Enhancing transboundary water cooperation in the MENA region: progress, challenges & opportunities

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Introduction on the Nexus Approach and its benefits for transboundary water cooperation

findings from the 1st Nexus Roundtable in the MENA

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What is so special about the Nexus?
The concept of **nexus** is the epitome of **integration** and facilitates the proper understanding of inter-relationships of water, energy, food and ecosystems and the way in which policies and interventions in these sectors could be promoted in a coherent and coordinated way so that development is sustainable and biodiversity is protected.
The Nexus: a world of interdependencies

**Water <-> Energy:** Water plays a key role in energy production e.g. in hydroelectric plants, for cooling fossil-fuel and nuclear plants, in growing plants for biofuels. At the same time, energy is required to process and distribute water, to treat wastewater, to pump groundwater, to desalinate seawater.

**Water <-> Food:** Water is the keystone for the entire agro-food supply chain, while agricultural intensification impacts water quality.

**Food <-> Energy:** Energy is an essential input throughout the entire agro-food supply chain, from pumping to processing to transportation to refrigeration. Conflicts around land use could arise in the case of biofuels or extended solar installations.

**Healthy ecosystems** are an essential requirement for the sustainability of all the above and are negatively affected if water, energy or food are used in an unsustainable way.

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Interlinked facts & projections

Some Facts

• Agriculture accounts for 70% of global water withdrawal
• Food production and supply chain accounts for about 30% of total global energy consumption
• 75% of all industrial water withdrawals are used for energy production
• 90% of global power generation is water-intensive
• Deterioration of wetlands worldwide, in particular coastal wetlands, is reducing the capacity of ecosystems to purify water – the Mediterranean has already lost up to 50% of its wetlands since the 1900s
• An estimated 60% of the mammals birds, fishes and reptiles have been lost since 1972. A considerable part of this loss is associated directly or indirectly with deterioration of ecosystems

Some Projections

• Global water demand will increase by 55% by 2050, mainly because of growing demands from manufacturing (400% increase)
• Global food production would need to increase by 50% by 2050
• Water withdrawals for energy production could increase by 20% by 2035
Visualisation of Nexus

A system of Tension

If one pulls too hard, the Nexus will be broken

A system of Convergence

Provides equitable « entry points » for the major sectors/components of development

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It provides the “space” within which policies and interventions should be closely coordinated and optimised in order to approach sustainable development and achieve the SDGs.
Specificities of the four facets/components of the Nexus

- For Sustainable Development, **all four components should be given equal weight** to contribute to shared policies. However, their “character” is different and their “elasticity” too.

- For instance: water resources, food and traditional energy production from fossil fuel have limited elasticity as their production is linked to a particular place but there is high elasticity in their use. For instance, an area which has low agricultural production may import food (importing simultaneously “virtual” water). Energy may be transferred through networks and water could be stored and transported within some limits.

- From the four, **ecosystems are the least “elastic”**. We cannot transfer or store them and the changes/degradation of ecosystems is the least “reversible”.
For effectively addressing both SD and nexus, effective good governance is needed and proper use of the available tools.
The Nexus: an adaptive approach to evolving challenges

- Beyond the ‘water-box’
- Integrating the ‘integrated’
- Accessing, leveraging and mobilizing new financing
- Synergizing for win-win(s), including adaptation-mitigation co-benefits
The Nexus approach in a Transboundary context

The adoption of a Nexus approach in the case of Transboundary water bodies

• ensures **benefits** to various sectors in the **whole river basin area** and
• ensures that **synergies** are explored at both **inter-sectoral and cross-country levels**, improving coordination, cooperation and thus reducing conflicts and trade-offs
• mutual commitments to increasing resource efficiency and eliminating unnecessary waste of water resources benefit all riparians
• can also foster regional political cooperation and provide further economic benefits through the development of regional markets and increased & optimised trade
Effective adoption of the Nexus approach is also a promising instrument for promoting social cross-cutting issues, such as gender empowerment, stakeholder engagement, human rights and combatting poverty, by safeguarding the rights of socially and economically vulnerable groups.

These groups are affected the most by resource insecurity, as they depend the most -and spend the largest share of their income- on basic needs in the form of water, food and energy.
The application of a Nexus approach can lead to multiple and cross-sectoral benefits including:

• **Economic benefits**, such as increased mid- and long-term viability of economic activities, resilience in the face of climate change, reduced risks and associated costs from floods and droughts, greater value added in the agriculture and tourism sectors, increased efficiencies in the consumption of resources and use of infrastructure, and optimized trade and innovation.

• **Social and environmental benefits**, such as the promotion of the Sustainable Development Agenda 2030, improved public health, employment creation, improved water and sanitation services, improved conservation and the recovery of ecosystems and habitats.

• **Regional cooperation and geopolitical benefits**, such as enhanced cooperation in the management of shared resources, including the adoption of new cross-border agreements, common regulations and protocols, development of regional markets for goods, services and labour and increased cross-border investments.
1st Nexus Roundtable
in the MENA and wider Mediterranean
26-28 November 2018, Beirut, Lebanon
Take away messages:

- Nexus is not a new discipline but rather a platform to connect separate disciplines. Although different understandings exist, a flexible and dynamic approach in both design and implementation sees the Nexus as a tetrahedron, which attributes equal weight to the four elements (water, energy, food, ecosystems), and also allows paying attention to the element with priority at any given moment;

- We need to move from sectoral conflicts to a consensus / compromise on trade-offs, including the assessment and identification of the most appropriate resource for the most appropriate use in the most appropriate location. Incentives for all players are needed to work together. In the end, behavioural change is needed, from consumers to policy makers;

- The issue of virtual water and consequently that of food waste, should not be underestimated. In this regard optimisation of agricultural trade is a response in the context of a Nexus approach;
• Economic costs should be assessed for the whole supply chain e.g. including water transportation costs and those of the necessary infrastructure;

• There is a clear request for pilots, to show the value of the nexus approach in a tangible manner – need for results to make the case for upscaling and replicating;

• Explore options for a platform at regional level to support the Nexus Dialogue with the involvement of actors and observers;

The Nexus approach is essentially about moving beyond the traditional sectoral thinking and adopting an integrated approach for the water-energy-food sectors, with a view to reconciling their interests as they compete for the same scarce resources, resolving conflicts while respecting environmental constraints as well as human rights and exploring emerging opportunities.
Thank you for your kind attention

Merci pour votre attention