

Mainstreaming WEF E Nexus in the Blue Nile Basin: opportunities and challenges

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Session 4: Challenges and Opportunities in Implementing the WEF E Nexus

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CGAIR initiative on NEXUS Gains

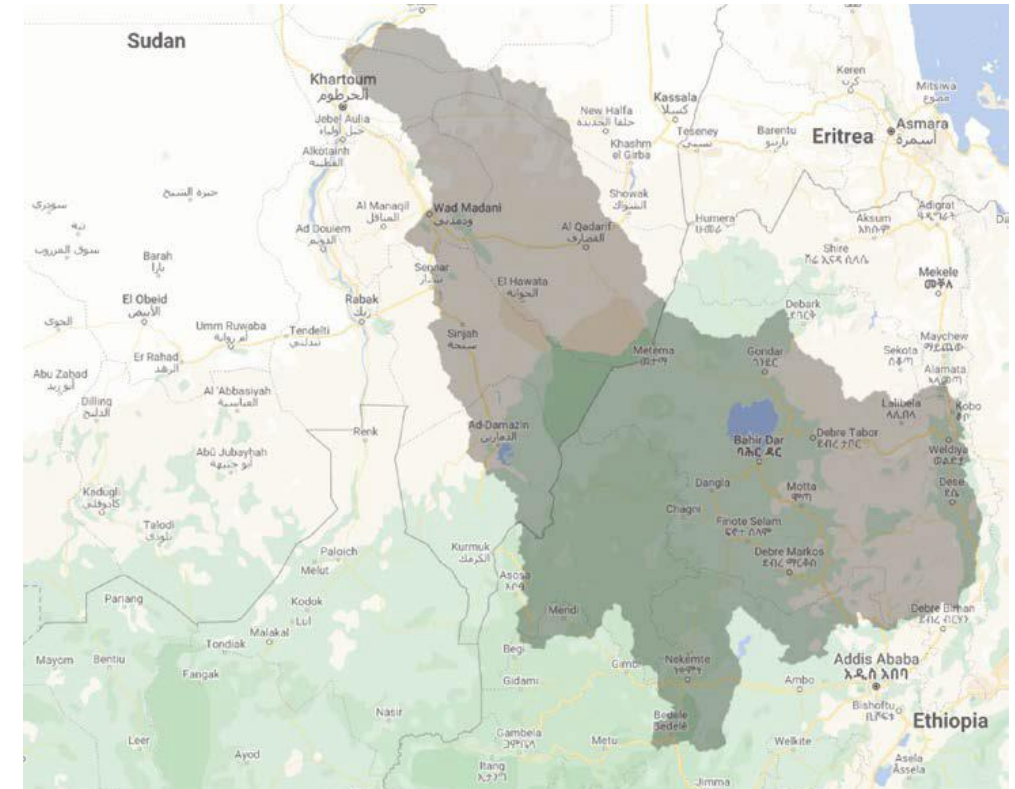
- Nexus Gains: A CGIAR initiative
 - Focus on transboundary river basins in Africa and Asia
 - To promote Water-Energy-Food-Environment (WEFE) nexus thinking and innovations
- In East Africa, the Blue Nile Basin is the key focus area – Ethiopia and Sudan
 - Increasing water, food, and nutrition insecurity and lack of energy access
 - Increasing scarcity of natural resources (e.g. water) – the need for resource use efficiency across WEFE
- The key components of WEFE include
 - Multi-sectoral stakeholder engagement/process
 - Data analytics and frameworks
 - Policy and Governance



NEXUS Gains Geographies

Key objectives

- The Nexus Gains initiative in Blue Nile focuses on four key objectives:
 - Promoting Nexus thinking and awareness creation through multiple stakeholder engagement.
 - Identifying key nexus issues, including synergies and trade-offs.
 - Conducting integrated water storage diagnostics to support the WEFE nexus assessment.
 - Capacity building.



The Blue Nile Basin

Stakeholder engagement

- Stakeholder engagement process
 - Mapping of stakeholders (government ministries & departments, NGOs, issue-based organizations, academia, research institutes)
 - Mapping of Nexus issues/challenges for different stakeholder groups
 - Mapping the multi-sectoral linkages of institutions
 - Assessing the capacity needs of the various stakeholders
 - Idea co-generation process



16-17 May 2022, Bahir Dar, Ethiopia



4-5 December 2023, Addis Ababa, Ethiopia



16-17 May 2022, Bahir Dar, Ethiopia



17-18 November 2022, Bahir Dar, Ethiopia

What came out of stakeholder consultations?

- Stakeholders identified the following during the consultations
 - There is high competition for water resources leading to substantial tradeoffs among sectors.
 - Inadequate multi-sectoral platform for data/knowledge exchange and joint planning to inform the discussions among sectors.
 - Institutional challenges such as overlap or duplication of responsibilities, and weak communication between sectors.
 - Absence of clearly defined policy and legal frameworks on using the different natural resources that integrate the nexus concept.
 - Absence of common analytic tools and lack of capacity to use such tools. Tools for planning and decision-making are limited or lacking.



17-18 November 2022, Bahir Dar, Ethiopia



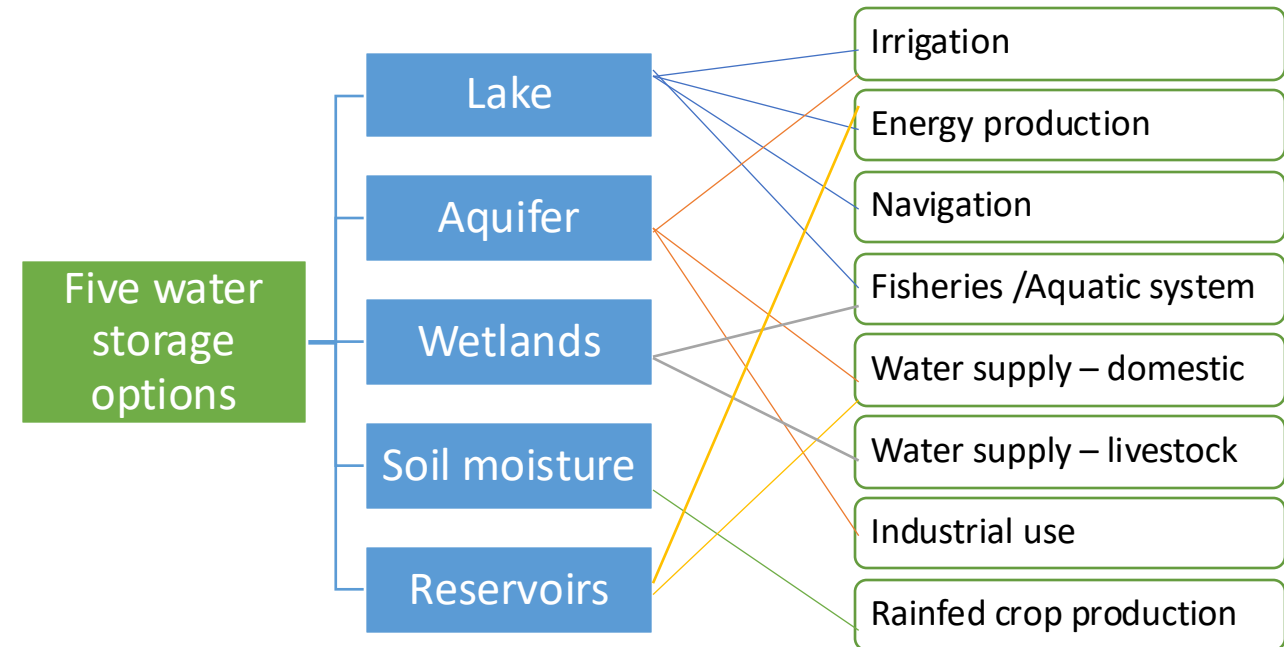
29-30 October 2024, Addis Ababa, Ethiopia



17-18 November 2022, Addis Ababa, Ethiopia

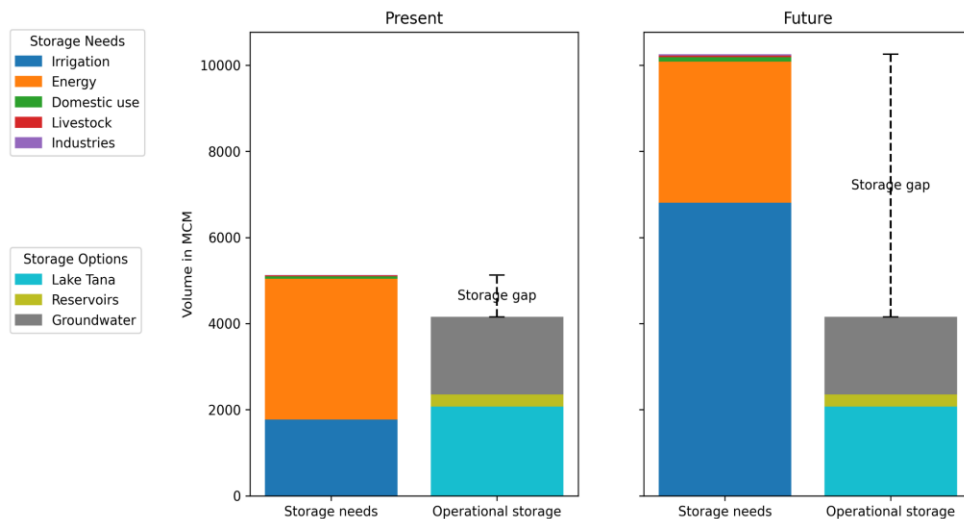
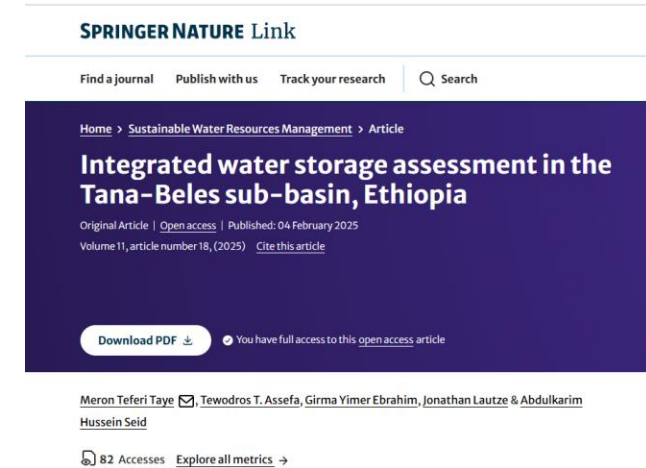
Integrating water storage for WEFE nexus

- Tana-Beles has several natural and man-made water storages that serve different sectors.
- Mainstreaming the WEFE nexus in basin development requires integrating green and grey water infrastructure.
 - To minimize tradeoffs from natural storage
 - To avoid having sub-optimal solutions for water use



Integrated water storage diagnostic

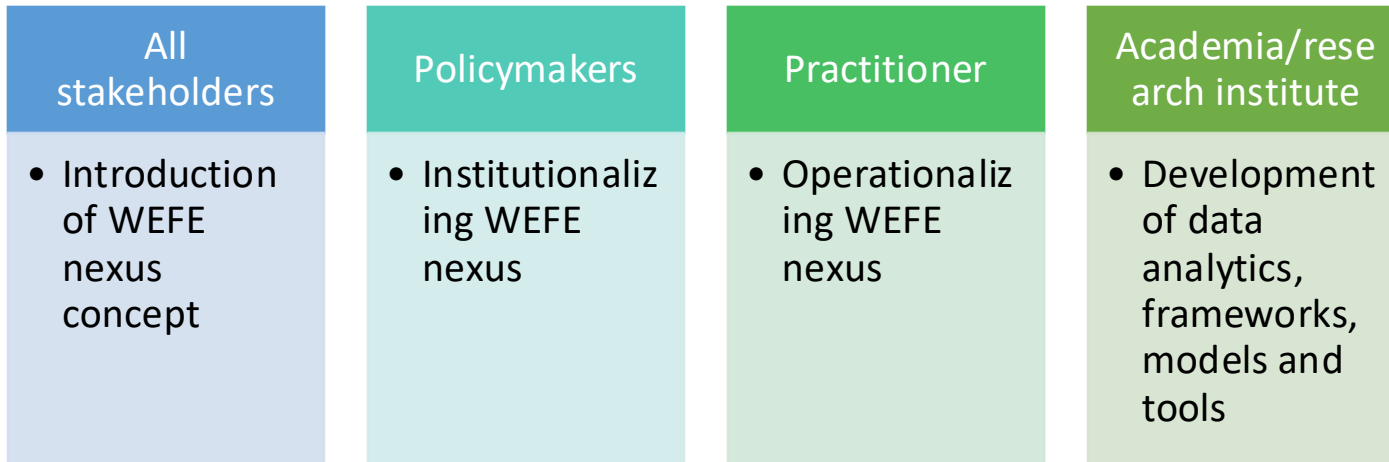
- Analyzed the temporal and spatial variability of water storage, both natural and man-made.
- Estimated storage gap between storage needs and available storage options in the current and future periods



Storage gap for current and future period in Tana-Beles

- Energy and irrigation demands constitute 98% of annual water demands.
- Next step - Co-design an optimization model with relevant stakeholders in the basin to support an optimal combination of built and natural storage.

Capacity building



7-9 November 2024, Arba Minch, Ethiopia



9-13 December 2024, Addis Ababa, Ethiopia

- Through Nexus Gains – we provided capacity building on integrated modeling approaches to support water storage diagnostics
 - Focus on surface water and groundwater water availability and interactions – targeting academics/researchers and gov't practitioners

Challenges and Opportunities

Challenges

- Lack of operational workflows, guidelines and resources for taking the nexus approach
- Weak institutional capacities
- Inadequate coordinating mechanisms (between sectors and between federal and regional levels)
- Lack of nexus tools and shared datasets

Opportunities

- Ministry of Water and Energy – opportunity of synergy between water & energy
- Interest from MOWE to include the Nexus and integrated storage concept in the revised water sector policy
- MOWE is developing an integrated database that can be leveraged to serve as a WEFE nexus database
- High demand for learning the nexus tools and storage diagnostic methods

Lessons learnt

- Bringing different stakeholders together to discuss the concept of WEFE nexus brought out the challenges and opportunities to further implement the concept
- The idea of looking WEFE nexus from an integrated water storage perspective for this basin was a new paradigm.
- Tailored capacity building helped to promote the WEFE nexus concept and water storage assessment tools.
- There is need
 - To further tailor capacity-building trainings for various stakeholder groups
 - To develop optimization tools
 - To establish sectoral coordination frameworks





International Water
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Thank you

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