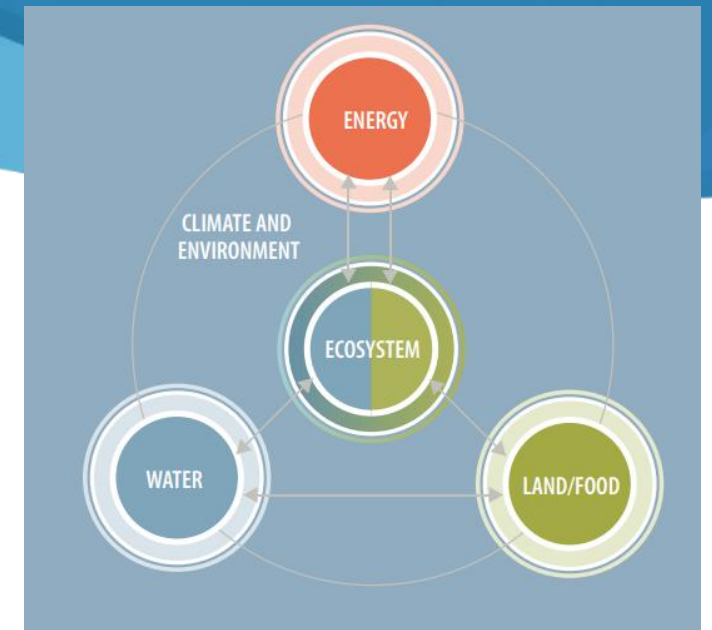


Water-food-energy-ecosystems nexus in transboundary basins

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Water Convention Secretariat



Rationale for nexus activities under the Water Convention

- **Overcoming “silos thinking”** in policy making and natural resource management:
 - reduced friction between sectors and countries
 - reduced economic losses from inefficiency
 - enhanced sustainability
- **Co-optimizing the use of existing and new infrastructure:**
 - benefits to different sectors
 - lower resource use intensity
- **“Nexus-proofing”** legal, institutional, and policy frameworks
- Motivating **information sharing and consultation in transboundary contexts**, and considering alternatives
- Highlighting the **broad benefits** of intersectoral and transboundary cooperation

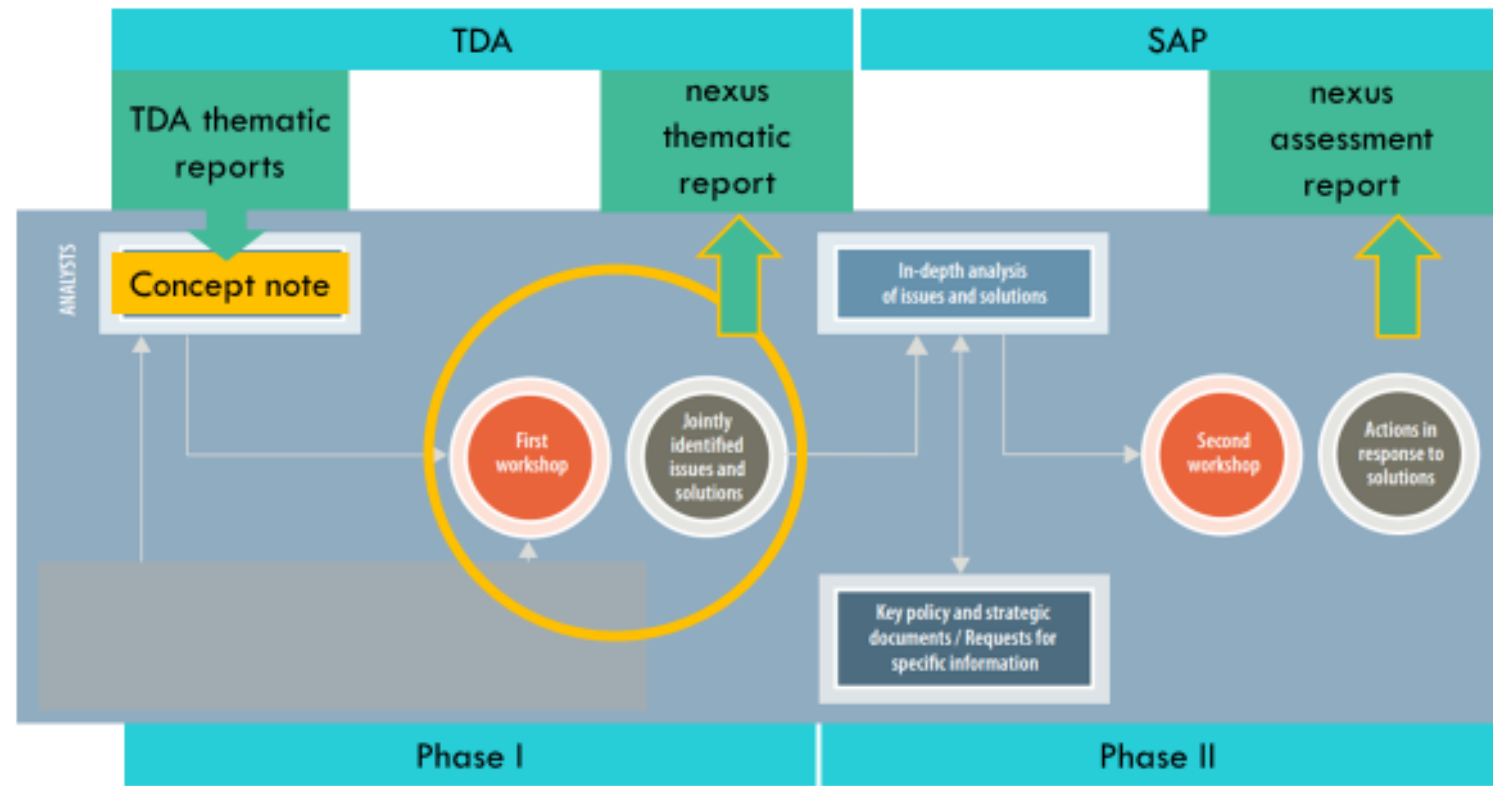


Drina River Basin

- ✓ Nexus assessment (flow regulation, rural development, water quality, transboundary cooperation);
- ✓ Follow up project (sustainable energy, sediment management, e-flows, monitoring & information exchange) being completed (financed by Italy)
- **High-level workshop “Action across sectors and borders for sustainable future of the Drina River Basin” (29 October 2019, Belgrade)**
- Ahead: as ADA financed work with the GWP-Mediterranean
 - Renewable energy (RE) focused analysis of sustainable RE developments in the basin (modelling), looking at the implications for hydropower dynamics in the basin (costs&benefits, hydro/non-hydro competitiveness). To be accompanied by multi-stakeholder dialogue.

Drin River Basin

- ✓ Phase I: Qualitative analysis of priority themes (hydro and floods, biomass and forestry, agriculture and trade)
- ❖ Adding value to GEF TDA-SAP process



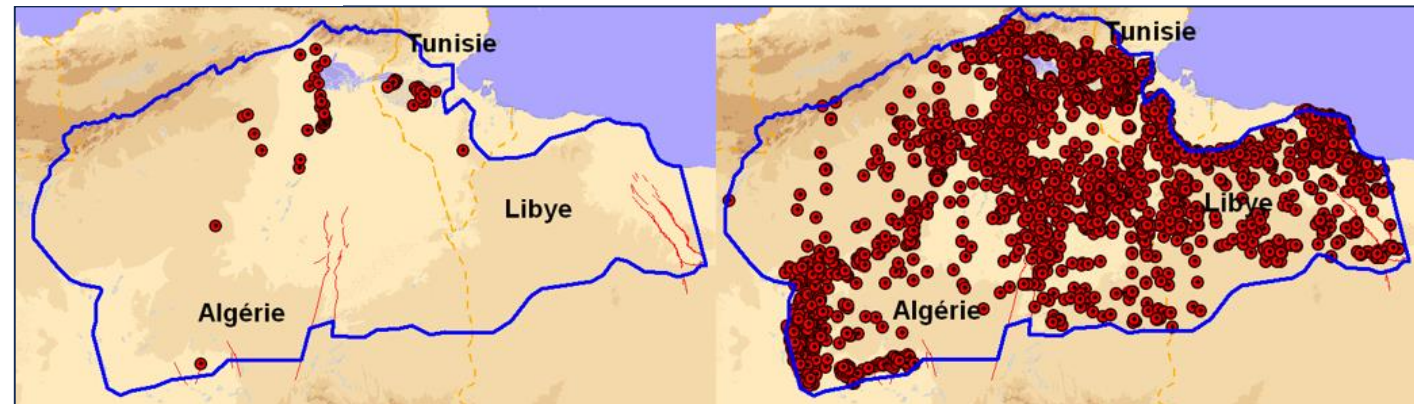
- Phase II: Quantification of key interlinkages
- Energy-Water modelling (tb cooperation: hydropower and floods)
- Opportunities in the biomass value chain and multi-sectoral benefits
- Nexus “Assessment Report” part of SAP implementation (SAP formal adoption expected for December 2019)

North West Saharan Aquifer System



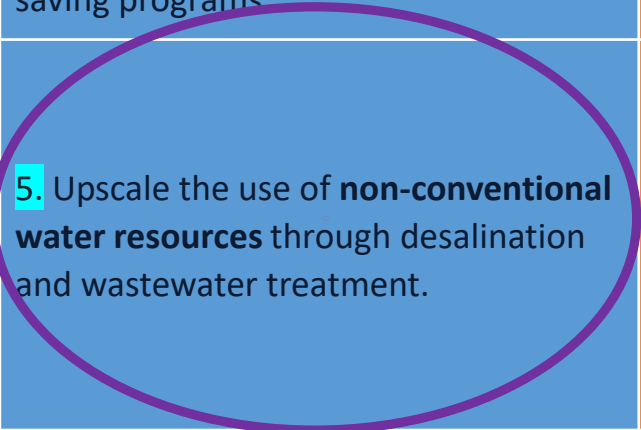
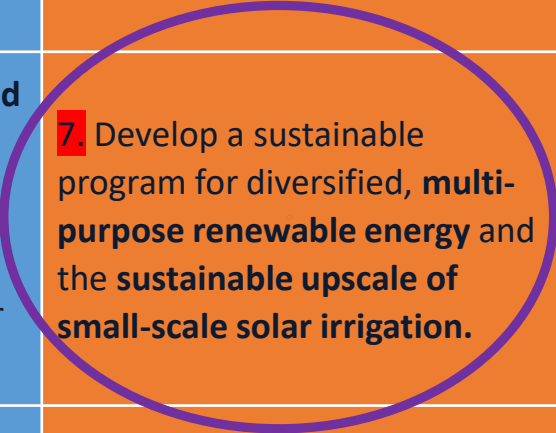
Ecosystems and Biodiversity	
<p>Drivers/pressures</p> <ul style="list-style-type: none"> The impact of new digital services and modernisation (especially for a water supply) has led to the increase of water demand compared to the traditional uses. Expansion of urbanised areas, increase of water consumption and the construction of large dams. Over-exploitation of aquifers due to the groundwater table being lower than the natural level. 	<p>Impacts due to changes in water quality</p> <ul style="list-style-type: none"> Reduction of diversity in the aquatic ecosystem. Reduction of the number of species and the abundance of the most sensitive species. Reduction of the number of species and the abundance of the most sensitive species. Reduction of the number of species and the abundance of the most sensitive species.
<p>Water</p> <p>Key impact areas/pressures of concern</p> <ul style="list-style-type: none"> The impact of new digital services and modernisation (especially for a water supply) has led to the increase of water demand compared to the traditional uses. Expansion of urbanised areas, increase of water consumption and the construction of large dams. Over-exploitation of aquifers due to the groundwater table being lower than the natural level. 	<p>Impacts due to changes in water quality</p> <ul style="list-style-type: none"> Reduction of diversity in the aquatic ecosystem. Reduction of the number of species and the abundance of the most sensitive species. Reduction of the number of species and the abundance of the most sensitive species. Reduction of the number of species and the abundance of the most sensitive species.
<p>Dependence of the biodiversity due to specific characteristics</p> <ul style="list-style-type: none"> The biodiversity of the aquifer system is highly dependent on the quality of the water. The biodiversity of the aquifer system is highly dependent on the quality of the water. The biodiversity of the aquifer system is highly dependent on the quality of the water. 	<p>Impacts due to changes in water quality</p> <ul style="list-style-type: none"> Reduction of diversity in the aquatic ecosystem. Reduction of the number of species and the abundance of the most sensitive species. Reduction of the number of species and the abundance of the most sensitive species. Reduction of the number of species and the abundance of the most sensitive species.
Ecosystems and Biodiversity	

- National Consultations: prioritization, implementation, past experiences
- Nexus Assessment Report to be ready for countries comments Nov-Dec 2019
- One package of synergetic solutions for the NWSAS: implementable and high-priority



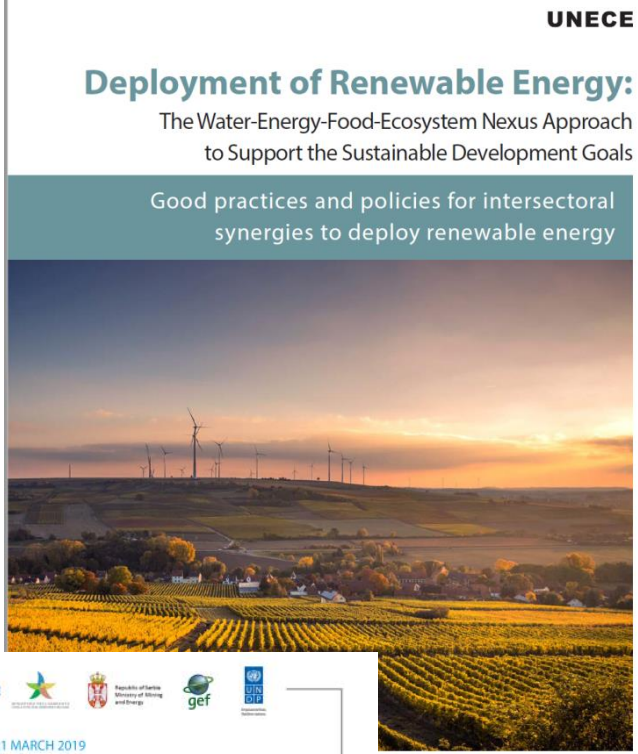
	Water	Energy	Agriculture	Environment
Governance & international cooperation	<p>1. Enhance local water management including by: revitalising participatory models in oasis and enhancing the enforcement of existing laws on water.</p> <p>2. Reinforce transboundary cooperation for sustainable groundwater resource management.</p>	<p>6. Enhance mechanisms for the coordination of energy development with other sectoral plans, to anticipate tradeoffs and build on intersectoral synergies.</p>	<p>9. Set up agricultural policies oriented toward reasonable, sustainable and productive agriculture.</p> <p>10. Valorize local products and strengthen programs for a more balanced diet while involving young people and women in 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 & Policy Instruments	<p>3. Set up dedicated policies and related incentives for wastewater reuse in agriculture and urban areas.</p> <p>4. Strengthening water demand management, including through water saving programs.</p>	<p>7. Develop a sustainable program for diversified, multi-purpose renewable energy and the sustainable upscale of small-scale solar irrigation.</p>	<p>11. Promote the circular economy including agroecological practices, by means of ad-hoc economic measures and social instrument.</p>	<p>14. Upgrade inter-sectoral cooperation based on a detailed water balance of the aquifer that includes sectoral demands as well as environmental needs.</p>
Infrastructure & Innovation	<p>5. Upscale the use of non-conventional water resources through desalination and wastewater treatment.</p>	<p>8. Improve the reliability of the electricity grid in the rural area, thereby enhancing the integration of renewables 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. Systematize environmental and social impact assessment for all new infrastructure (large and small scale).</p>

Synergy
e.g.



UNECE work on Nexus & Renewable Energy

- Coop. between Environment and Sustainable Energy Divisions
- Policy Brief on RE, nexus and SDGs (UNECE, 2017)
- RE “Hard Talks” linking to actual energy policy questions and orienting future investment (Drina follow-up)
 - ✓ Bosnia and Herzegovina 2018
 - ✓ Serbia 2019
- Sustainable RE Deployment – a tool for Policy Makers (UNECE, 2019 - upcoming)
- Why? All RE has transboundary impact, and hydro competitiveness needs to be better understood



UNECE

Deployment of Renewable Energy:
The Water-Energy-Food-Ecosystem Nexus Approach
to Support the Sustainable Development Goals

Good practices and policies for intersectoral synergies to deploy renewable energy

21 MARCH 2019
Final Conference
UNDP/GEF Project:
Reducing Barriers to Accelerate the
Development of Biomass Markets in Serbia

21 - 22 MARCH 2019
New Possibilities for
Developing Renewable Energy
Sustainably in Serbia
in the framework of the Drina Nexus Follow-up Project

HARDTALK

UNECE Sustainable RE Deployment – a tool for Policy Makers

Strategic Planning

- Sectoral targets, common objectives on RE
- RES Potential mapping for optimal siting (all technologies, TB level)

Sustainable RE Policies

- Identification and assessment of cross-sectoral synergies and trade-offs
- A checklist for guiding new policy / improving existing policy (e.g. MEAs)

Sustainable RE Projects

- Maximization of benefits (incl. social and environmental)
- Possibilities for co-financing (across sectors, PPP..)

Multi-stakeholder dialogue and Public Participation

Nexus solutions and investments in transboundary basins – Concept Note

- Demonstrating, through concrete examples, how the nexus approach translates into “**nexus solutions**” and “**nexus investments**” that directly or indirectly provide **transboundary** benefits
 - stocktaking solutions & investments from UNECE, partners, countries
- Indicating how to realize nexus solutions and investments through **cooperation, consultation, and exploration of co-financing opportunities** (across sectors and countries)
 - examples and perspectives from IFIs
- Highlighting the value and potential of **cooperation frameworks and value of cross-border coordination** to promote nexus solutions and investments in **transboundary** contexts
 - UNECE Multilateral Environmental Agreements, RBOs, and bilateral/multilateral arrangements

Invitation to WG participants

- Share **comments and inputs to the concept of the “renewable- energy nexus tool”** for renewable energy deployment by 15 November 2019, and help identify opportunities to test and apply the tool to policies and projects;
- **Contribute to the “nexus solution synthesis” with experience** from countries and basins -> draft to be ready for discussion at the 6th meeting of the Task Force on the Water-Food-Energy-Ecosystems Nexus (October 2020).
- consider **further applications of the methodology** for assessment of the water-food-energy-ecosystems nexus



Thank you!