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The key role of transboundary water resources for the clean energy transition
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Rethinking Institutional and Financial Mechanisms on Water and Energy Cooperation in Central Asia

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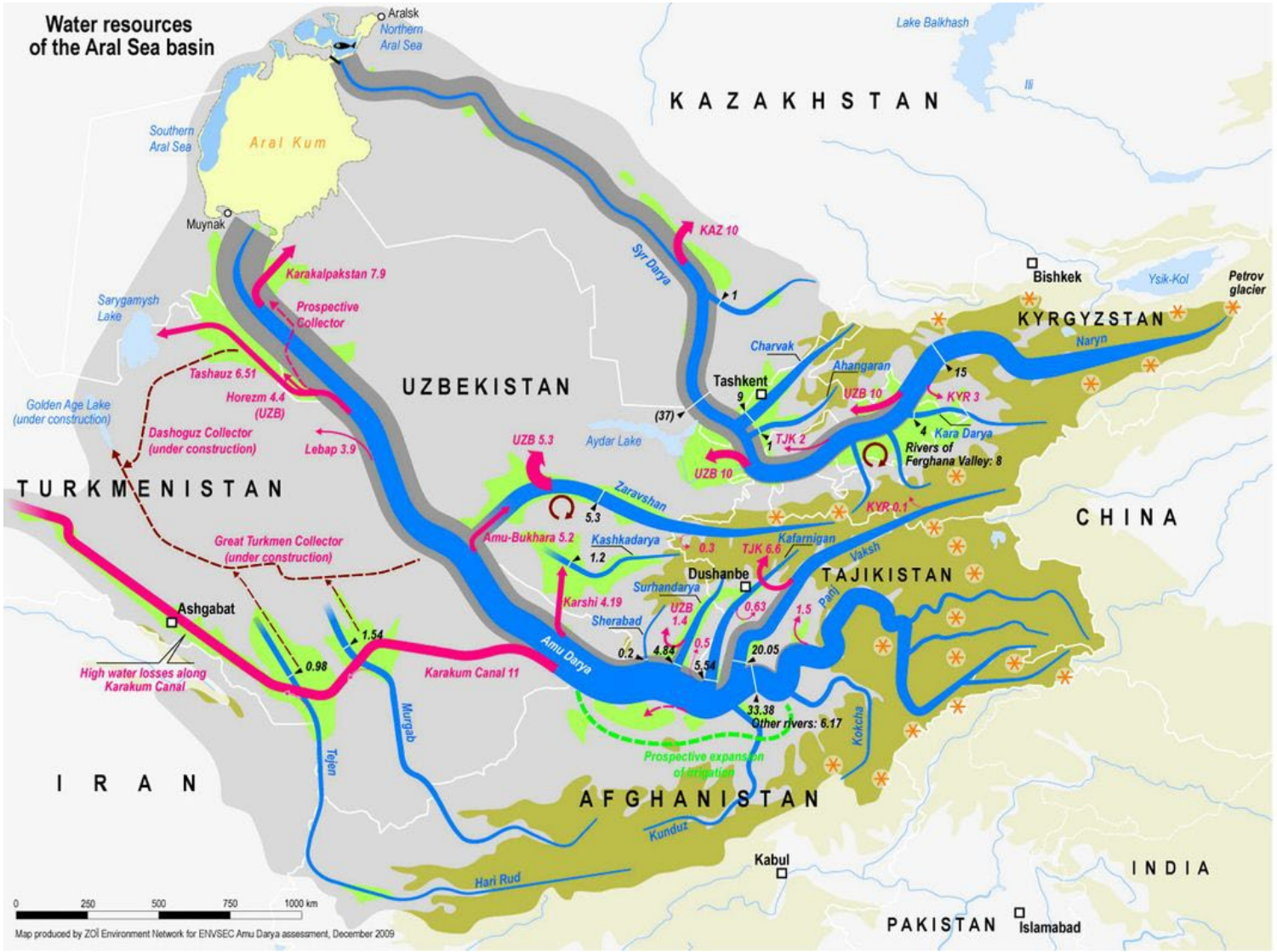
Aral Sea Basin in Central Asia



Total area: 1,231,400 km^2

Basin countries: Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan

Population: 43 mln, of which 3.5 mln live in the disaster zone (60 mln in CA)

Two main rivers: Syrdarya (36.6 km^3/year); Amudarya (79 km^3/year)

Total surface runoff: 116 km^3/year

Current situation in the basin

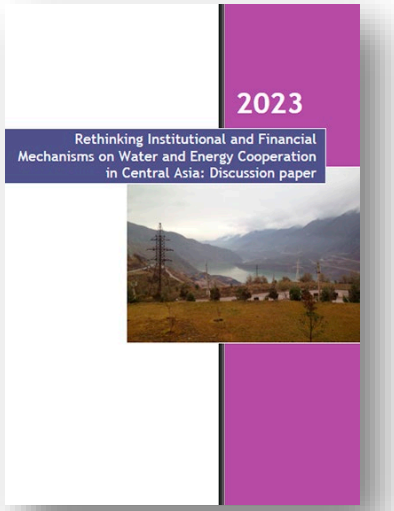
- The 1998 Agreement and bi- and trilateral protocols on the Syrdarya regulate seasonal flow and do not provide for **integrated long-term** flow regulation for irrigation, hydropower and ecosystems.
- **Coordination mechanisms** on water (ICWC) and energy (CEC, ODC) exist, but coordination **between** sectors is still lacking, which leads to:
  - decrease in the efficiency and instability of flow regulation and operation of the Central Asian energy system: (a) electricity shortages in winter and idle discharges from hydro facilities, (b) decrease in water supply in summer.
- **Wealth of cooperative arrangements** on interstate water management infrastructure:
  - **BWO** "Amu Darya" (84 facilities) and BWO "Syr Darya" (198 facilities) - on the terms of temporary use with preservation of the countries' ownership rights
  - **Bilateral**: Turkm-Uzb in the lower reaches since 1996, Kaz-Kyr Chu and Talas since 2000, Taj-Uzb Farhad Dam 2018, Kyr-Uzb Orto-Tokoy (Kasansai) reservoir 2017, and Andijan (Kempirabad) reservoir 2022 .
- **Construction of new infrastructure** - Rogun, Kambarata-1, 2 HPS on Zarafshan – no agreed procedures
- **Plans for renewable energy in Kaz and Uzb** will require regulating imbalances (huge surpluses of solar energy in the summer and daytime, excess gas during the daytime etc).
- **Climate**: unpredictability, fluctuations, deficit in summer, fewer wet years

Best international practices

Columbia, Itaipu, Nam Theun 2, etc

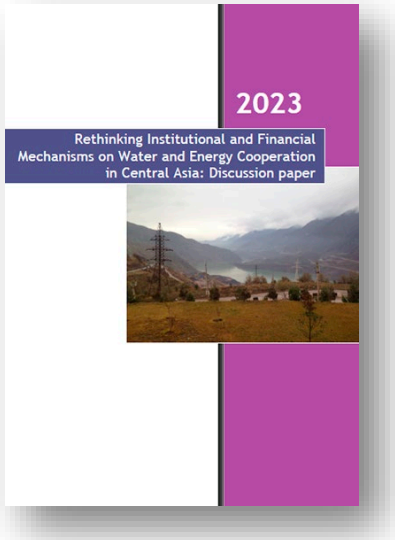
- **Construction and operation**: public and private sources, sanctions for delayed construction, compensation for damages
- **Flow regulation**: royalties, services, sanctions for violation
- **Sound planning**, coordination, operation, financing
- **Joint bodies and PPP**: For projects on the construction and operation of hydropower facilities, commercial companies or consortiums are created in the form of LLC. Overall surveillance is under joint bodies
- Interstate **agreements** are the must
- Comprehensive **cost-benefits assessment** as the basis of the agreement

Future Outlook: Ways forward in improving water and energy coordination



- Take a **holistic** approach in designing measures (technical, legal, institutional, economic and financial)
- Agree on key **guiding principles** in designing and implementing measures
- Build on the **existing** water and energy mechanisms
- Combine **administrative and marked-based** approaches

http://cawater-info.net/expert-platform/water-financing-ca.htm



Future Outlook:

Introducing new elements and mechanisms for better coordination and harmonization for long-term sustainability and mutual benefits

- Improving IFAS, including on water and energy coordination (administrative approach)
- Developing complementary mechanisms for proper implementation, incl.

- Forecasting and modeling
- Technical guidelines and standards
- Updated settlement schemes
- Mechanisms for working within the single energy market, taking into account transboundary rivers
- Private sector, PPP and insurance mechanisms
- New sources of financing (green, climate, adaptation funds)
- Enabling environment at the national level
- Research and capacity building

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WATER-ENERGY-LAND USE LINKAGES

Nexus solutions for a climate resilient Central Asia

Supported by:

Federal Ministry
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Overall project objectives

- **Mainstream** the principles of cross-sectoral cooperation between water, energy and land-use (or "Nexus") into development planning in Central Asia
- Expand concrete **evidence base** on benefits of Nexus approaches
- Design **a financing mechanism** to promote Nexus investments
- Develop and apply practical **tools and instruments** to support decision makers for enhanced cross-sectoral and transboundary co-operation
- Organise **regional political and technical dialogues** and facilitate **capacity development**

For further information: https://oe.cd/well-nexus