Concept note of the side-event at the 2023 UN Water Conference
22-24 March 2023 New York

Adopting the Water-Energy-Food-Environment Nexus for a water-wise energy transition

Rationale

Access to clean water, energy and food production, and ecosystems are under increasing pressure from different global processes, such as a rising global population, rapid urban and economic development, changing diets and climate change.

Water and electricity demand are expected to increase by more than 50% by 2050 and irrigated land must increase by around 60% to meet future food security needs.

A disconnection between water and energy systems can be identified which affect the sustainable planning and operation of both systems. The role played by water in mitigating climate change, especially as provided by hydropower in the electricity sector and adjacent technologies such as floating solar, is rarely considered in a comprehensive, holistic manner. Multisectoral dialogues are lacking among stakeholders that involve water and energy providers. Hence, water is understood in a fragmented fashion which has hampered the progress toward realising both the water and climate change related SDG targets.

In addition, the negative impacts of climate change on the water cycle can rapidly cascade down across sectors and heavily impact water availability and quality, energy production, food security and agricultural markets. Adequately understanding intersectoral impacts and how climate change may aggravate them can open up opportunities for intersectoral cooperation that deliver adaptation and mitigation benefits simultaneously across sectors.

The **Water-Energy-Food-Environment (WEFE) Nexus**[1] policy approach can assist countries in recognizing the necessary governance conditions for joint, intersectoral planning at national and transboundary levels that help water systems adapt to climate change through investments in water, energy and agriculture that ultimately reconcile human development needs with a sustainable use of water resources, soil and conservation and restoration of functioning ecosystems. In this regard, the WEFE Nexus aims to facilitate an integrated approach toward optimal water resource management and enhanced climate resilience while ensuring sustainable water infrastructure development and operation that serve energy generation and disaster prevention.

To fully reap the benefits of the WEFE Nexus policy approach, infrastructure investments in water, energy, agriculture and the environment must be climate-resilient to ensure that development investments deliver adaptation and mitigation benefits across different sectors under a wide range of future, uncertain climate scenarios. In this regard, management instruments and tools play a crucial role that facilitates an integrated view recognising interconnection between water and energy sectors.

For example, as an increasing number of hydropower facilities are built, hydropower sustainability tools can assist countries in managing the greater interdependencies across water, energy, food and environmental impacts that are likely to occur by measuring climate-resilience and performance of

[1] The "nexus" term in the context of water, food, energy and the environment, refers to these sectors being inextricably linked so that actions in one policy area commonly have impacts on the others, as well as on the ecosystems that natural resources and human activities ultimately depend upon (UNECE, https://unece.org/environment-policy/water/areas-work-convention/water-food-energy-ecosystem-nexus).

hydropower projects against globally applicable criteria for environmental, social, financial, and technical sustainability.

Finally, climate-resilient infrastructure investments can benefit from combining different funding sources and may benefit from climate adaptation and mitigation funding. Internally generated revenues and enough allocations from different government budgets will be needed to leverage additional sources of finance. In this sense, the WEFE Nexus can assist in creating the necessary conditions to improve government budget allocation, reinforce overall access to finance and raise the ambition to enable climate-resilient intersectoral investments to be carried out at the necessary scale.

Goals

The event aims to showcase how climate-resilient WEFE Nexus interventions can play a prominent role in achieving SDG 2, 6, 8, 9, 11 and 12. There are three main goals: 1) to demonstrate how the WEFE Nexus can equip countries with good knowledge to develop joint, climate-resilient investments in water, energy, agriculture and the environment; 2) demonstration of the potential and role of the hydropower development for related sustainable development goals and targets through generation of clean energy, providing long-term water availability and reducing risks and harms of water related natural disasters; 3) showcase good international industry practices through strict environmental, social and governance (ESG) performance requirements by adopting a global sustainability standard, the Hydropower Sustainability (HS) Standard.

Objectives

1. Understand the reinforcing interlinkages between the WEFE Nexus and climate-resilience for improved infrastructure investments, development and operation that deliver adaptation and mitigation benefits across different sectors,
2. Learn about hydropower sustainability tools that are assisting countries in developing climate-resilient hydropower infrastructure that can efficiently manage the interdependencies across water, energy, agriculture and the environment,
3. Demonstration of the importance of the development of hydropower sector for meeting water supply needs in rural and agriculture reliant areas and water related disaster risk reduction,
4. Showcase multisectoral approach when tackling water supply and demand management, for instance an integration of water supply and the management of local livelihood such as agriculture and forestry management,
5. To highlight the needs, share best practice of multi-sectoral collaboration to accelerate attainment on SDG6 in mountainous Central Asia that is highly vulnerable to the impact of climate change – with focus on both supply and demand management,
6. Explore the role of the WEFE Nexus in the formulation and implementation of the NDCs,
7. Discuss how the WEFE Nexus can promote governance solutions that can lead to climate-resilient investments with greater access to finance, at transboundary and national levels.

Guiding questions

The event will be guided by the following questions aimed at facilitating the interactive and inclusive discussion among key stakeholders around the main issues:

1) How can WEFE Nexus best inform us to develop water and energy sector interconnections and realize SDGs (8, 9, 11, 12)?
2) How can the WEFE Nexus approach boost climate-resilience across the water, energy, agriculture and environment sectors?

3) What hydropower sustainability tools have been developed to assist hydropower solutions become more climate-resilient and intersectoral? What are the challenges in the application and dissemination of these tools in practice?
4) What best practices of multi-sectoral collaboration there is for replication (example of Tajikistan and China)?
5) How hydro energy sector can promote collaboration between countries with focus on water supply, energy sufficiency and food security?
6) How can River Basin Organizations be better prepared to fully apply the WEFE Nexus and ensure that infrastructure investments always deliver benefits to different socio-economic sectors under changing conditions?
7) How can the WEFE Nexus benefit the formulation and implementation of the NDCs?
8) How can the WEFE Nexus approach improve the financial flows for climate-resilient infrastructure investments?

Expected outcome

Messages and recommendations to incentivize the application of WEFE Nexus governance solutions and tools that lead to multisectoral, climate-resilient investments that deliver adaptation and mitigation benefits, ultimately achieving a greater access to finance, and contributing simultaneously to a diverse array of development goals and international commitments from the Sustainable Development Agenda and the Paris Agreement.

Organizers

Organizer: **IHA**, **Tajikistan Ministry of Energy and Water Resources, ITAIPU Binacional, EC IFAS and Aga Khan Foundation**

Participating organizations:

- World Bank
- Global Energy Interconnection Development and Cooperation Organization
- GIZ
- Academics, e.g. University of Central Asia
- USAID Tajikistan

Proposed Agenda

- **Welcome and opening remarks (10 mins):** Co-organizers (tbc)
  Jamshed Shoimzoda, First Deputy minister of Energy and Water Resources of the Republic of Tajikistan
- *Maria Antonia Gwynn, member of the Governing Council, Itaipu Binacional*
- *Michael Kocher, Gender Manager, Aga Khan Foundation*

- **Keynote presentation (20 mins subject to number of key note speakers):** Insights from the application of the WEFE Nexus policy approach and demonstrated benefits of sustainable hydropower investments
- **Panel discussion and interactive Q&A session with the audience (40 mins)**

- **Closing remarks (5 mins):** Mr. Sulton Rahimzoda, Chairman of the Executive Committee of the International Fund for saving the Aral Sea, Special Envoy of the President of the Republic of Tajikistan to the Water and Climate Coalition Leaders