Assessing the water-food-energy-ecosystem nexus in transboundary basins
Water, food and energy are inextricably interlinked & dependent on the ecosystems

The 3 dimensions of sustainable development

**The social dimension**
Improve access to basic provisioning and water, energy and food securities

**The economic dimension**
Creating more wealth while using less resource input

**The ecological dimension**
Investing to sustain ecosystems and ecosystem services

BMU, Germany
Background to the on-going nexus assessment under the UNECE Water Convention

- Among the obligations under the Water Convention (1992):
  - Carry out at regular intervals joint or coordinated assessments of the conditions of transboundary waters and the effectiveness of measures taken
- In 2003 the Parties decided on regular regional assessments; First Assessment in 2007, Second Assessment in 2011
- Latest assessment: Frictions between sectors about water use in many basins; weak policy integration and coherence
Links: between national and transboundary levels, with NPDs

- Shortcomings in inter-sectoral coordination a major challenge both on the national as well as transboundary levels, both in developing and developed countries.
- The transboundary assessment under the UNECE Water Convention has parallels with the NPD process through which a cross-sectoral and stakeholder approach is also being implemented.
- Expected that additional benefits and opportunities related to inter-sectoral coordination will also emerge at national level in the transboundary assessment process.
- The approach and the results can inspire reflecting further on inter-sectoral work in the EECCA Convention of the Protection and Use of Transboundary Watercourses and International Lakes.
Assessment of the Water-Food-Energy-Ecosystems Nexus under the UNECE Water Convention: key facts

- Part of the Convention’s Work Programme 2013-2015
- Work overseen and guided by the Task Force on the Water-Food-Energy-Ecosystems Nexus
- Some 6-8 basins to be assessed, responding to requests – pan-Europe, Africa, Asia; different nexus settings, climate, resource scarcity etc.
- Key partners: Finland (lead)/Finnish Environment Institute SYKE, Royal Institute of Technology (Stockholm), FAO
- Methodology developed, aiming at a balanced approach
  - piloted on the Alazani/Ganikh (Georgia and Azerbaijan); basin workshop in November 2013
  - Assessment of the Sava on-going; workshop held in March 2014
Substantive elements of the assessment

1. A survey with a factual **questionnaire** for a preliminary identification of the main pressures and hotspots

2. A **desk review** of the available documentation

3. A **participatory workshop** at transboundary level, with the economic sectors and other stakeholders to identify the inter-sectoral linkages and trade-offs & possible synergic actions

4. **Indicator based analysis.** Limited quantification. An institutional analysis

5. Preparation of **nexus assessment report** with the analysis i.e. Sectoral characteristics including development options; Inter-sectoral linkages and priority issues; **Qualitative future scenarios** (trends, climate change); **Potential solutions** identified, policy **recommendations**

=> basis for a later quantitative trade-off analysis (depending on the countries interest & availability of donor funding)
Approach in phases

**Phase A**
- Methodology definition
  - Consultative process among the countries, experts & partners
  - Definition of a clear framework for the analysis of all basins
  - Questionnaires definition and key indicators

**Phase B (Basin-Specific)**
- Diagnostic phase
  - Desk review of documentation:
    - Institutional analysis
    - Natural resources assessment
  - Preliminary identification of hotspots and pressures

- Workshop
  - Consultation with national/basin authorities, sectors and communities:
    - Development strategies and future trends
    - Resources constraints, trade-offs and inefficiencies
    - Potential improvements and synergies

- Nexus Assessment
  - Qualitative/quantitative assessment
    - Definition of appropriate indicators
    - Analysis of the most relevant interlinkages
    - Review by stakeholders

**Phase C**
- Synthesis & conclusions
  - Summary of the main findings and lessons learned from each basin
  - Identification of benefits of nexus approach to transboundary cooperation
Draft outline of the basin assessments

- Geography of the basin
- Institutional assessment
- Brief overview of the sectors and resources of riparian countries
- Economic relevance of the basin
- National policies
- Selected transboundary issues with intersectoral impacts
- Possible intersectoral transboundary solutions
- Conclusions and recommendations
- Annexes: Comparative review of countries based on World Development Indicators, Basin indicators
Defining Nexus Indicators:

- National level indicators (for riparian countries)
- Basin level indicators
- Specific indicators around the identified issues

Some examples of how the indicators are interlinked:

<table>
<thead>
<tr>
<th>WATER</th>
<th>FOOD &amp; LAND USE</th>
<th>ENERGY</th>
<th>ENVIRONMENT &amp; BIODIVERSITY</th>
<th>CLIMATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Sectoral water demands</td>
<td>- Fertilizer and pumping requirements?</td>
<td>- Energy self-sufficiency?</td>
<td>- Endangered species?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Biofuel policies?</td>
<td>- Energy demand for agriculture?</td>
<td>- Ecosystem services affected?</td>
<td></td>
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</tbody>
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Alazani/Ganikh pilot basin

- lessons about application of the methodology, refining the approach — thanks to Azerbaijan & Georgia, partner UNDP-GEF Kura project
- Energy policy’s impact on the water regime, opportunities from agriculture sector’s development etc.
- Challenges: combining local & international knowledge, overview vs. specificity, basin data, participation...
- Preparation & results could inform parallel processes: national IWRM plans, GEF SAP, developing bilateral cooperation
- Follow up?: In NPDs, continuation of the GEF project, EU Association related work, Azerbaijan’s water sector reform, Georgian water legislation and energy strategy?
Sava Basin

- Basin workshop held in Zagreb 4-6 March 2014 with ISRBC; with some 50 representatives of the ministries and various interest groups from Bosnia and Herzegovina, Croatia, Montenegro, Serbia and Slovenia
- need for irrigation & investments in energy will grow, extreme weather events pose risks and may damage infrastructure, investments needed in land reclamation strategies
- Draft assessment being developed, some development scenarios modelled and quantified the framework of JRC Danube Water Nexus project
- contributing to further policy integration and dialogue with the key sectoral stakeholders; informs 2\textsuperscript{nd} cycle RBMP preparation
Syr Darya

- Nomination of national focal points has been requested
- Cooperation with GWP in organizing the workshop and in the process
- Workshop 18-20 November 2014 (tentatively)
- Builds on & cross-fertilizes with e.g. FAO’s Aral Sea scenario work and IUCN-IWA nexus infrastructure project on the Amu Darya
- Discussion of preliminary results at NPD Steering Committee meetings
Benefits of the assessment under the Convention

- **Improved knowledge base** about linkages between sectors to support decision-making at national, basin & transboundary levels, analysis/quantification of selected aspects; gaps
- **Joint identification of opportunities** for benefits and of solutions for capitalizing on the synergies, addressing trade-offs and reconciling different resource uses;
- **Promotion of dialogue between the different sectors** and the riparian countries at the basin level; bring together authorities, private sector, civil society
- **Exchange** of good practices
- **Capacity building**: workshops, exchanges, self-assessment, knowledge mobilization in the process
- Serves to inform/increase awareness, guide & stimulate action
Way ahead

- Methodology provides an overall frame that adapts to the setting and specific nexus issues – could be replicated
- Expected forthcoming assessments: NW Sahara Aquifer, Niger...
- Basin assessments January 2014 - April 2015; A general stock-taking report for the 7th Meeting of the Parties in November 2015
- Nexus Task Force meets next 8-9 September 2014 to review the work & plans; 3rd meeting in April 2015 to endorse the contents
- Processes for discussing the findings in each basin to be defined (e.g. the NPDs, where appropriate); cooperation in disseminating individual assessments? (subject to opportunities and resources)