

WEFE-Groundwater Flagship Program/Project for Eastern Africa

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2. East Africa Situation Analysis
3. Barriers & Enablers
4. Alternative Scenario
5. WEFE-Groundwater flagship program



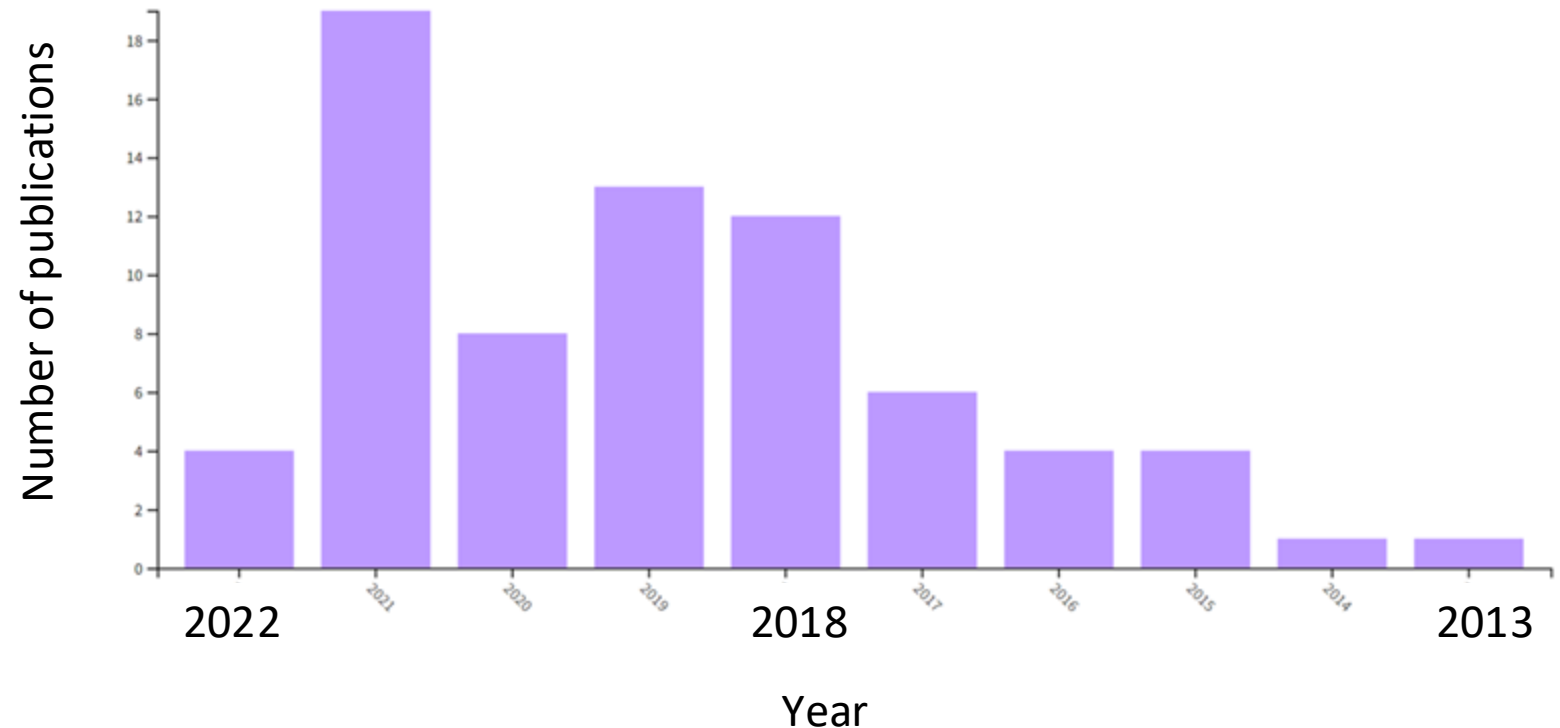
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Educational, Scientific and
Cultural Organization



UNESCO promotes knowledge sharing and the free flow of ideas to accelerate mutual understanding and a more perfect knowledge of each other's lives. UNESCO's programmes contribute to the achievement of the Sustainable Development Goals defined in the 2030 Agenda, adopted by the UN General Assembly in 2015.

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Incipient stage of WEFE considerations, with externally driven funding and research



- WEFE research and considerations are growing slowly but are at the incipient stage
- WEFE research is predominantly financed and executed in Europe and the US

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(Historical contention), low level economic and trade integration, and water resources fragility mark the region. Recent policies are encouraging regional integration

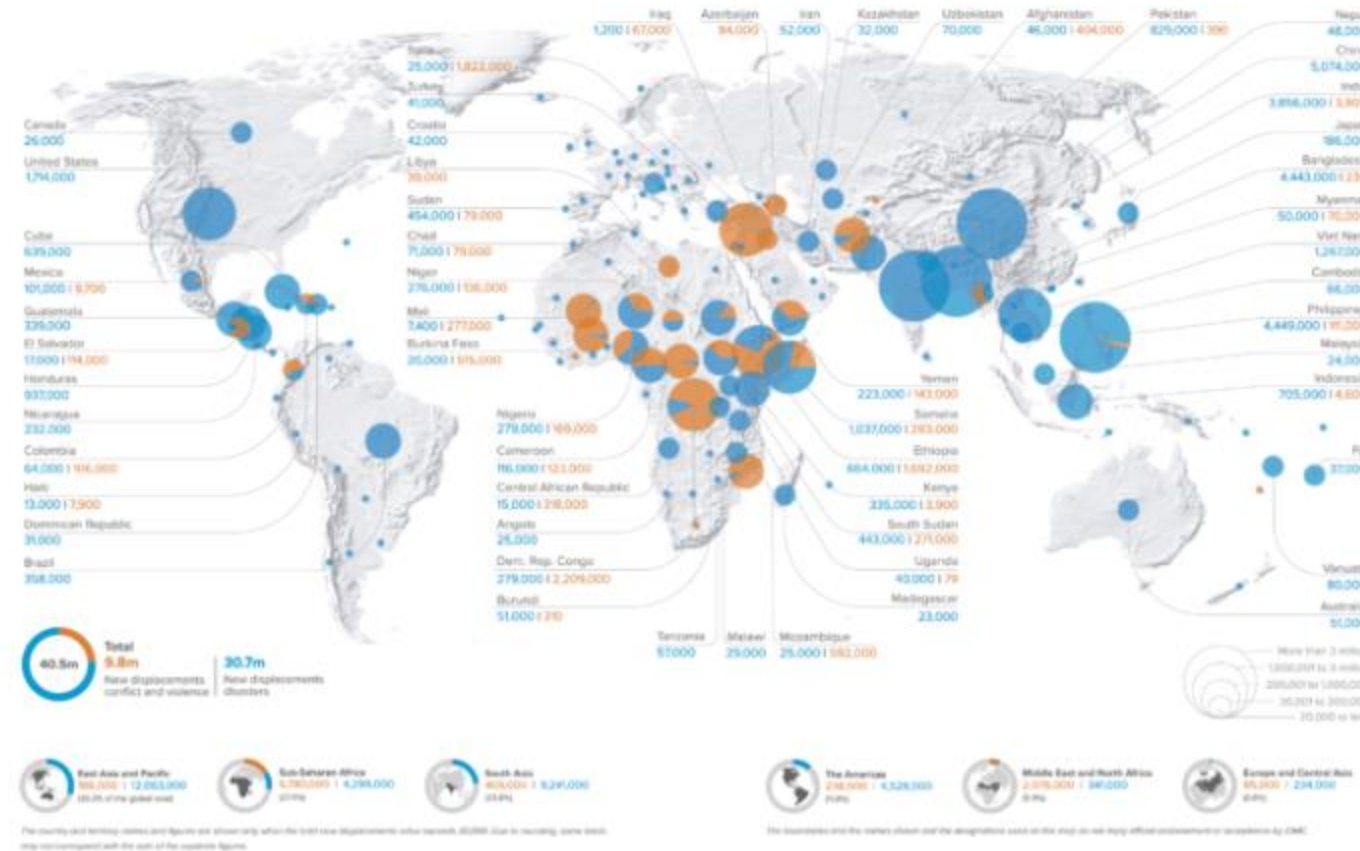
Socio economic outcome is strongly tied to water resources availability and scarcity

Agro pastoralism and Pastoralism is the main stay of economic activity but resources scarcity and climate change leads to dwindling of coping mechanisms

Resources scarcity triggering and sustaining conflicts, migration and displacements.

Water availability links to Health, School attendance, poverty etc

New displacements by conflict and disaster in 2020



Global new displacements by conflict and disaster in 2020.

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The arid areas in the East African region are some of the most geographically disadvantaged regions in the world regarding their aggregate surface and groundwater availability.

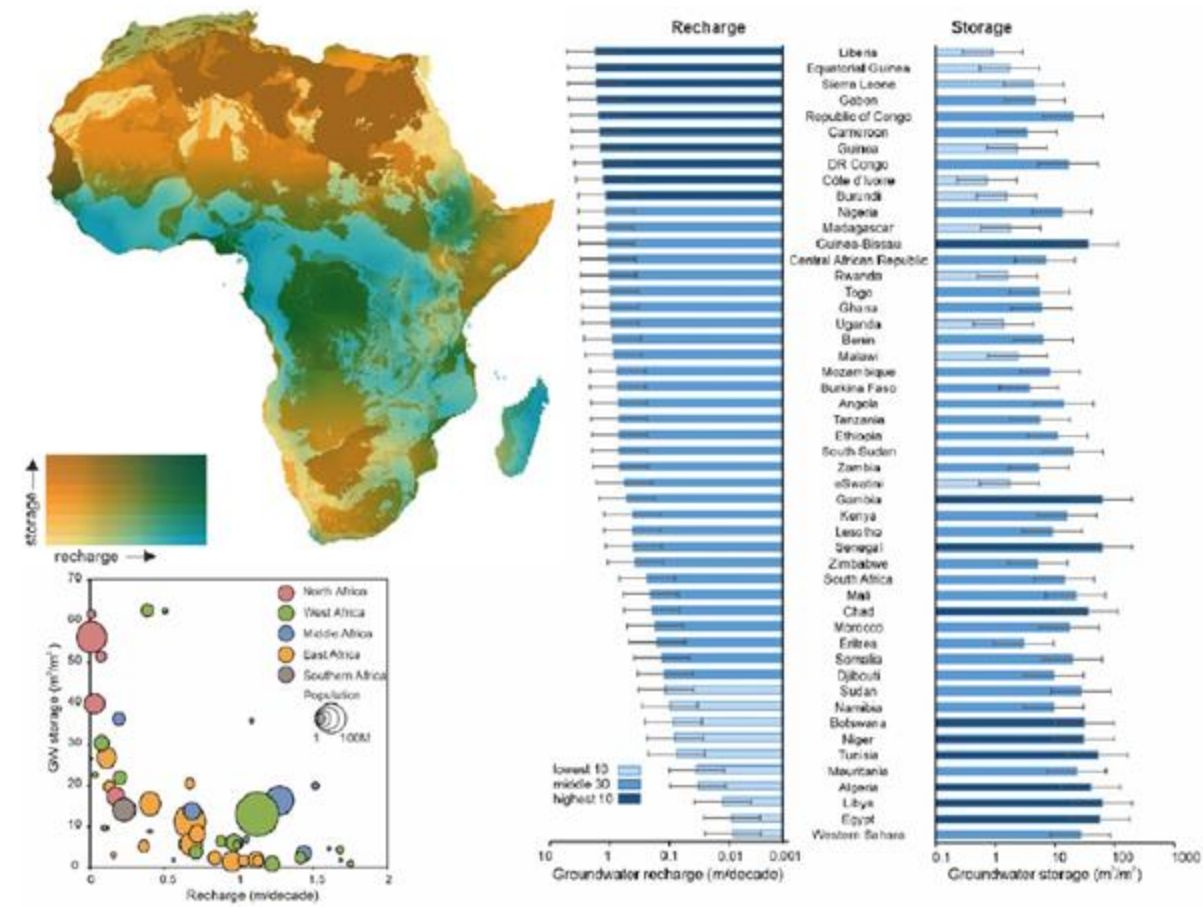
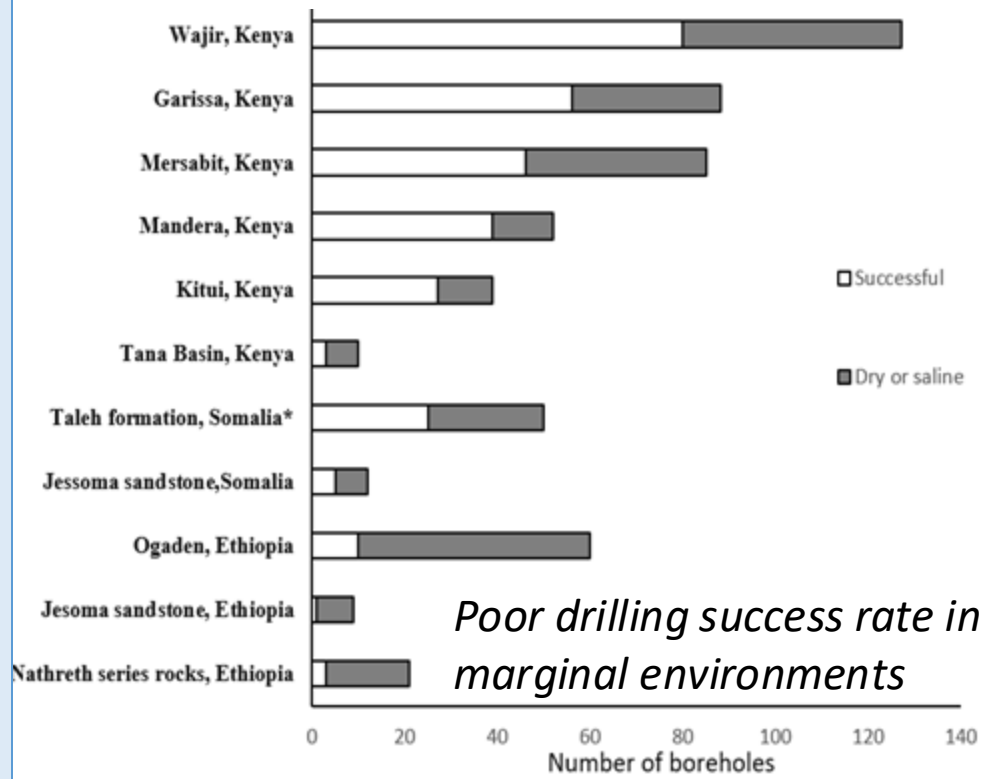


Figure 4. Average groundwater recharge and groundwater storage for each African country; (a) map of LTA recharge and groundwater storage; (b) bar graph of recharge depth and groundwater storage m⁻² with ten top and bottom countries highlighted and (c) cross plot of groundwater storage and recharge for African countries scaled by population of the country. Groundwater storage from MacDonald *et al* (2012).

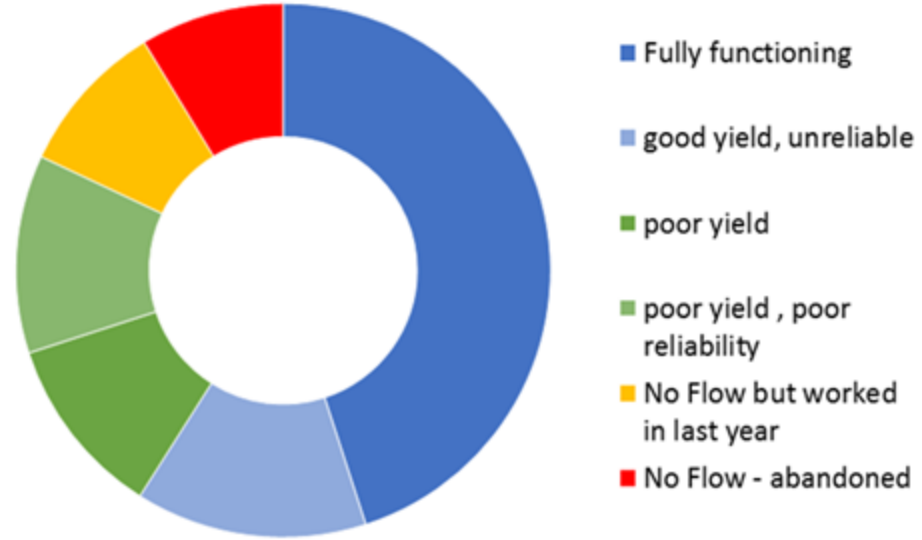


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Groundwater is a viable option, but water service delivery is hampered by low drilling success rate, poor functionality and poor groundwater quality

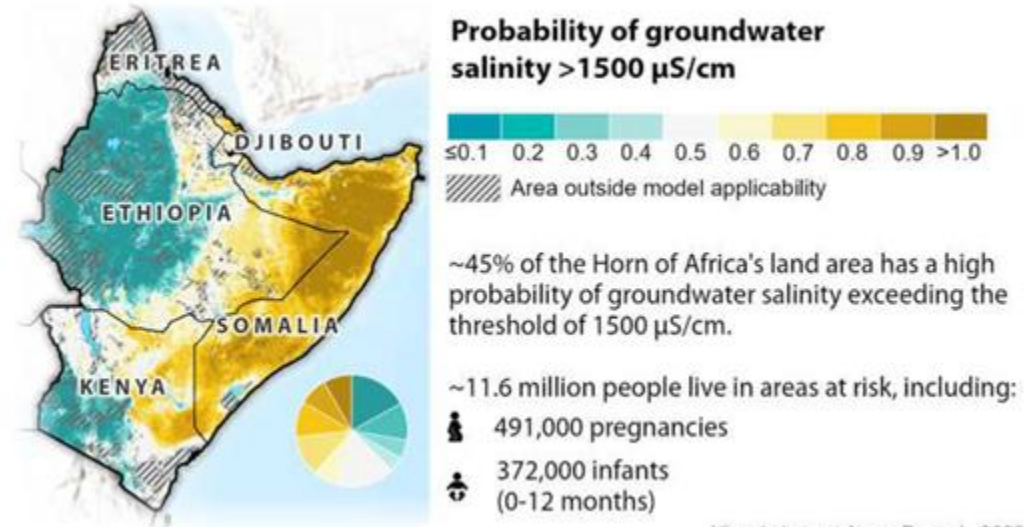


Poor drilling success rate in marginal environments



Poor Borehole functionality

11.6 million people live in areas at risk of high groundwater salinity including 491000 pregnancies, 372000 infants



Visual abstract Araya D. et al., 2022

Barriers: Narratives, scarcity & inadequate formal mechanism

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Climate Change and water scarcity

- The most widely traded products between the countries and within the national boundaries in the border region have the highest water and energy footprints (e.g., Khat, Livestock, Cereals, Fodder, etc.)
- Water provision is considered one of the strategic interventions to increase livestock trade volume and control illicit livestock trade.
- An overall exhaustion of livelihood coping mechanisms and adaptive strategies resulting in increased competition for limited resources increasing the risk of conflicts, displacement, and the erosion of social cohesion between households, and communities

Lack of adequate formal mechanism for national and transboundary water and WEF- cooperation

Barriers: Examples

Box iii: Examples of WEFE challenges encountered in the absence of WEFE framework for regional integration

1. Energy scarcity hampers the Ethio-Djibouti Groundwater Supply Project leading to frequent water interruption, while Ethiopia is also selling 50MW of electricity to Djibouti
2. Restriction on fodder trade to curb the competition for water and fodder in wetter areas in Ethiopia hampers cross-border cattle trade in the region
3. Massive investment in sugarcane irrigation expansion using sprinkler irrigation to increase water efficiency led to a massive increase in energy consumption
4. Ethiopia's wheat production in dry lowlands using irrigation could potentially lead to depletion of the scarce water resources for pastoral communities within Ethiopia or regionally etc
5. The most widely traded products in the region have the highest water and energy footprint



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Enablers: The member states are active in at least a dozen of multilateral organization enabling collaborations



6TH NILE BASIN DEVELOPMENT FORUM



IGAD



COMESA



GCC



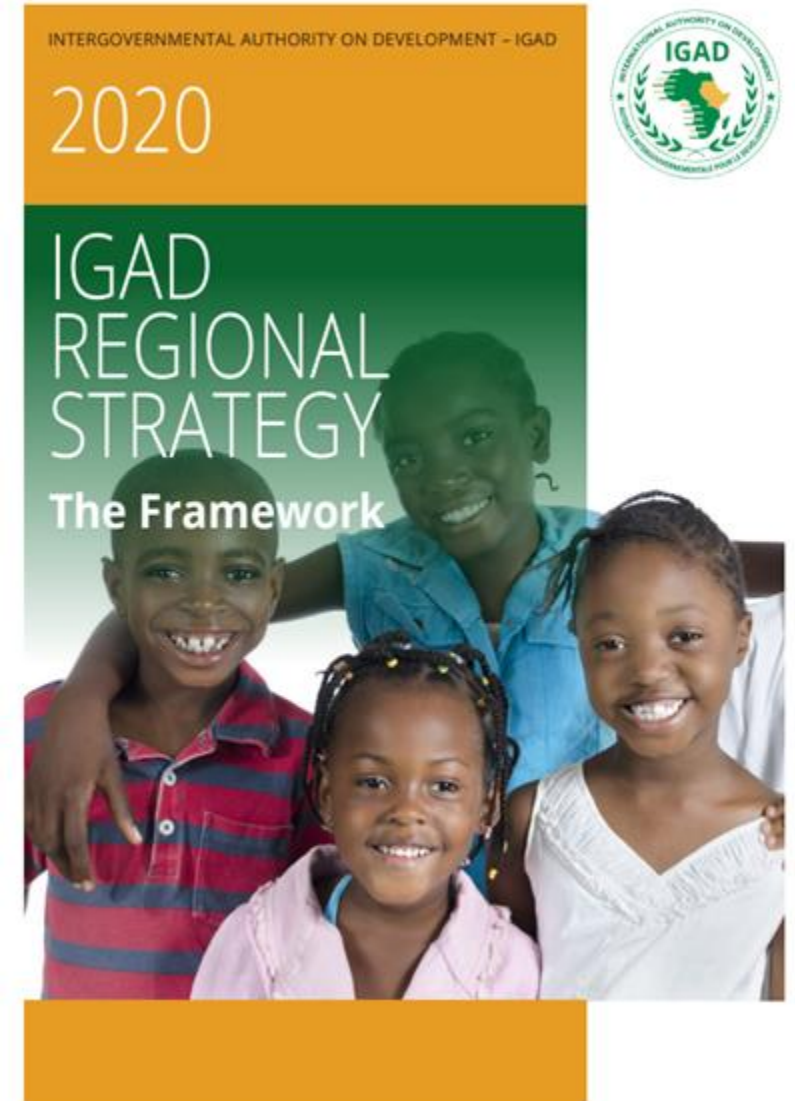
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Enablers: Regional integration has a firm regional and continental policy standing now



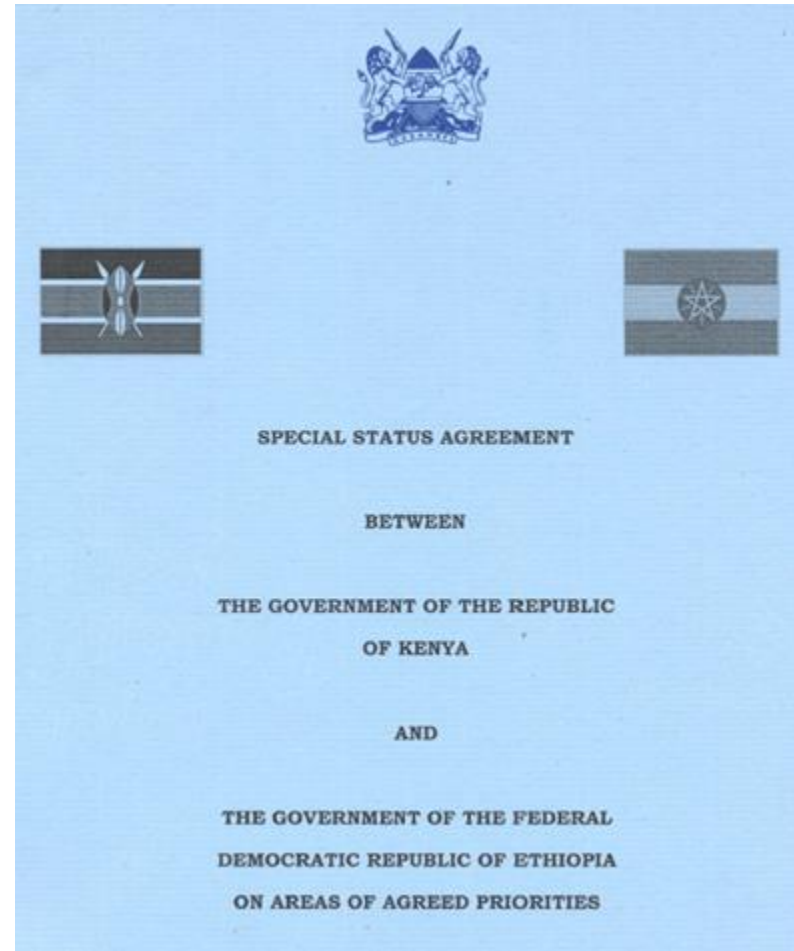
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South Sudan, Ethiopia Sign 100 MW Electricity Trade Agreement

And many others

Enablers: Growing regional agreements of WEFE significance (some examples)



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The alternative scenario

By using existing multilateral platforms, the proposed alternative scenario aims to overcome the barriers to regional integration by *changing the narratives of contention to cooperation on (ground)water resources, enhancing (ground) water availability and optimizing the efficient use of water resources for energy and food production*.

The program aims to improve the livelihood of '100,000,000' people in fragile environments in the Eastern Africa region

The program/project has three components

Presenting the highlights of UNESCO WEFE-Groundwater Flagship
program for Eastern Africa
(Component I, II and III)

Component I (Changing the Narratives): Facilitating regional dialogue on contested, scarce water resources through high-level transformative training and dialogue using existing and/or new regional institutional platforms.

Purpose of the component:

- Create the necessary environment for transformative regional collaboration in a highly contested region
- Help regional organizations and their member states apply a nexus approach in the formulation of a common WEFE strategy and program

Outcome: Increased trust among member states and appreciation for the positive role of cooperation in the effective management of meager water and natural resources

Output I: Series of transformative platforms

- Up to 6 High-level pieces of training on transformative engagement
- Up to 6 trainings for mid-level practitioners
- IGAD water forum – support the continuation of the IGAD water forum
- Support participation of stakeholders in Gulf-East Africa Water Forums
- Support an East African Water Expo
- Establishment of a regional observatory (the equivalent of SADC GMI)

Output II: Series of communication and awareness-raising programs

- Regional dedicated East African diaspora workshops
- Radio Program on IGAD in each country (emulate Nile radio)

Component II (Water Availability Enhancement pilot projects): Showcasing the benefits of implementing a series of quick-win water enhancement and water safeguarding projects/pilots to overcome water scarcity challenges, enhance regional integration, and build trust.

Purpose of the component:

- Find innovative solutions to enhance water availability for economic integration under changing climate

Outcome:

- Innovative projects, pilots, or their scaling up solve key water challenges, enhance water availability, influence policy and subsequently lead to enhanced economic integration

Output: Series of projects/pilots(to be selected in close consultation with the stakeholders and funders), examples include

- Groundwater and surface water salinity management in the Omo-Turkana Basin in Ethiopia and Kenya
- Transboundary catchment projection measures of the strategic Awash River Basin Aquifers to enhance water supply in Ethiopia, Somaliland, and Djibouti
- Modernization of groundwater mapping and monitoring for the strategic boreholes and aquifers in fragile environments (Refugee camps, vulnerable environments etc) (e.g Jesoma Aquifer shared between Somaliland, Somalia, and Ethiopia)
- Identify water sources for economic activities of regional economic significance- mining areas (e.g. Potash in Ethiopia, Oil, and Gas in Kenya-Uganda), rail and road networks (Somali Land, Kenya, Djibouti, Ethiopia, Kenya, South Sudan), livestock trade routes, cross border tourist destinations.
- Enhancing water availability through nature-based solutions in marginal/borderland environments [Somalia, Ethiopia, Kenya, Tanzania] [in collaboration with UNDP and UNICEF]

Component III (Foster WEFE nexus through shared projects/programs): Fostering sustainable development and regional cooperation by framing regional integration through WEFE nexus approaches and facilitating sustainable and climate-resilient investments for increased water, energy, and food security in the region.

Purpose of the component:

- Foster long-term sustainable transboundary cooperation in the region through common investment programs

Outcome:

- Member states equipped with necessary data, statistics, and information on the critical role of WEFE in hindering and accelerating regional economic integration and make necessary preparations for investment and regional collaboration

Output I: Regional WEFE diagnostic report including the state of water and groundwater resources, virtual water trade, climate change impacts on economic integration (trade/tourism/wildlife/geothermal)

Output II: Regional Virtual Water Trade Statistics

Output III: Regional WEFE footprint report

Output IV: Regional WEFE progress indicator tool

Output V: Identification/list of concrete investment projects - focusing on multi-purpose WEFE infrastructure

Box iv: Guideline (excerpt from a UNESCO guideline under preparation) for the preparation of a National WEFE assessment report (Modified from UNECE guideline)

The primary prerequisite for the WEFE assessment report is the definition of the geographic scope of the WEFE analysis. The scope can be a region (IGAD, ECOWAS) or a river basin (Awash, Sheble Juba, etc). Once the geographic scope is defined, the next prerequisite is the formation of the National WEFE task force. The task force will have to be constituted from of policymakers, research organizations, and other stakeholders. This has to be followed by the identification of national stakeholders. The final aim of the WEFE assessment report is to produce WEFE report for the basin (or geographic area) under consideration. The report will depict National level nexus issues, solutions, and benefits. The actual process of the production of the nexus report will come in multiple steps and may be guided by experts.

Step i: Desk study. The desk study must contain The current and if possible, projected needs of the population in the basin, as well as the national needs that rely on the basin, are identified. This is done by looking e.g. at the water, energy, and land resources as well as their uses. This develops an understanding of the basin's socioeconomic context, its resource base, and governance context. Feedback to the desk study must be provided by the national task force and subsequently presented at an inception workshop.

Step ii: Analysis step: This step involves the production of the WEFE draft report. The report must identify needs. The identified needs are then associated to sectors and institutions. The key sectors are analyzed by applying the Drivers-Pressures-State-Impacts-Response framework. The analytical WEFE report will then be presented at a national validation workshop. At the validation workshop Nexus diagrams about the main interlinkages are reviewed, complemented, and validated collectively with the stakeholders (including through group works). It includes the nexus components water, food, energy, ecosystems and the significant linkages identified. Further analysis by experts using additional data refines and details the linkages. This will end in a WEFE assessment report.

Step iii: Regional harmonization. At the regional level the National Reports will be harmonized with the aim of proposing investment projects and solutions to the most pressing inter-sectorial issues, land use management, cooperation agreements, policy solutions, infrastructure projects or economic instruments. These are discussed in the later workshops.

Thank you