diversification of sources, water use rationalization
- reviving regional energy market, possibly energy-water exchanges
- lowering barriers to agricultural trade, thus promoting their more cost-, water- and energy-efficient production and exchange within the region

Inter State Commission for Water Coordination (ICWC) under the International Fund for Saving the Aral Sea (IFAS); (Syr Darya Water Basin Organization (BWO Syr Darya – technical mandate, water mgmt. focus) are addressing cross-sector issues and opportunities



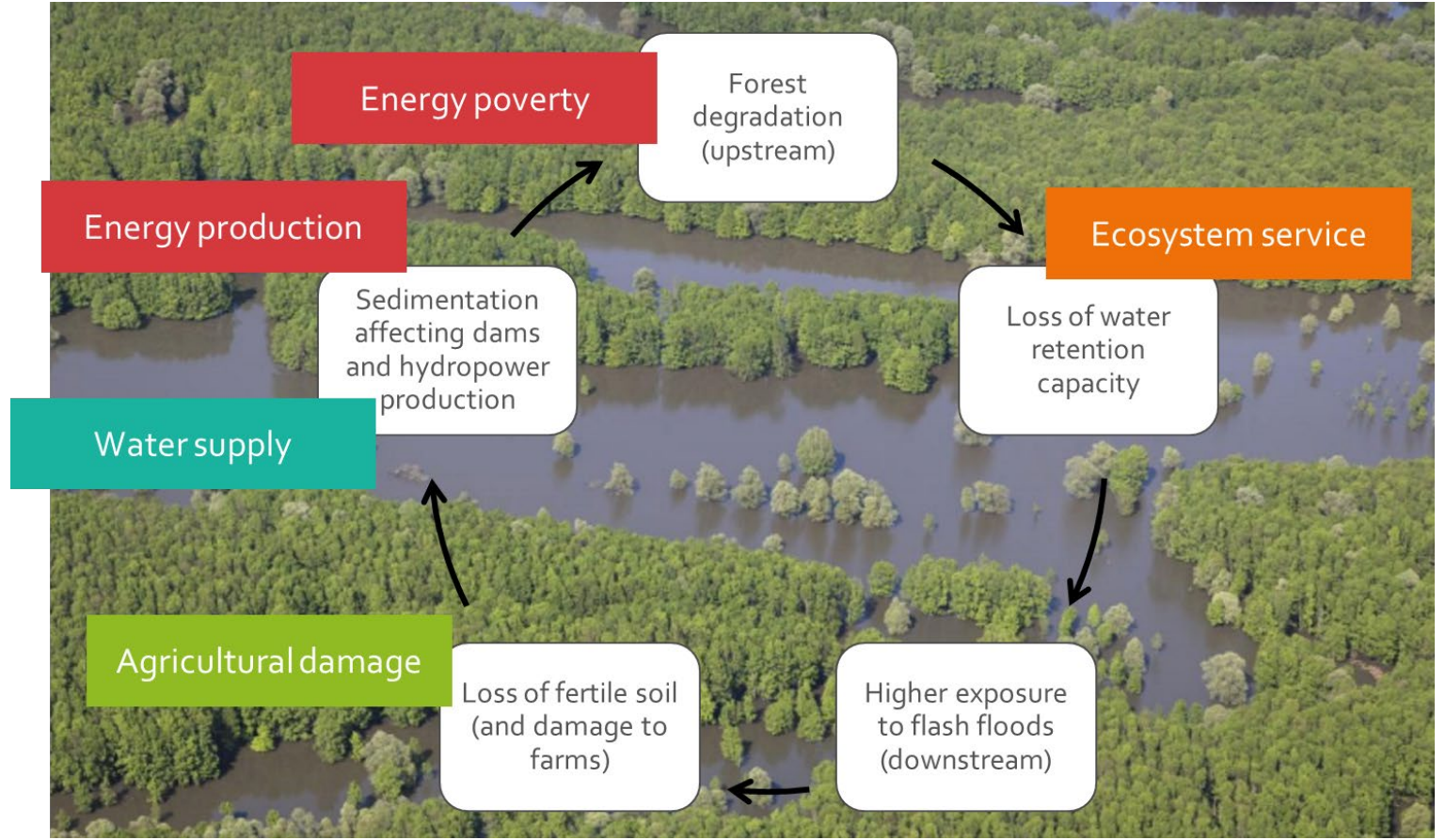
# reconciling hydropower production, flood management, and environmental needs

- Work guided by “Drin Core Group” - towards the establishment of a TB Drin Commission
- Dialogue needed to:
  - improve cooperation among hydropower operators and others (i.e. water authorities, flood forecasting institutions)
  - discuss costs and benefits of further hydropower development in “wild” rivers
- Benefits of cooperation between hydropower operators: integrated energy-water modelling to co-optimize flood protection and energy production.
- Regional cooperation on RE expansion



Source: <https://riverwatch.eu/>

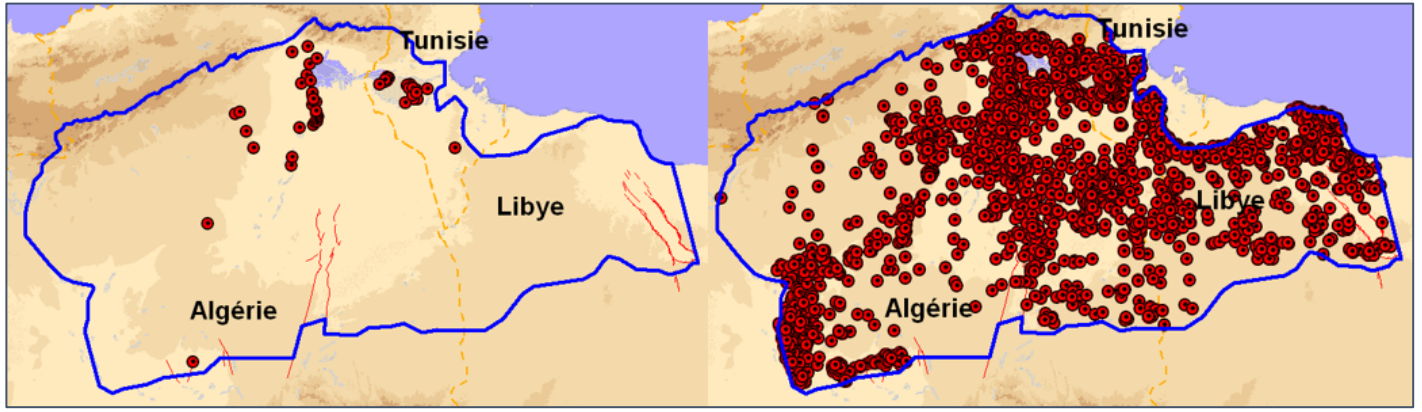
# energy poverty, biomass, and forests (and link to water)



- Forested areas in Caucasus (Alazani/Ganykh) and South-East Europe (Drina, Drin)
- Capturing the benefits of the modernization of the wood-biomass value chain (benefits on economy, health, climate, water, gender..)



# and the groundwater «nexus»



- Nexus issues
- Nexus solutions
- Conclusions and recommendations

- North West Saharan Aquifer System
- Coordination Mechanism (technical mandate, information exchange)
- Irrigation, fossil groundwater, cheap/free energy..
- are we ready for solar pumps?

<b>Energy</b>	<b>Water</b>
<p><b>Key messages:</b></p> <ul style="list-style-type: none"> <li>Energy is a critical element in water production and distribution.</li> <li>Water is a critical element in energy production.</li> <li>Water and energy are interlinked and their availability is essential for the well-being of a country.</li> <li>Water and energy are essential for the well-being of a country.</li> <li>Water and energy are essential for the well-being of a country.</li> </ul>	<p><b>Key messages:</b></p> <ul style="list-style-type: none"> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> </ul>

<b>Land / Agriculture</b>	<b>Water</b>
<p><b>Key messages:</b></p> <ul style="list-style-type: none"> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> </ul>	<p><b>Key messages:</b></p> <ul style="list-style-type: none"> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> </ul>



<b>Land / Agriculture</b>	<b>Ecosystems and Biodiversity</b>
<p><b>Key messages:</b></p> <ul style="list-style-type: none"> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> </ul>	<p><b>Key messages:</b></p> <ul style="list-style-type: none"> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> <li>Water is a critical element in energy production.</li> </ul>

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Figure 4: A package of nexus solutions for the NWSAS<sup>162</sup>



WATER  
CONVENTION

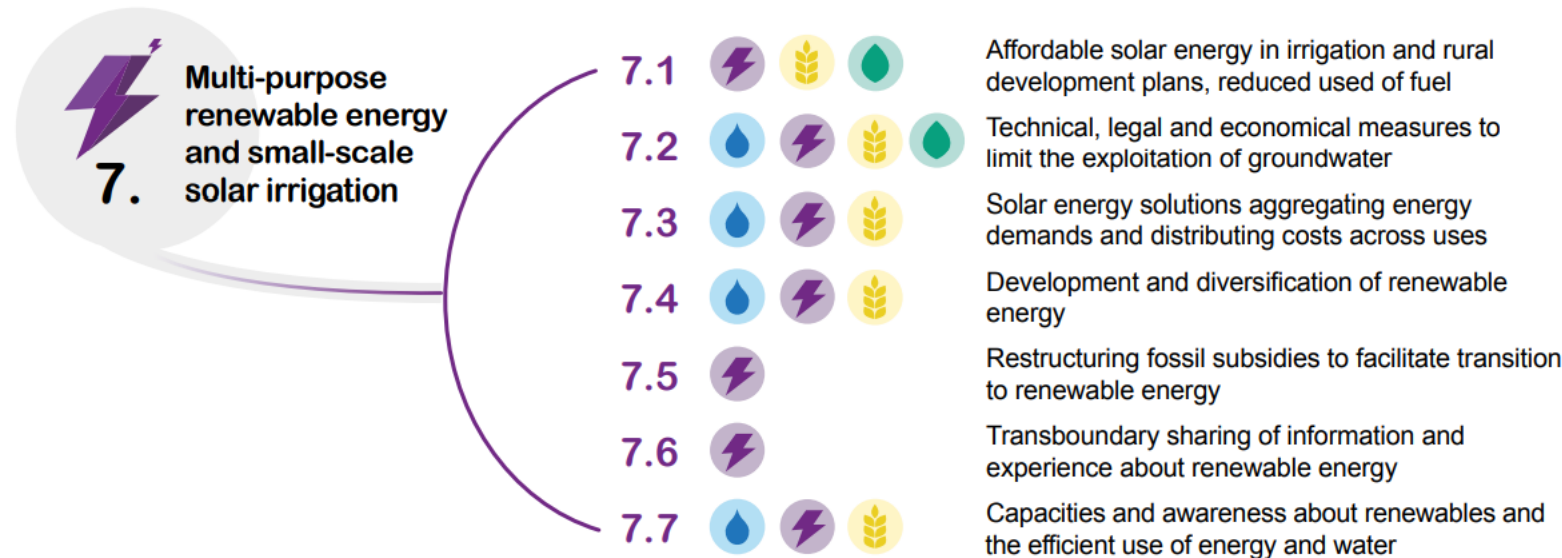


UNECE

# Nexus Solutions (NWSAS)

A package of solutions developed in an extensive cross-sectoral multi-stakeholder consultative process, best implemented in synergy, through coordinated action – to advance e.g. Sustainable Development, Climate mitigation + adaptation

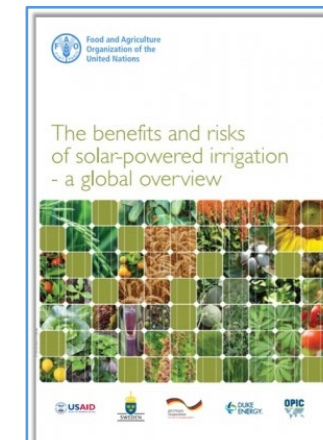
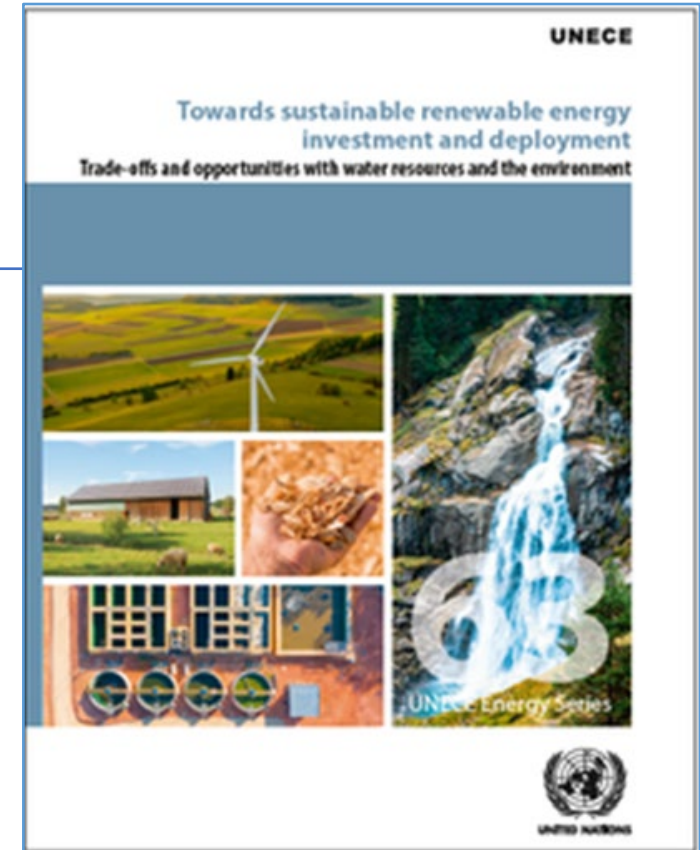
	Water	Energy	Food	Environment
Governance and international cooperation	<p>1. Enhance local water management, including revitalising participatory models in oases and enhancing the enforcement of existing laws on water conservation.</p> <p>2. Reinforce transboundary cooperation for sustainable groundwater resource management.</p>	<p>6. Enhance mechanisms for the coordination of energy development with other sectoral plans, to anticipate trade-offs and build on intersectoral synergies.</p>	<p>9. Set up agricultural policies oriented towards rational, sustainable, and productive agriculture.</p> <p>10. Valorise local products and strengthen programmes for a more balanced diet while involving young people and women in the economic and social development of the oases.</p>	<p>13. Increase awareness of the trade-offs and synergies between different sectors in public institutions.</p>
Economic and policy instruments	<p>3. Set up dedicated policies and related incentives for wastewater reuse in agriculture and urban areas.</p> <p>4. Strengthen water demand management, including through water-saving programmes.</p>	<p>7. Develop a sustainable programme for diversified, multipurpose renewable energy and sustainably upscale small-scale solar irrigation.</p>	<p>11. Promote the circular economy including agroecological practices, through ad hoc economic measures and social instruments.</p>	<p>14. Consider environmental needs in the water balance of the aquifer.</p>
Infrastructure and innovation	<p>5. Upscale the use of non-conventional water resources through desalination and wastewater and drainage treatment.</p>	<p>8. Improve the reliability of the electricity grid in rural areas, thereby enhancing the integration of renewable energies for remote and multiple uses.</p>	<p>12. Enhance innovative practices and techniques for sustainable soil and crop management and invest in their upscaling and dissemination.</p>	<p>15. Systematise environmental and social impact assessment for all new infrastructure (large and small scale).</p>





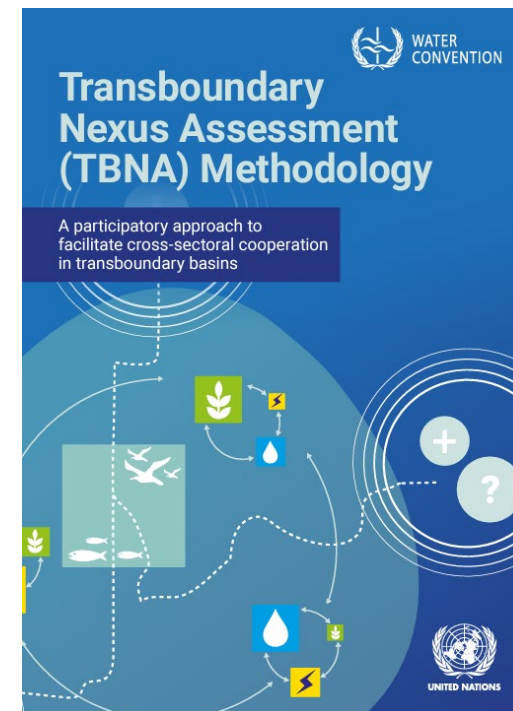
# Renewable Energy and TB Nexus

- ***“energy-related objectives can be achieved more effectively through integrated and consultative planning, in synergy with environmental and other sectoral objectives, notably those of the water and agricultural sectors”***
- “toolkit” for energy policy makers to deploy renewable energy more sustainably, exploiting synergies, considering tradeoffs in transboundary basins
- Note: similar approaches are advocated by IRENA (energy), FAO (agriculture), WWF&TNC (environment conservation)



# the TBNA Leaflet

[The Water, Energy & Food Security Resource Platform \(water-energy-food.org\)](http://water-energy-food.org)  
[Transboundary Nexus Assessment \(TBNA\) Methodology | UNECE](#)



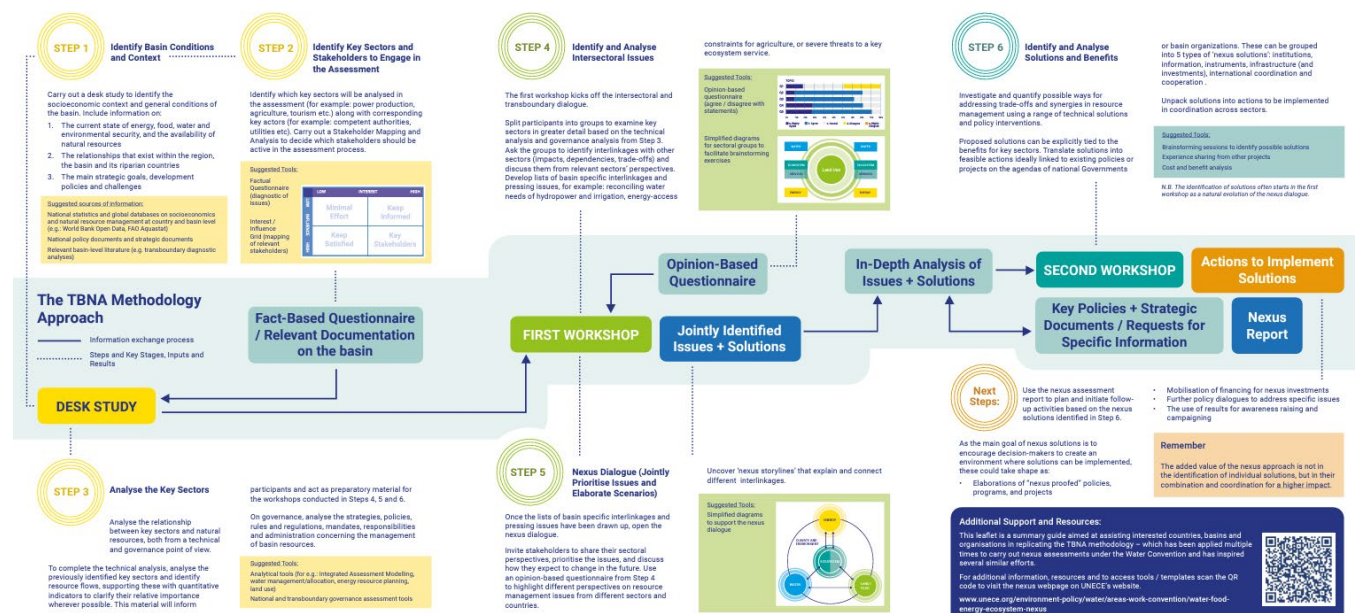
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## WEF Nexus Tool // Transboundary Nexus Assessment (TBNA) Methodology Interactive Infographic

In transboundary settings, Nexus related issues can result in painful trade-offs and friction between countries. The TBNA Methodology is a participatory approach to facilitate cross-sectoral cooperation in transboundary basins. The interactive infographic simplifies the six-step methodology.

INFOGRAPHICS TOOLS AND DATABASES NEXUS METHODOLOGY MODELLING AND ASSESSMENT

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Sustainable Water and Energy Solutions Network