

Reducing transboundary frictions through assessing intersectoral links, trade-offs and benefits: the water-food-energy-ecosystems nexus

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Securing availability, quality and manageable variability of water resources is too commonly inferred to be best achieved through national means when transboundary cooperation and intersectoral coordination may be effective strategies to that end. Water security is linked to other resource securities – notably food and energy – and environmental security, and these interlinkages need to be taken into account in planning and management for overall sustainability and conflict reduction. Assessments of the water-food-energy-ecosystem nexus in selected transboundary basins are carried out under the UNECE Water Convention to foster cooperation by identifying intersectoral synergies and measures to reduce the trade-offs.

The nexus assessment process involved developing an intersectoral, participatory methodology for transboundary settings and its systematic application to four transboundary basins.¹ The methodology involved zooming in from the general basin conditions and socioeconomic context to analysing the priority intersectoral issues. The governance analysis considered the legal and regulatory basis, organizations and policies. The technical sector analysis looked at water, energy and land resources and ecosystem services, their uses and the status of interdependencies. Impacts of climate change and socio-economic trends were also considered. Participatory, intersectoral workshops were organized to bring together sector stakeholders from the riparian countries for an identification of and dialogue on the main issues, future developments and possible solutions. On this basis, selected improvement opportunities were outlined.

Although the river basins assessed — including the Alazani/Ganykh in the Caucasus, the Syr Darya in Central Asia, the Sava and the Drina in the Balkans — demonstrate particular combinations of intersectoral issues, hydropower emerged as one common challenge, involving complex interests. For example, the Sava countries need to strike a balance between increasing energy generation, the EU climate and energy policy targets and maintaining a good status of waters. Transboundary cooperation could increase countries' energy security and decarbonize the energy system, but also increase preparedness for extreme hydrological events. For the on-going assessment of the North-West Sahara Aquifer in North Africa, different energy related issues are emerging: access to clean energy in rural areas and providing appropriate energy solutions for groundwater management while at the same encouraging rational use of water and energy.

The diverse solutions proposed for the different basins span institutions, information, instruments and infrastructure: Facilitating access to modern energy sources and energy trade to reduce effects of biomass use (Alazani/Ganykh); developing hydropower sustainably and integrating other renewable energies (Sava); and restoring and vitalizing energy market, improving efficiency in energy and water use (Syr Darya). International cooperation emerges as a key means, although its situation — trust, mandates etc. — influences the possibilities.

Water as an entry point, this nexus assessment approach invites to consider the threats and effects on water resources broadly, not just through water uses and discharges, but how sectoral policies indirectly influence the dynamics and where improved sustainability can be achieved through joint action. The results demonstrate that transboundary cooperation is needed to tackle nexus challenges, and the approach provides for doing so in a manner that is non-prescriptive and inclusive.

Integration across sectors and reconciling resource uses is challenging, but possibilities for improving coordination, consultation and consideration of different interests in specific basin contexts are concrete, and existing multi-sector structures and processes can be built on. The Water Convention's nexus approach provides a good basis for identifying cooperation opportunities, e.g. for broadening or restarting a transboundary dialogue. To inform developing cooperation or policy, trade-offs and benefits can be quantified with adequate data and tools. A nexus assessment process bears a risk that result is controversial to a sector or a country; consequently the process design and institutional framework are important.

¹ The methodology and the summaries of the first basin assessments are published in: UNECE (2015). Reconciling resource uses in transboundary basins: assessment of the water-food-energy-ecosystems nexus. United Nations, New York and Geneva. Reports and policy briefs on the basin assessments can be found at: <http://www.unece.org/env/water/publications/pub.html>