# A NEXUS APPROACH TO TRANSBOUNDARY COOPERATION

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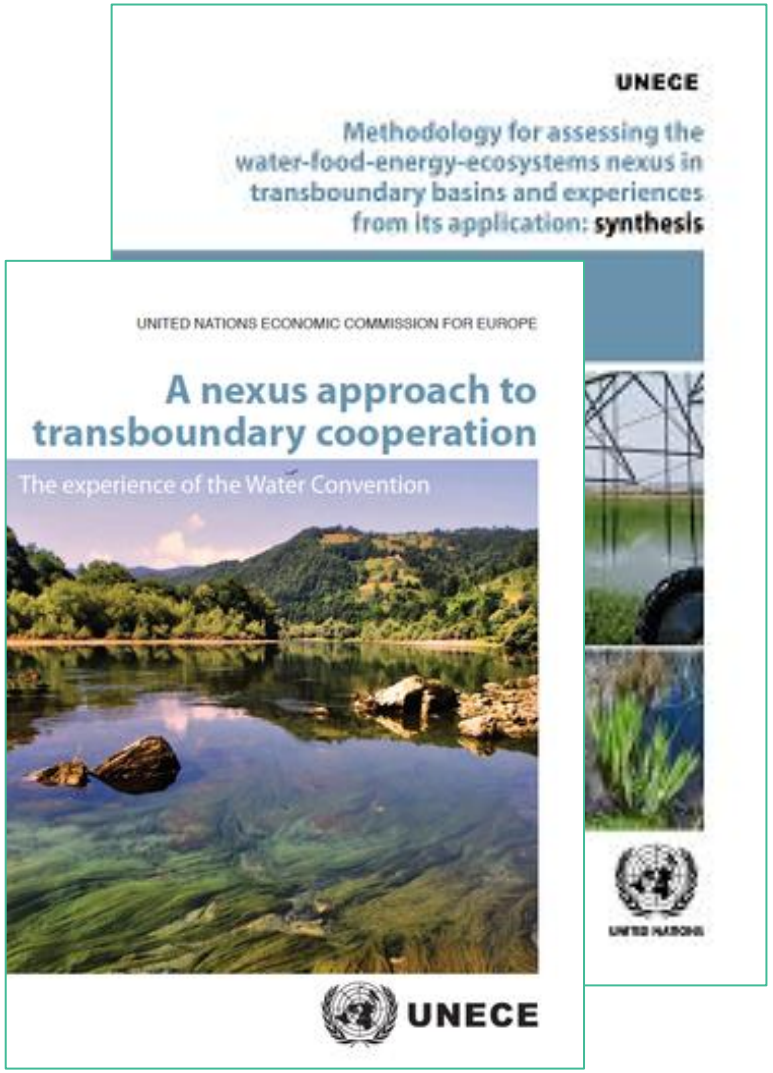
**Water Convention Secretariat**
**UNECE**

**Regional workshop *Enhancing transboundary water cooperation in the MENA region - progress, challenges and opportunities***
**Beirut, 3-4 March 2020**

# NEXUS WORK UNDER THE WATER CONVENTION (1)

- **Capacity building and exchange of experiences** through **WEFE Nexus Task Force** - a global platform for WEFE Nexus in transboundary basins:
  - global stocktaking workshop on WEFE Nexus (2016)
  - 5 meetings of the WEFE Nexus Task Force + 6th upcoming (22-23 October 2020)
- **Transboundary Basin Nexus Assessment (TBNA) Methodology** – developed *ad-hoc* for transboundary basins
  - applicable to river basins and aquifers
  - 6 basins: 4 assessments completed, 2 ongoing and 1 follow-up
  - flexible and adaptable, highly participatory



# NEXUS WORK UNDER THE WATER CONVENTION (2)

- **Nexus Solutions and Investments –** stocktaking experience from transboundary/regional dialogues around the world

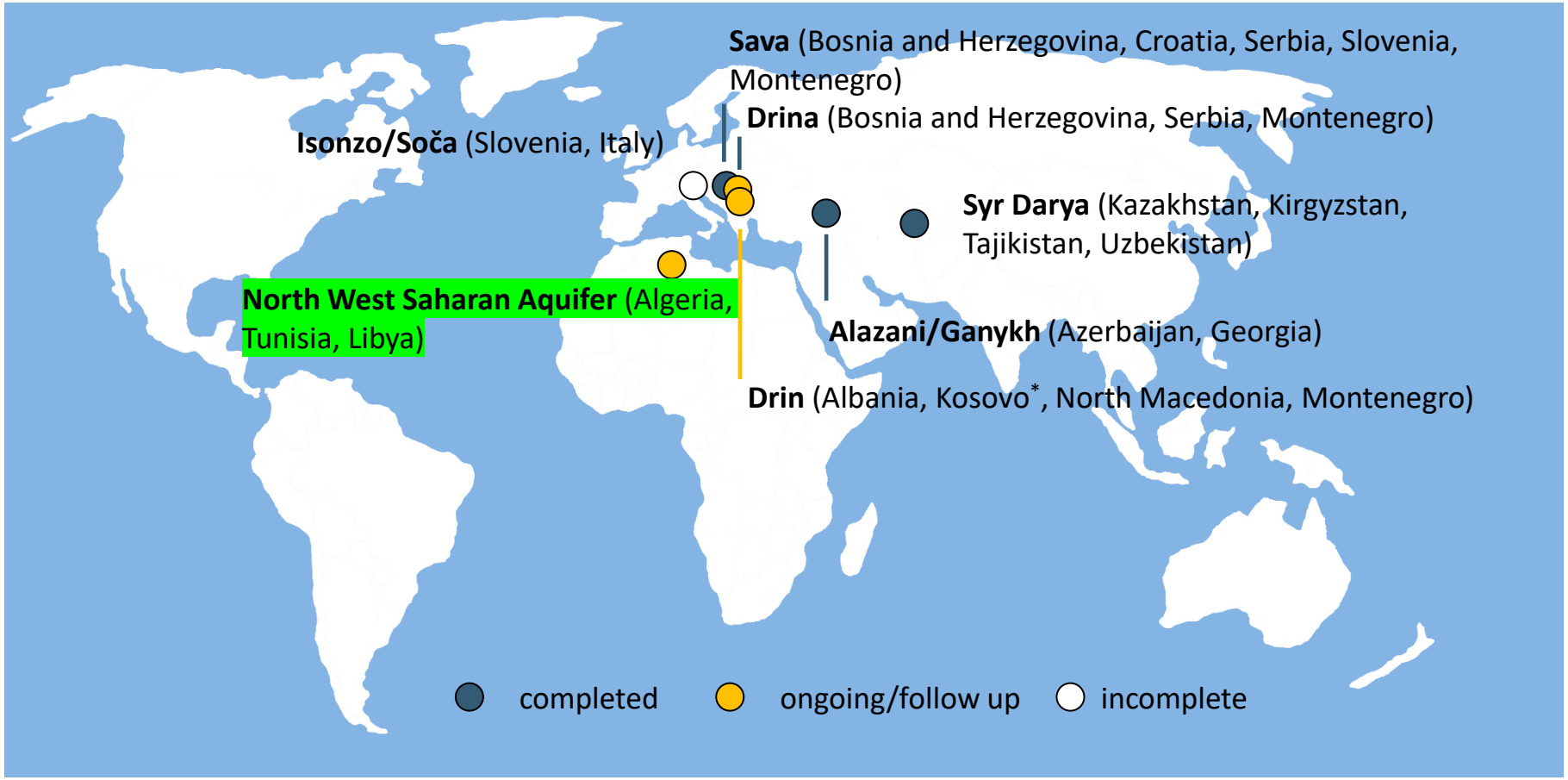
- Report under preparation, collection of examples - draft to be presented at upcoming Task Force meeting.

- Nexus solutions provide co-benefits. Options for co-investing?

- **Special focus on Renewable Energy** in water, agriculture, and environment sectors: avoiding trade-offs and exploiting synergies

- Tool-kit for Policy Makers for:
  - Strategic RE Planning
  - Sustainable RE Policy
  - Sustainable RE Projects

# PAN-EUROPEAN AND MENA REGIONS (SO FAR)

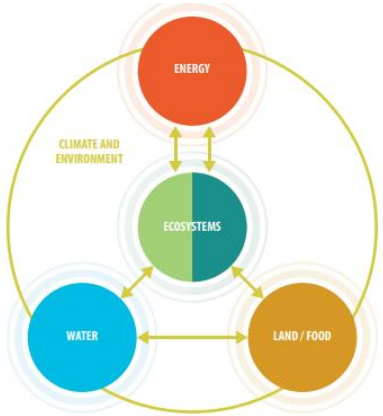



* United Nations administered territory under the UN Security Council Resolution 1244 (1999)

# A PARTICIPATORY METHODOLOGY IN 6 STEPS

Mostly diagnostic (desk-based) → Active engagement (workshops)

1. Socioeconomic context
2. Key sectors, key actors
3. Analysis of key sectors
4. Intersectoral issues
5. Nexus dialogue
6. Solutions and benefits

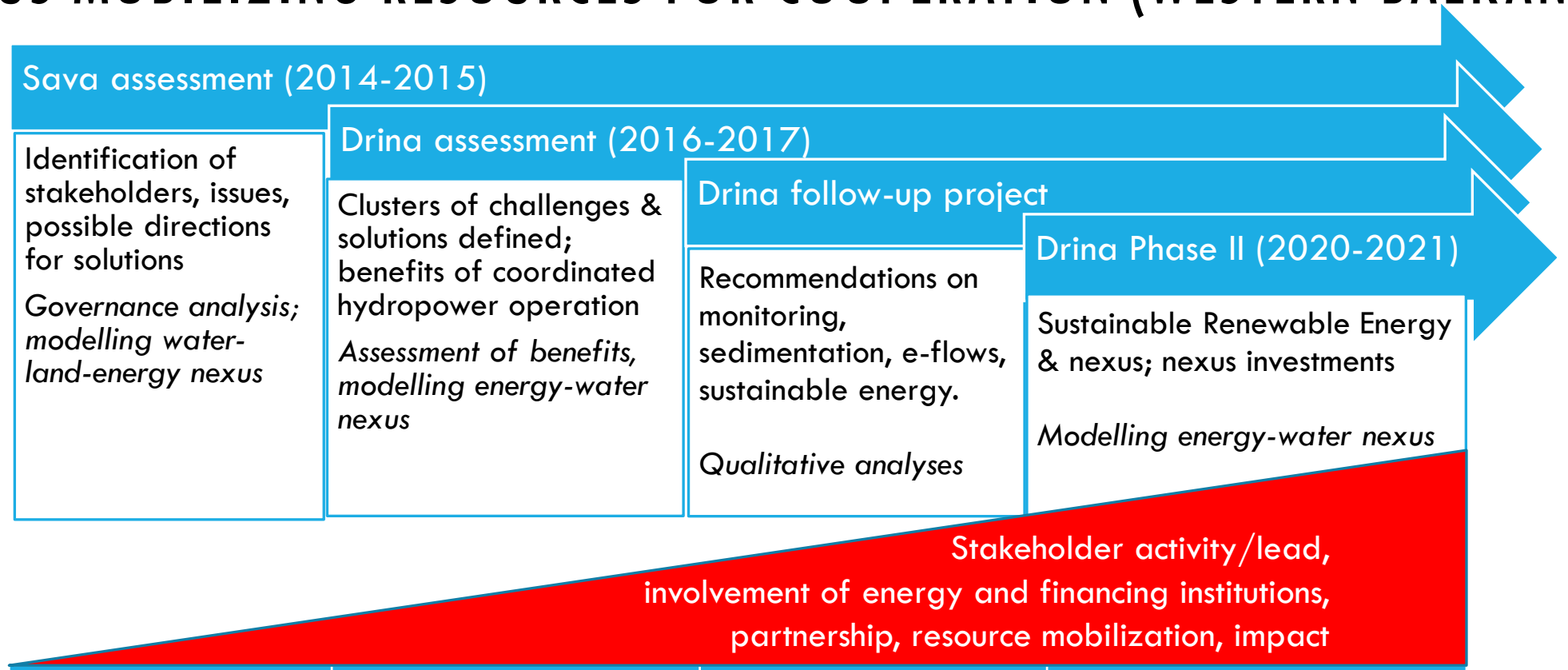



| | Water | Energy | Agriculture | Environment |
|---|---|---|---|---|
| Governance & international cooperation | 1. Enhance **local water management** including by: revitalising **participatory** models in oasis and enhancing the enforcement of **existing laws** on water.<br>2. Reinforce **transboundary cooperation** for sustainable groundwater resource management. | 6. Enhance mechanisms for the **coordination of energy development with other sectoral plans**, to anticipate tradeoffs and build on intersectoral synergies. | 9. **Set up agricultural policies** oriented toward **reasonable, sustainable and productive agriculture.**<br>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. | 13. Increase **awareness of the trade-offs and synergies** between different sectors in public institutions. |
| Economic & Policy Instruments | 3. Set up dedicated **policies and related incentives** for **wastewater reuse** in agriculture and urban areas.<br>4. Strengthening **water demand management**, including through water saving programs. | 7. Develop a sustainable program for diversified, **multi-purpose renewable energy** and the **sustainable upscale of small-scale solar irrigation.** | 11. Promote the **circular economy** including **agroecological practices,** by means of ad-hoc **economic measures and social instrument.** | 14. Upgrade **inter-sectoral cooperation** based on a detailed **water balance of the aquifer** that includes sectoral demands as well as environmental needs. |
| Infrastructure & Innovation | 5. Upscale the use of **non-conventional water resources** through desalination and wastewater treatment. | 8. Improve the reliability of the **electricity grid in the rural area,** thereby enhancing the integration of renewables for remote and multiple uses. | 12. Enhance **innovative practices and techniques for sustainable soil and crop management** and invest in their upscaling and dissemination. | 15. Systematize **environmental and social impact assessment** for all new **infrastructure** (large and small scale). |

# PRACTICALLY, THE IMPACT OF NEXUS ASSESSMENTS

- Strengthening, broadening, revisiting **transboundary cooperation**
- Facilitating **inter-sectoral dialogue**
- **Policy insights** from modeling on key questions e.g. **optimization of resource** (land, water/dams for food and energy production) and **infrastructure** (hydro, flood & droughts) in long-term planning
- Joint identification of **cross-sectoral and transboundary nexus solutions** e.g. synergetic RE projects, sustainable rural development, etc. and discussing necessary **investments**

# NEXUS MOBILIZING RESOURCES FOR COOPERATION (WESTERN BALKANS)




| KTH, ISRBC, JRC | Italy, ISRBC, GERE, KTH, GEF, World Bank | Italy, UNECE GERE | GWP, ADA, World Bank, ISBRC |
|---|---|---|---|
| Network forming, sectors meeting & exchanging | Debate with utilities about the benefits; Forums on Energy | High-level Workshop (Ministers and IFIs); UNECE Publication on Sustainable RES & Nexus | Regional level nexus initiative for sharing experience in South East Europe (-> Drin) |

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Synergy e.g.

# OUR EXPERIENCEHOW DO COUNTRIES PRACTICALLY IMPLEMENT SOLUTIONS?

Through **existing platforms** and cross-sectoral **policy frameworks**

- transboundary: ISRBC (Sava and Drina); NWSAS Consultation Mechanism
- cross-sectoral: sustainable development, NDCs, adaptation plans, environmental regulation
- revision/expansion of organizational mandates
- consider and compare objectives and planning cycles

Applying/developing **policy instruments** such as SEA (policy) and EIA (projects), **specific guidelines** (e.g. sustainable hydropower), **economic instruments** (e.g. cross-subsidization)

Embracing "**nexus thinking**" in cooperation and policy development (new platforms, instruments, etc?) as well as in sustainable/synergetic project development and green financing

Thank you!

# NEXUS SOLUTIONS AND INVESTMENTS IN TRANSBOUNDARY BASINS (CONCEPT)

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

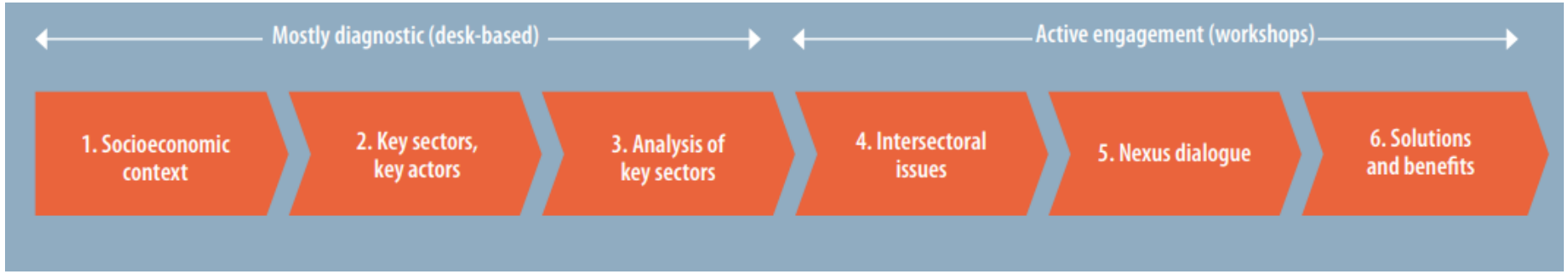
Indicating how to realize nexus solutions and investments through **cooperation, consultation, and exploration of co-financing opportunities** (across sectors and countries)

- 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

# METHODOLOGY 6 STEPS




| | | | | | |
|---|---|---|---|---|---|
| Participatory methods | | ✓ Factual questionnaire<br>✓ Stakeholder mapping | ✓ Opinion questionnaire<br>✓ Sectoral presentations<br>✓ Brainstorming exercise | ✓ Nexus dialogue | ✓ Assessment of benefits |
| Information and tools | ✓ Nexus indicators | | ✓ Data to quantify interlinkages<br>✓ Opinion indicators | | ✓ Modelling using fit-for-purpose toolkits |
| Outputs | | ✓ Desk study:<br>✓ Sectors, resources and governance analysis | | | ✓ Nexus report of the basin:<br>✓ nexus issues, solutions and benefits |

five I's

| TYPE OF NEXUS SOLUTION | EXAMPLES |
|---|---|
| **Institutions**<br>Spanning from institutional reforms to improved institutional cooperation and governance culture. | • Clarify roles and responsibilities of organizations.<br>• Set up or improve existing mechanisms for coordinating across sectors at the national and/or the transboundary level.<br>• Ensure coherence between sectoral strategies. |
| **Information**<br>Improving collection, accessibility and communication of data, information and knowledge related to basin resources and their dynamics. | • Improve monitoring of resource availability, quality, uses etc., as well as forecasting and prediction.<br>• Identify policy implementation barriers.<br>• Introduce and improve standards (e.g. for efficiency) and develop and apply integrated planning principles and guidelines.<br>• Share data across borders and with different users. |
| **Instruments**<br>Defining and implementing various instruments to address trade-offs and promote synergies in the management of natural resources and environmental protection. | • Policy instruments, targets and plans for key sectors<br>• Economic instruments to provide incentives for rational and sustainable resource use, including tariffs by consumption and fees<br>• Legal instruments such as agreements and protocols |
| **Infrastructure (and investments)**<br>Planning (i.e. designing, siting, financing) and modernizing or modifying existing infrastructure. | • Direct investments towards multi-purpose and environmentally sound infrastructure projects (both "grey" and "green").<br>• Improve resource efficiency in transmission and conveyance networks on the user side as well, taking into account indirect and cross-sectoral impacts.<br>• Account for different needs (including environmental needs) in optimizing the use of existing structures. |
| **International coordination and cooperation**<br>The most cross-cutting category: solutions of this type are aimed at broadening the scope of transboundary cooperation and identifying common priorities. | • Improve basin-wide monitoring, data verification and exchange, as well as knowledge-sharing.<br>• Define areas of common interest for regional development and potential complementarities of resources and between policy goals.<br>• Facilitate trade to improve water, energy or food security; optimize the use of resources and infrastructure at the regional level.<br>• Develop common rules and joint guidelines for key sectors. |

| | ALAZANI/GANYKH (2013–2015) | SAVA (2014–2015) | SYR DARYA (2014–2016) | ISONZO/SOČA (2015) | DRINA (2016–2017) | NORTH-WEST SAHARA AQUIFER SYSTEM (2017–2019) | DRIN (2018-2020) |
|---|---|---|---|---|---|---|---|
| **Basin size** | 11,700 km² | 97,700 km² | 410,000 km² | 3,400 km² | 20,320 km² | 1,000,000 km² | Work in progress |
| **River length** | 391 km | 945 km | 3,019 km | 140 km | 346 km | --- | |
| **Countries sharing** | Azerbaijan, Georgia | Bosnia and Herzegovina, Croatia, Montenegro, Serbia, Slovenia, (Albania) | Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan | Italy, Slovenia | Bosnia and Herzegovina, Montenegro, Serbia, (Albania) | Algeria, Libya, Tunisia, | |
| **Climate** | Warm, temperate | Warm, temperate | Arid/semi-arid | Mediterranean-influenced, partly humid | Warm, temperate | Arid/hyper-arid | |
| **Main nexus storylines** | • Lack of access to affordable energy aggravates deforestation, which increases the exposure to flash floods, erosion and landslides.<br>• A poor state and inadequate maintenance of irrigation systems aggravates the impact of flash floods on the loss of fertile soil and damage to settlements. | • Energy production in the countries depends on water availability in the Sava River Basin.<br>• Targets for renewables and climate mitigation push countries to develop more hydropower.<br>• There are environmental concerns about dam construction in environmentally sensitive areas. | • Energy and food insecurity are drivers for conflicting seasonal water uses and make countries prioritize self-sufficiency over cooperation.<br>• This aggravates the current situation of suboptimal use of resources. | • Diverse ecosystem services need protection.<br>• Hydropeaking affects biodiversity and water availability for irrigation. Irrigation is reduced with water-efficient technology.<br>• Groundwater abstraction for irrigation needs energy and may cause seawater intrusion. | • Water-flow regulation for power generation is suboptimal and has impacts on flood and drought risks.<br>• Application of environmental flows is challenging.<br>• Rural development is hampered by low agricultural productivity and a lack of infrastructure.<br>• Water quality is declining because pressures go unchecked (solid waste, wastewater). | • Heavy and unsustainable use of the aquifer.<br>• Heavy use of irrigation with high losses.<br>• Water and soil salinization from irrigation and inadequate management of drainage.<br>• Water management (pumping from higher depth, treatment etc.) requires sustainable energy solutions. | |

# THE WATER CONVENTION

**Supports transboundary cooperation** through:


A legal framework

An institutional framework

Projects on the ground

**Based on 3 principles:**

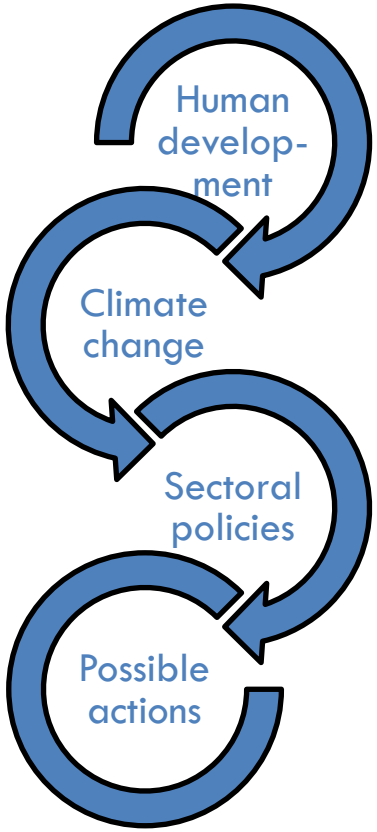
Prevent, control, and reduce transboundary impact

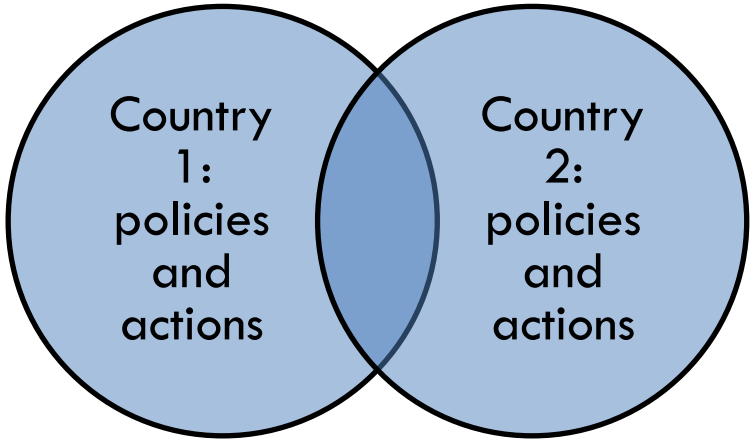
Ensure reasonable and equitable use of water resources

Obligation of Parties to cooperate through agreements and joint bodies

**=> Objective: sustainable management of water resources. Fosters IWRM implementation**

# THE TRANSBOUNDARY NEXUS



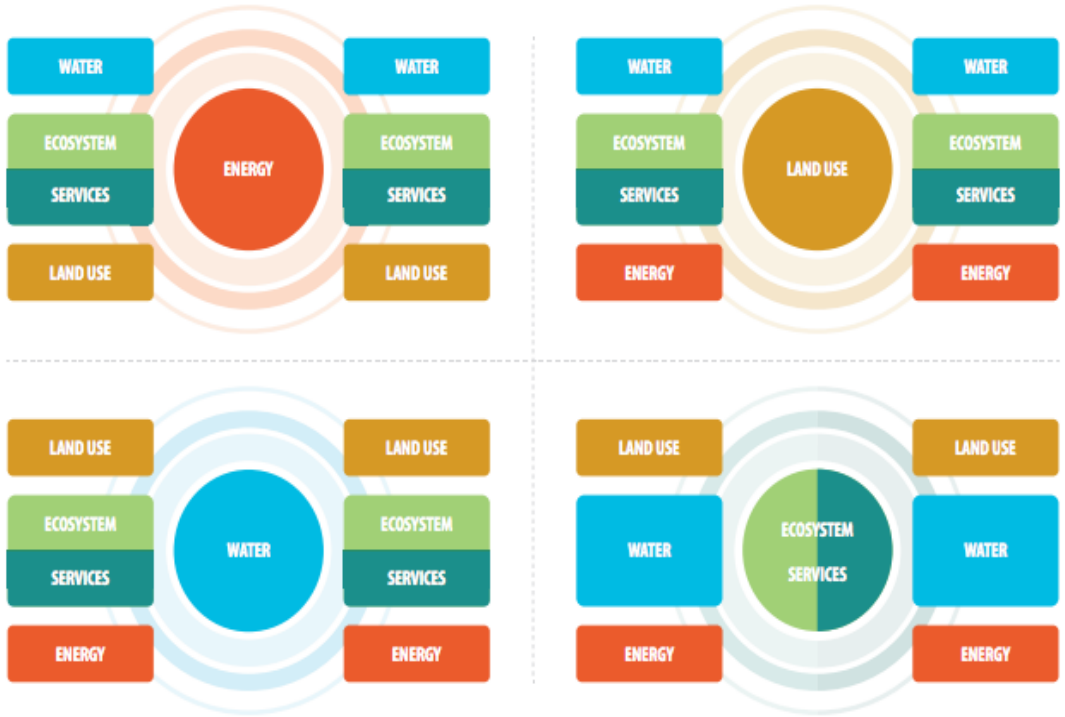



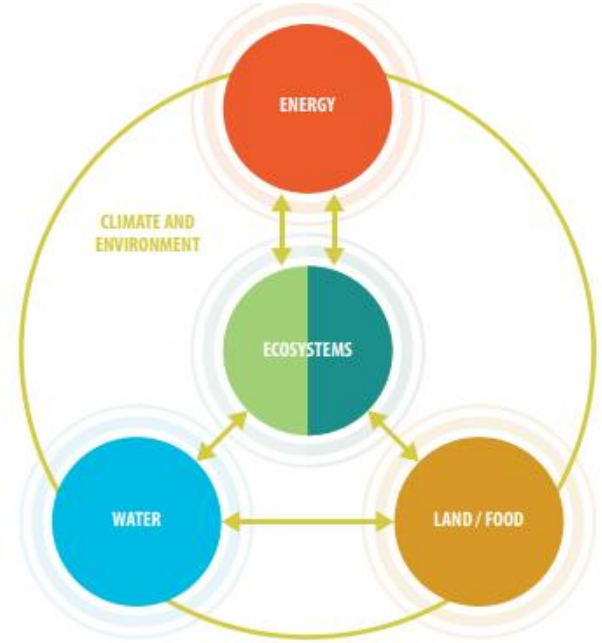

Need for communication, collaboration and joint action!

*nexus dialogue*
inter-sectoral,
cross-country

on water-food-energy-ecosystems:
resources, uses,
security, and governance

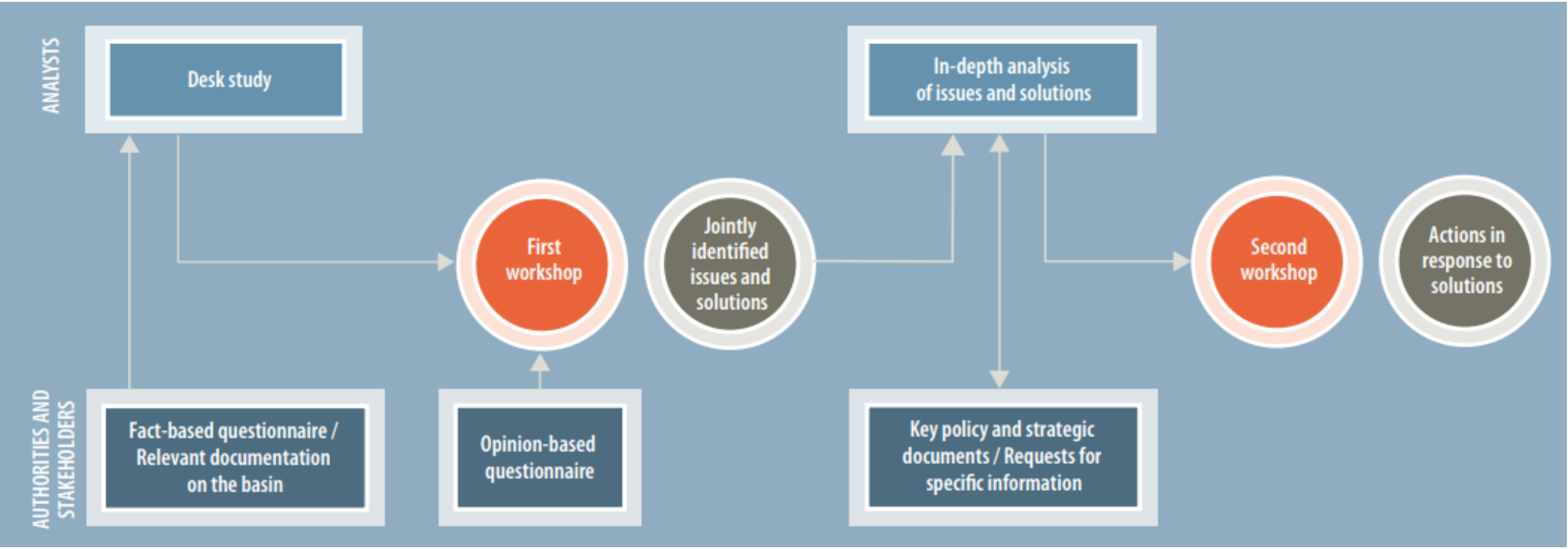
# NEXUS DIALOGUE




trade-offs, impacts, synergies

# METHODOLOGY - THE PARTICIPATORY PROCESS



# METHODOLOGY – TWO "TRACKS"

Nexus analysis carried out on 2 tracks, closely coordinated:

- a **technical track**

Resource base and resource uses (water, energy, land/agriculture, ecosystem services), efficiency, planned development

- Integrated modeling, depending on focus and resources available

- a **governance track**

Governance analysis looks at the legal and regulatory basis, organizations and actors, main policies, planning cycles

- Institutional and stakeholder mapping