

New Directions for EU Action on the Implementation of the WEFE Nexus in Transboundary River Basins

Insights From the Zambezi & Senegal River Basins

ABSTRACT

This policy brief explores efforts by the European Union (EU) to support **the Water-Energy-Food-Ecosystems (WEFE) Nexus in African transboundary river basins**, with a focus on River Basin Organisations (RBOs) as key actors in operationalising cross-sectoral approaches. It evaluates the strengths and weaknesses of current policies, institutional frameworks, stakeholder engagement, and research support, while identifying opportunities for future improvements in these areas. Drawing on insights from the EU Horizon 2020 project GoNEXUS, interviews and a literature review, this policy brief focuses on the EU's WEFE Nexus activities in Africa with **a particular emphasis on the Zambezi and Senegal River Basins**. Recommendations are directed at EU policymakers, global organisations, donors, NGOs, and academia.

KEY MESSAGES



Rather than being an end in itself, the WEFE Nexus serves as a valuable — though not exclusive — **framework for implementing cross-sectoral approaches that enhance sustainable water management**.



Substantial donor investments in recent years have propelled WEFE Nexus initiatives across Africa, with the EU being one of the largest donors.



RBOs are essential for advancing Nexus solutions by facilitating dialogues on infrastructure planning, integrating these solutions into basin plans, and providing relevant guidelines.



To date, the **Nexus has been embedded in development strategies and management plans in some major transboundary basins**, including the Zambezi and Senegal.



However, systematic integration of the approach into management or development decisions remains rare in Africa, with impacts often **elusive, and many Nexus activities overlooking ecosystems**.



After investing substantially in creating awareness about the Nexus, developing tools and guidance, and piloting projects, **the WEFE Nexus must eventually be led by African countries in their day-to-day activities**, gradually reducing the need for project-based donor funding.



RECOMMENDATIONS

- Engage diverse stakeholders, including **high-level decision-makers and powerful industry leaders, focusing on collectively agreed management or policy challenges** to ensure Nexus projects effectively inform transboundary natural resources decision-making.
- Support RBOs to **mainstream the WEFE Nexus beyond basin plans and strategies into national-to-local policies and planning** that drive decisions in natural resource management while **using it as a tool to synergistically implement multi-sectoral policy goals**.
- **Leverage existing working groups or platforms to mainstream the WEFE Nexus and strengthen their capacities and mandates**, avoiding the creation of new, parallel governance structures.
- **Engage RBOs, local scientists, and technicians as equal partners** in Nexus research, empowering them with skills and training **to independently lead future Nexus research and drive cross-sectoral approaches in day-to-day activities**.
- Ensure EU-funded Nexus projects **always strengthen data infrastructures and accessibility in African transboundary river basins beyond the project timeline**, where sophisticated data needs for cross-sectoral water management face limited governmental support and resources.
- **Develop an action plan to further institutionalise the WEFE Nexus in African transboundary basins cost-efficiently**, drawing on existing implementation experience, lessons learnt and stakeholder consultations, and update existing tools and guidance, particularly by including ecosystems.

THE EU'S CURRENT STRATEGY & ACTIVITIES ON THE WEFE NEXUS IN AFRICA

Goals

The WEFE Nexus informs the EU's international water-related strategies. The [Council Conclusions on Water in the EU's External Action](#) emphasise the importance of the WEFE Nexus for addressing sectoral synergies and trade-offs. The [Council Conclusions on Water Diplomacy](#) and the Directorate-General for International Partnerships' [Strategic Plan 2020-2024](#) acknowledge the connection between water, energy, and food, yet do not explicitly promote the WEFE Nexus. The WEFE Nexus will likely play a role in [the new EU Water Resilience Strategy](#). The [African Water Vision 2025](#) and the [African Ministers' Council on Water Strategy 2018-2030](#) guide the EU's water cooperation activities in Africa, emphasising water's role in food and energy security and promoting the Nexus approach as an instrument. Key EU players in the Senegal and Zambezi River Basins, including the European Commission, European Investment Bank and the EU's Joint Research Centre (JRC), focus on enhancing Nexus governance, promoting cross-sectoral approaches in infrastructure projects and supporting Nexus research.

Projects

The EU has supported numerous projects on the WEFE Nexus. [The Nexus Regional Dialogues \(NRD\) Programme](#) (2016-2023) aimed to institutionalise the approach in governance structures and investment decisions, including the Niger basin in Northern and Southern Africa. Implemented by the German Development Cooperation Agency (GIZ) and co-financed by the EU, the NRD programme carried out numerous workshops, projects, and Nexus assessments. It also developed guidelines, studies, policy briefs, and training materials. Through the [ACEWATER project](#), one of its most significant efforts in supporting the WEFE Nexus in Africa, the EU supports [the African Networks of Centres of Excellence](#) in water-relevant research and technology development with an emphasis on WEFE Nexus challenges, currently involving 20 universities and research institutions. The EU has carried out relevant basin-specific projects, such as the [Mékrou Project](#) and the [WEFE Senegal Project](#) in the Senegal River Basin.



Studies

The EU supports research on the WEFE Nexus in several African river basins, including those of the Zambezi and Senegal. The EU's JRC has conducted several Nexus assessments together with local researchers, for example on the [interlinkages of energy development, food security, and ecosystems in the Senegal Basin](#), and developed reports on the implementation of the [WEFE Nexus in Africa. One JRC report focuses on WEFE Nexus implementation in African transboundary river basins,](#)

including the Zambezi and the Senegal Basins, evaluating past activities and providing recommendations for future actions. Other studies with JRC involvement explore the [integration of the WEFE Nexus approach in EU development cooperation and its links with the SDGs](#) and the identification of priorities and challenges in transboundary river basins from a WEFE Nexus perspective.

NEXUS DIALOGUES

While there are different types of Dialogues, **their common goal is the operationalisation of nexus solutions and investments.** In the GoNEXUS project, three Dialogues were conducted for each case study, each targeting specific objectives: the first focused on identifying Nexus challenges, the second on developing solutions and scenarios, and the third on validating modelling outcomes. These two-way discussions enabled research teams to understand the local context of each river basin, ground Nexus assessments in real-world conditions, and provide stakeholders and the convenors with opportunities to learn. In GoNEXUS, these sessions varied in format — physical, online, and hybrid — with 15 to 30 participants, lasting from half a day to two days. By addressing different Nexus challenges and scales, **the Dialogues facilitated comprehensive WEFE Nexus assessments and supported the integration of their outcomes** into natural resource decision-making.

CHALLENGES, OPPORTUNITIES & RECOMMENDATIONS



STAKEHOLDER ENGAGEMENT

Effective stakeholder engagement requires focusing on collectively agreed Nexus challenges, overcoming scepticism towards the WEFE Nexus, engaging diverse stakeholders — including influential and local actors — and ensuring long-term commitment to build trust, ownership, and sustainable impact.

- **The WEFE Nexus is a Western concept and has been met with scepticism by stakeholders in the Global South, compounding effective stakeholder engagement.** Some stakeholders view the WEFE Nexus as abstract and conceptual, and remain doubtful about its usefulness, largely due to the complexity of the approach and limited evidence of its tangible impacts, particularly economic benefits (see our Policy Brief on WEFE Nexus Finance). A significant challenge lies in convincing stakeholders of the added value the WEFE Nexus brings to their work while fostering their active engagement and sense of ownership in the process. This challenge was also evident during the GoNEXUS Dialogues (see Box 1) conducted in the Senegal and Zambezi River Basins, where similar sentiments were observed. To overcome scepticism and build trust and ownership, it is essential to address concrete policy or management challenges that are collaboratively identified and agreed upon with stakeholders and co-develop tailored approaches to each case study. Moreover, as the priorities and challenges evolve over time, the WEFE Nexus framework should be flexible and dynamic to adapt to them. Equally important is focusing on delivering tangible benefits to stakeholders, such as training on modelling techniques or securing long-term Nexus financing. Ultimately, EU-funded projects must pave the way for follow-up investments by African actors, as donor funding for the WEFE Nexus cannot be sustained indefinitely.
- **Implementing the WEFE Nexus in transboundary river basins requires engaging diverse stakeholders across sectors, governance levels, and civil society. In particular, agriculture and energy, the largest water-using sectors, need to be involved.** While its importance is widely acknowledged, creating truly inclusive multi-stakeholder processes remains a significant challenge. In transboundary contexts, power imbalances and capacity disparities between riparian countries often foster distrust and hinder cooperation, complicating efforts to balance sectoral interests and negotiate trade-offs effectively. Gender disparities that favour male-dominated decision-making and the exclusion of marginalised groups further impede equitable participation. Moreover, expanding engagement beyond the water sector requires involving additional stakeholders, which often adds complexity to decision-making processes. In many river basins, water governance focuses on regional and national entities, often excluding local stakeholders who are most affected by unsustainable water management and play a critical role in on-the-ground actions affecting natural resources like subsistence farming. Consequently, their insights are overlooked, creating a disconnection between river basin-scale, national policies, and local-level needs and action.

- > **The need for diversity and inclusivity of stakeholders easily stretches budgets and capacity.** On the one hand, a diverse representation of sectoral interests and values from different scales is needed. On the other hand, a high number of participants limits possibilities for engagement. Moreover, high travel costs and additional coordination can quickly become a bottleneck, especially in large basins like the Zambezi or Senegal, particularly when Dialogues are organised as stand-alone events that require stakeholders to travel from across the basin to a single location. While trying to strike this balance, most case study teams in GoNEXUS wished for more diverse stakeholder representation in hindsight. While compromises are inevitable, leveraging existing events and instructing local partners to execute Dialogues without on-site participation of western project teams can be a cost-efficient strategy. Additionally, given the limited capacity, an intelligent selection process — guided by clear criteria and possibly interviews — should prioritise stakeholders who can provide the most value.
- > **Implementing the WEFE Nexus requires sustained commitment over many years and can only succeed with consistent long-term support encompassing dedicated financial resources, targeted capacity development, and specialised technical guidance.** The GoNEXUS stakeholder Dialogues in the Zambezi and Senegal River Basins, which sought to create an understanding of the Nexus dynamics and identify solutions to Nexus challenges, represent only a small step in a long process. As discussed in the following sections, implementing the Nexus requires extensive efforts, including integrating the approach and assessment results into policies, investment decisions, and management, as well as securing dedicated funding for cross-sectoral projects — all of which must be pursued simultaneously. Sustained stakeholder engagement is essential for the success of all these initiatives. Having initially introduced the WEFE Nexus to African river basins and supported its development over time, donors must now empower RBOs and other basin actors to sustain stakeholder engagement around the WEFE Nexus. Without ongoing dialogue — and platforms or groups for that — and efforts to build local ownership and capacity, activities often halt when projects like GoNEXUS conclude, leading to wasted investments and a loss of momentum for sustainable change.



Engage diverse stakeholders, including high-level decision-makers and powerful industry leaders, focusing on collectively agreed management or policy challenges to ensure Nexus projects effectively inform transboundary natural-resources decision-making. Securing high-level decision-makers requires strong local networks and dedicated resources for invitation management, which should be included in project budgets to maximise impact. Equally important is focusing on delivering tangible benefits to stakeholders, such as offering training on modelling techniques or Nexus financing. It is crucial to include local stakeholders who drive on-

the-ground actions and marginalised communities, as they are often overlooked in decision-making. Furthermore, effective stakeholder engagement demands both sustained long-term commitment from donors and the development of local ownership and capacity to ensure continuity beyond project timelines. Integrating Nexus Dialogues into existing events, like RBO working group meetings, can lower costs and encourage diverse participation. Given limited capacity, a well-designed selection process with clear criteria and potentially interviews should be used to prioritise stakeholders who can provide the highest value.



POLICY FRAMEWORKS & INTEGRATION

For the WEFE Nexus to enter practice at all levels, it must become part of existing basin-wide strategies and plans and especially national policy. RBOs play a leading role in this integration and mainstreaming process.

- > **The WEFE Nexus is not an end goal but [a tool to advance Integrated Water Resources Management \(IWRM\)](#), a coordinated approach to managing water, land, and resources while ensuring ecosystem sustainability.** Operationalising WEFE Nexus activities should avoid creating parallel or stand-alone Nexus policies, strategies or governance structures and instead focus on strengthening existing ones. Moreover, those aiming to operationalise the WEFE Nexus must recognise it as a valuable tool for fostering cross-sectoral approaches to sustainable water management, but not the only one. Its relevance — and whether it is the best choice among existing tools — often depends on the

context. For example, WEFE Nexus activities are less prevalent in Asia than in Africa due to differing regional priorities or governance structures. Furthermore, initiatives that are not explicitly labelled as WEFE Nexus can still be cross-sectoral and effective in addressing interconnected challenges.

- **Basin-wide strategies and plans are a good starting point to establish and mainstream Nexus solutions in transboundary river basins.** As the permanent coordinator of cross-border water governance, RBOs offer a long-term, multi-sectoral perspective, unlike national governments, developing river basin plans or investment plans that guide water management and development decisions. The Zambezi Watercourse Commission (ZAMCOM), for example, integrated the WEFE Nexus into its main strategy ([The Strategic Plan 2018-2040](#)). This strategy, informed by several scenario-based assessments that include modeling of future sectoral water developments and outlining solutions, has in turn been used by ZAMCOM to guide investment decisions. Despite these efforts, translating Nexus goals from strategy into concrete, actionable measures remains a significant challenge, and the implementation deficit in [the Zambezi Basin is no exception](#) among African river basins. Nevertheless, more and more initiatives are emerging, including [the Programme for Integrated Development and Adaptation to Climate Change in the Zambezi Watercourse](#) financed by the Green Climate Fund, which seeks to strengthen climate-resilient investments in the WEF sectors.
- **Successful implementation depends on embedding Nexus goals and principles within national policy frameworks, as well as securing support from key stakeholders with decision-making power.** Basin-wide policies and strategies — which are rarely legally binding — offer valuable strategic guidance, helping riparian countries integrate basin-wide objectives into national sectoral policies, regulations, planning, and management across WEFE sectors. This national-level policy integration and mainstreaming is crucial, as many RBOs generally lack the mandate for direct implementation. Implementation is ultimately driven by ministries, agencies, and authorities alongside businesses and NGOs in the riparian states, within and beyond the water sector. The EU and other donor agencies should support these processes to integrate the WEFE Nexus into policy or planning (including the evaluation of planned infrastructures using Nexus criteria). Institutional and policy support by donors, such as the project on protecting transboundary waters in the Southern African Development Community (SADC) region implemented by GIZ, should integrate WEFE Nexus principles and assist RBOs in mainstreaming them. This can be achieved by incorporating the WEFE Nexus into basin management plans or investment strategies, while building on and aligning with the widely adopted IWRM approach.
- **The integration of the WEFE Nexus into regional strategies or climate strategies and instruments for implementation such as Nationally Determined Contributions (NDCs) can support the harmonisation of different water-relevant policies and strategies.** For instance, the NRD programme led to the development of a [WEF Regional Governance Framework in Southern Africa](#), which garnered high-level political buy-in. Approved by SADC ministers of water and energy, this framework has the potential to drive Nexus implementation at both national and local levels. Moreover, integrating the WEFE Nexus into national strategies for fulfilling global commitments, such as the NDCs, can unlock additional funding opportunities, as donors often prioritise alignment with such commitments. [Early examples](#) show that the Nexus approach can also lead to better cross-border solutions for natural resource management as well as enhance inter-sectoral coordination and planning, policy coherence and support the synergistic implementation of National Biodiversity Strategies and Action Plans (NBSAPs) alongside NDCs. This integration, in turn, optimises project financing, minimises duplication, and ensures more efficient use of limited resources.



Support RBOs to mainstream cross-sectoral approaches beyond basin plans and strategies into national-local policies and planning that drive decisions in natural resource management while using them as tools to synergistically implement multi-sectoral policy goals. Donors' institutional and policy support programs, such as the one on [transboundary water management in the SADC region](#) implemented by GIZ, should integrate WEFE Nexus principles and assist RBOs in mainstreaming the approach, especially into national and local-level policy that strongly affects natural resource decisions in the riparian countries. Generally, operationalising the WEFE Nexus activities should avoid creating parallel or

stand-alone Nexus policies, strategies or governance structures and instead focus on strengthening existing ones. Alongside advancing IWRM across water-related policies and strategies — the core goal of the WEFE Nexus — [emerging evidence](#) suggests the WEFE Nexus can align and harmonise national strategies, such as NDCs and National Biodiversity Strategies and Action Plans (NBSAPs). This alignment can optimise project financing, minimise duplication, and ensure more efficient use of limited resources while unlocking new funding opportunities by enabling water projects to access funds from other sectors, especially climate finance.

RBOs play a central role in coordinating WEFE Nexus efforts in transboundary river basins, and their existing working groups and formats should be leveraged to strengthen this role, avoiding the duplication of efforts through parallel structures.

- **While RBOs and regional entities like SADC provide essential coordination in transboundary basins, actual implementation, as aforementioned, rests with the riparian states.** Sectoral ministries and water agencies control resource allocation and infrastructure development decisions, while local NGOs and communities directly influence resource management practices and conservation efforts. For WEFE Nexus mainstreaming to succeed, donor interventions must target this full spectrum of stakeholders. In transboundary river basins, RBOs are best positioned to lead Nexus governance, and they have done so, alongside regional organisations like SADC or the Global Water Partnership (GWP). They can facilitate ongoing dialogue (for example, on joint infrastructure development) and spearhead efforts to mainstream cross-sectoral approaches into national and local decision-making processes. However, much depends on their institutional structure and mandate, as well as resources and capacity.
- **Different ways and formats to foster cross-sectoral exchange and collaboration are required both regionally between countries and ministries and vertically across government levels.** In many river basins, silo-dominated institutional cultures limit cross-sectoral exchange, with GoNEXUS revealing that stakeholders valued Nexus Dialogues as important opportunities for such interaction — a benefit similarly provided by global platforms like the WEFE Nexus Task Force meetings organised by the [United Nations Economic Commission of Europe \(UNECE\)](#). At the same time, donors must acknowledge that cross-sectoral coordination and decision-making frameworks often exist in the Global South, albeit in many cases underperforming. Prior to advancing new WEFE Nexus initiatives (like online platforms or Nexus-specific working groups), a thorough analysis of these institutional structures is essential.
- **Instead of creating new governance structures, the WEFE Nexus should be mainstreamed through existing institutional frameworks, while cross-sectoral coordination capacities and mandates should be strengthened rather than establishing parallel mechanisms.** For example, to mainstream the Nexus approach, the SADC extended its central water dialogue platform to include energy and food sectors. Using existing cross-sectoral technical working groups can further promote such exchange and facilitate mainstreaming. With the support of GWP Southern Africa, ZAMCOM organised the third [Zambezi Basin Stakeholders' Forum](#), which aimed to identify application possibilities of the WEFE Nexus to support decision making. The Senegal River Development Organization (OMVS) employs effective formats for water governance and river basin planning, such as the Permanent Water Commission and the Basin Committee, which can also serve as platforms for integrating the WEFE Nexus. Donors should encourage projects like GoNEXUS to utilise existing platforms and strengthen the cross-sectoral coordination capacities and mandates, improving their ability to mainstream the WEFE Nexus.



Leverage existing working groups or platforms to mainstream the WEFE Nexus and strengthen their capacities and mandates, avoiding the creation of new, parallel governance structures. Building on examples such as SADC's expansion of its central Water Dialogue to include energy and food sectors or ZAMCOM's focus on the WEFE Nexus at the [third Zambezi Basin Stakeholders' Forum](#), existing events, platforms, or working groups can effectively promote cross-sectoral coordination. Strengthening these structures may involve providing targeted training, expanding their mandates, or enhancing their

technical and financial resources to address Nexus challenges more comprehensively. The best solutions will depend on local circumstances. A comprehensive analysis of institutional structures is essential before advancing new Nexus initiatives to ensure alignment with existing ones and to address potential gaps in performance. The EU and other donors should also encourage research projects like GoNEXUS and other Nexus activities to prioritise existing platforms and invest in building their cross-sectoral coordination capacities wherever possible during the project's duration, as African RBOs often have limited resources.



CAPACITY, EXPERTISE & SKILLS DEVELOPMENT

Nexus research requires RBOs to gather data from non-water sectors and develop new analytical frameworks and modelling capabilities. The EU should aim to empower actors to independently conduct Nexus research in the long term.

- **While there is a growing shift towards empowering local actors and fostering collaborative approaches, recent studies highlight that the majority of Nexus research continues to treat non-academic partners as end-users rather than co-creators of knowledge.** Additionally, in the Global South, Nexus research is often led by Western researchers and consultants, primarily due to their access to advanced tools, expertise, and funding. In the GoNEXUS project, African partners from the Zambezi and Senegal River Basins contributed by organising dialogues and providing inputs, but there remains significant potential to involve them more closely in research and modelling exercises. The EU and other donors should require the active involvement of African scientists in research projects, not only in providing inputs but also in writing the proposals, conducting modelling and co-producing scientific publications. Such engagement enhances institutional learning and fosters a sense of ownership — both critical for the long-term success of WEFE initiatives. Ultimately, the EU's goal should be to empower African stakeholders to independently conduct Nexus research and adapt tools and models to local needs.
- **Additionally, the complexity of Nexus assessments and the associated modelling approaches often exceeds the technical expertise of African stakeholders.** Nexus assessments demand extensive and integrated data sets, sophisticated modelling approaches, and cross-sectoral expertise. Unlike traditional water management, which focuses primarily on water, Nexus assessments address the interconnections and trade-offs among various sectors, requiring more complex analytical frameworks and tools. These demands can easily exceed the capacity and skills of RBOs and research institutes seeking to conduct Nexus research or participants of Nexus Dialogues. EU-funded research projects like GoNEXUS, while benefiting European researchers, should prioritise extensive capacity-building and hands-on learning when involving case studies in the Global South. This could include initiatives like PhD sandwich programs and training in data collection, analysis, quality assessment, storage, and management. Resources and research capacity in African river basins are often severely limited, making even small capacity-building and knowledge transfer initiatives relevant. When well designed, these efforts create win-win outcomes for all project partners.
- **The underperformance of transboundary water governance across the continent, including capacity and data challenges related to Nexus research, highlights institutional weaknesses that cannot be addressed through standardised or short-term interventions.** Instead, progress requires basin-specific analyses of capacity gaps and historical challenges, paired with tailored solutions that reflect each basin's unique context. The JRC has led the development of a [comprehensive report](#) that mapped current challenges and strengths and provided recommendations for strengthening the science-policy transfer in transboundary river basins in Africa, including the Zambezi and Senegal River Basins. The JRC and other EU players have also supported RBOs and regional research centers through projects like [ACEWATER](#), which focuses on capacity building, data sharing, and technology transfer or regional water-relevant networks such as [SADC's WaterNet](#). However, as the JRC report also highlights, despite advances, achieving meaningful improvement of capacity and expertise will require substantially increased investment. African governments often lack both financial capacity and political incentive to prioritize these investments amid competing political demands for very limited resources.





Engage RBOs, local scientists, and technicians as equal partners in Nexus research, empowering them with skills and training to independently lead future Nexus research and drive cross-sectoral approaches in day-to-day activities. In research projects, African stakeholders should not merely be treated as end-users of academic research, as is still often the case, but as partners in defining challenges and co-creating solutions. This means involving them — as highlighted throughout this policy brief — early at the proposal stages, focusing on their interests and building capacity to empower them to conduct Nexus research independently in the long run. Improving capacity may start with RBOs, but should also involve regional actors, such as the aforementioned SADC WaterNet, and eventually target higher education.

Measures should include further capacity building on data collection and analysis, earth observation science and research, interdisciplinary approaches, teaching and outreach. However, the underperformance of transboundary water governance in Africa, including Nexus-related capacity and data challenges, highlights deep-seated institutional weaknesses that cannot be resolved with standardized, short-term solutions. The EU recognises these underlying challenges, for example in [a recent JRC report](#), and has undertaken a range of meaningful initiatives. One significant measure is the EU-funded ACEWATER program, now in its third phase, which provides research, technical support, facilitation of stakeholder engagement and collaborative networks to the earlier mentioned African Water Centres of Excellence.



5 INFORMATION SYSTEMS, INFRASTRUCTURES & DATA SHARING

Data scarcity, constrained infrastructures and insufficient models among RBOs and other basin actors pose significant challenges to Nexus research. Local solutions and alternative data resources can provide useful workarounds.

- **While there is a growing body of research on the WEFE Nexus in Africa, gaps remain in data availability, real-time monitoring, and integration of traditional knowledge.** This poses fundamental challenges to Nexus research and assessments and water resources management as a whole. This issue is particularly pronounced in transboundary basins. Riparian countries are often hesitant to share data, among others, because of mistrust, while different national datasets may be incompatible, requiring harmonisation across different scales. Moreover, as aforementioned, pursuing Nexus research requires more complex datasets, such as data on energy or agricultural metrics not readily available for RBOs and water-relevant actors. The lack of high-resolution and meteorological data was highlighted by the GoNEXUS Dialogues as a specific example. Additionally, technical infrastructure and computational power limitations often hinder the ability to process and analyze such complex datasets. The acquisition of high-quality data can also be costly, further constraining research efforts.
- **Importantly, while data and other technical challenges can impair the efficacy of Nexus assessments — and any other aspects of water resources management — they are not the primary barrier to the slow pace of implementation of cross-sectoral approaches,** which remain constrained by multiple factors, particularly insufficient funding and limited political will. In fact, in the Zambezi River Basin, for example, multiple analyses, including those underpinning the Strategic Action Plan, have established a relatively solid analytical foundation for Nexus decision-making. However, translating this analytical groundwork into actionable measures — such as hydropower and irrigation projects with robust environmental and social safeguards, or prioritising Nature-based Solutions over traditional concrete-and-steel infrastructure — remains a significant challenge, as [a study on WEFE Nexus implementation in the Zambezi River Basin highlights](#).
- **Poor data availability is a structural challenge stemming from various conditions, from chronic underfunding to low political prioritisation, and there are no quick fixes available, as aforementioned.** To improve data availability, there is a need for long-term funding of monitoring stations and earth observation, harmonising methodologies for data collection and analysis, and improving accessibility, for example through open-access data strategies and data-sharing protocols. Moreover, it is crucial to create and maintain national, regional and continental hubs for data sharing and build trust through continuous engagement and collaboration between researchers and authorities responsible for data collection and management. To specifically support Nexus research, assessments, and decision-making, there

are additional tasks and requirements, including the establishment of policy agreements on WEFE Nexus data, fostering multi-sectoral exchange on data and developing commonly used Nexus indicators. The EU and other donors should incorporate WEFE Nexus-specific data and analytical requirements into their support activities, as demonstrated in initiatives like the ACEWATER project.

- **Most WEFE Nexus analysis methods, tools, and models were developed in Western countries where data and resources are often more readily available.** Guiding natural resource management in Africa effectively through the WEFE Nexus approach requires the development of region-specific models and decision-support systems. However, this can be challenging for African actors, including RBOs, due to limited capacity, infrastructure, and scarce data. Nonetheless, while Nexus-oriented decision-making in Africa faces significant technical obstacles, locally driven solutions can provide practical alternatives and still yield meaningful results. For example, a fully holistic model is not always essential in African contexts. Instead, connecting existing local models— which are already familiar to and trusted by local experts — can often be more effective. When data is limited, practical qualitative modelling can be used to map the WEFE system, identify priorities, and highlight trade-offs for further discussion and negotiation. Additionally, studies highlight that sound scientific and statistical methods, combined with local and indigenous knowledge, can partially mitigate data gaps. Therefore, the EU and donors should promote solutions tailored to local circumstances for maximum effectiveness.



Ensure EU-funded Nexus projects always strengthen data infrastructures and accessibility in African transboundary river basins beyond the project timeline, where sophisticated data needs for cross-sectoral water management face limited governmental support and resources.

The GoNEXUS project highlighted key challenges, such as the unavailability of essential data (e.g., meteorological and high-resolution data), the fragmentation of existing data across multiple databases and expensive access. While the EU is driving important efforts to improve data availability and access (e.g., through initiatives like the ACEWATER

project), the [JRC and other actors](#) stress the need for more investments in data collection and analysis. This includes supporting cross-border initiatives to harmonize datasets, funding open-access resources, and optimising existing information systems (e.g., Decision Support Systems, the primary databases of RBOs) and invest in data infrastructures. Furthermore, addressing Nexus-specific data needs is essential. This requires establishing policy agreements that incorporate WEFE Nexus requirements, fostering multi-sectoral collaboration on data sharing, and developing standardised Nexus indicators to enable consistent and effective assessments.



GUIDANCE, TOOLS & LESSONS LEARNT

The operationalisation of the WEFE Nexus in Africa has been supported by various tools and frameworks. However, these tools and guidelines must be continuously updated to address gaps, including the integration of ecosystems and social aspects, and tailored to local contexts for effective implementation.

- **Various tools have evolved that can facilitate the operationalisation of the WEFE Nexus in different areas, from understanding the WEFE Nexus to improving investment decisions.** Developed under the NRD Programme, the [WEF Nexus Tool 2.0](#) is a scenario-based tool that quantifies interconnections between WEF sectors while accounting for population growth, economic shifts, policies, climate change, and other stresses. It enables users to create country-specific scenarios, identifying current and future resource bottlenecks, trade-offs, and opportunities to address resource allocation issues. Developed in the [WEFE Senegal Project](#), the [E-Nexus Decision Support System](#) combines tools and models to aid environmental analysis and forecast, helping decision-makers explore policy solutions, assess trade-offs, and identify key triggers. It also includes features to enhance access to real-time weather data and automatically focus on the most relevant information. The [SADC's WEF Nexus Investment Screening Tool](#) is another example, which identifies and evaluates cross-sectoral investment projects for their impact.

➤ **The operationalisation of the WEFE Nexus can also benefit from the adoption of regional guidelines or frameworks.** The [Southern African Development Community's \(SADC\) WEF Nexus Governance Framework](#) was developed to help policymakers evaluate the feasibility of new development projects against WEFE Nexus criteria and to coordinate priorities amongst WEFE sectors. Based on this framework, ZAMCOM is currently planning to develop a WEFE Nexus guideline for the Zambezi River Basin to facilitate water resources decision-making. While this is a desirable development, any standalone WEFE Nexus Strategy, however, should serve a clear purpose and address specific challenges rather than being developed merely as a procedural exercise, which interviewees observed happening in some places.

➤ **Across our three policy briefs, we emphasise the need for continuous updates to these frameworks, tools and guidelines.** The majority of the existing tools and guidelines disregard social and ecological aspects, especially those that evolved in the NRD programme, focusing instead on the WEF Nexus. Originally, the WEFE Nexus focused solely on the WEF sectors, with ecosystems being incorporated only in more recent efforts. Tools and guidelines must be updated, as the Nexus approach cannot effectively contribute to sustainable water management unless ecosystems are fully integrated into Nexus assessments and investment decisions, as called for by an [increasing group of Nexus researchers](#). The same applies for social aspects such as health. Accordingly, EU funding should require the integration of ecosystems and key social considerations as a prerequisite for supporting new Nexus projects. The [Water, Energy & Food Security Resource Platform](#) hosted by GIZ may still be the best place to collect and provide updated frameworks, tools, and guidelines.

➤ **Future efforts will benefit from a comprehensive stocktaking and the development of an action plan to advance the operationalisation of the WEFE Nexus in Africa.** Since its inception, numerous projects and initiatives have generated valuable insights and lessons learnt. While some evaluations, such as GIZ's [lessons-learnt study on the NRD programme](#) and its [analysis of WEF Nexus finance](#), have provided recommendations, future EU action should be informed by a thorough review of past projects to develop an action plan with key steps for institutionalizing the WEFE Nexus approach in Africa. This evaluation should also assess existing frameworks, tools, and guidelines, identifying areas that require further development. [UNECE's Task Force on the WEFE Nexus](#) could serve as a suitable platform to initiate this effort, while the TEI-TWM Africa could co-finance it. A robust action plan of this kind would be a crucial step in further empowering governments, NGOs, and other stakeholders in the Global South to adopt and implement cross-sectoral water management approaches independently, thereby gradually reducing reliance on donor-driven models.



Develop an action plan to institutionalise the WEFE Nexus in African transboundary basins cost-efficiently, drawing on existing implementation experience, lessons learnt and stakeholder consultations, and by updating existing tools and guidance, particularly by including ecosystems. Since its inception, numerous projects and initiatives have generated valuable insights, experiences and good practices. While some evaluations, such as [GIZ's lessons-learnt study on the NRD programme](#) and its [analysis of WEF Nexus finance](#), have provided recommendations, future EU action should be informed by a thorough review of past projects, including evidence on the economic benefits (see our Policy Brief on WEFE Nexus Finance), and consultations with African stakeholders to identify

needs and key future steps for institutionalising the WEFE Nexus approach in Africa. This evaluation should also assess existing frameworks, tools, and guidelines, with particular emphasis on integrating ecosystems and social dimensions, such as health, and explore ways to upscale currently costly WEFE Nexus activities cost-efficiently. [UNECE's Task Force on the WEFE Nexus](#) could serve as a suitable platform to initiate this effort, while the TEI-TWM Africa could co-finance it. A robust strategy of this kind would be crucial in empowering governments, NGOs, and other stakeholders in the Global South to adopt and implement cross-sectoral water management approaches independently over the long term, gradually reducing reliance on donor-driven models — which should remain the overarching goal.

Imprint

This policy brief is the first among three policy briefs on EU Water Cooperation and the WEFE Nexus as part of the EU Horizon 2020 Project [GoNEXUS](#). It draws on the Nexus Dialogues carried out within the project and on 12 interviews with representatives from DG INTPA and JRC and global institutions such as UNECE, river basin organisations, NGOs and scientists. It was reviewed by Patricia Garcia Marcos and Marco Pastori (JRC), Gerald Mundondwa (ZAMCOM), Guido Schmidt (Fresh Thoughts Consulting), Laura Seguin (BGRM), Awa Niang Fall (Cheikh Anta Diop University), Laurent Bruckmann (Université Laval). GoNEXUS aims to create a framework for innovative and sustainable governance of the WEFE nexus, integrating policy changes, technical measures, and participatory Nexus Dialogues using scenario-based models.scenario-based model.

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Coordination & Contact




André Müller

Advisor

✉ mueller@adelphi.de



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