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Supporting transboundary water cooperation:

LEARNING FROM WATER-STRESSED BASINS IN WEST AFRICA

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Effective and collaborative management of water resources across borders can enable peace, food security and resilience. As water scarcity and water stress are growing worldwide, most river basin organisations seem to acknowledge the need for transboundary water cooperation. Yet the agreements reached therein suffer from persistent under-implementation.

This paper looks at two transboundary basins, namely the Niger and Senegal river basins, which are a priority for the European Union (EU), as the ability to effectively respond to the effects of climate change and water stress in the region is crucial for the credibility of EU external action. It argues for an alternative approach to supporting transboundary water cooperation, compared to more traditional and linear development thinking that usually underpins EU support.

The EU's fairly principled approach to supporting transboundary water cooperation needs to be more pragmatic and politically smart to understand, promote and support necessary policy change. Transboundary water cooperation needs to be problem-driven to make sure regional commitments are implemented. It also needs to focus on the provision of tangible public goods, creating new opportunities for cross-border management of resources.

The examples from the Niger Basin Authority and the Organisation pour la mise en valeur du fleuve Sénégal show that ultimately member states' political interests define the feasibility of regional agreements on the use of cross-border water resources. These examples highlight the need to manage different sectoral interests both at the national and regional level, and show the limits of a one-size-fits-all approach to addressing water problems.

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Acronyms

AEWPP	Africa-EU Water Partnership Project
AFD	Agence Française de Développement
AfDB	African Development Bank
AICS	Agenzia Italiana per la Cooperazione allo Sviluppo
AU	African Union
AWG	Africa Working Group of EUWI
BMZ	Federal Ministry of Economic Cooperation and Development, Germany
CBD-COP15	Convention on Biological Diversity - 15th Conference of Parties
CIWA	Cooperation in International Waters in Africa
CODEV-PI	Council Working Party on Development Cooperation and International Partnerships
COHAFA	Council Working Party on Humanitarian Aid and Food Aid
COP26	26th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC)
DW	Deutsche Welle
EC	European Commission
ECDPM	European Centre for Development Policy Management
EEAS	European External Action Service
EGD	European Green Deal
EU	European Union
EUD	European Union Delegation
EUGS	European Union Global Strategy
EUMS	European Union Member State
EUSR	European Union Special Representative

EUWI	EU Water Initiative
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GWP	Global Water Partnership
HoM	Head of Mission
ICWE	Dublin International Conference on Water and the Environment (1992)
IIED	International Institute for Environment and Development
IISD	International Institute for Sustainable Development
IUCN	International Union for Conservation of Nature
IWRM	Integrated Water Resource Management
JRC	European Union Joint Research Centre
MENA	Middle East and North Africa
NBA	Niger Basin Authority
NDICI-Global Europe	Neighbourhood, Development and International Cooperation Instrument - Global Europe
NGOs	Non-governmental Organisations
NRC	Norwegian Refugee Council
OMVS	Organisation pour la mise en valeur du fleuve Sénégal
PADD	Plan d'Action de Développement Durable
RBO	River Basin Organisation
RPG	Regional Public Good
SADC	Southern Africa Development Community
SDGs	Sustainable Development Goals
SIWI	Stockholm International Water Institute
UN	United Nations
UNECE	United Nations Economic Commission for Europe
WB	World Bank
WEF	Water Energy Food
WEFE	Water Energy Food Ecosystem
WFD	Water Framework Directive

Executive Summary

This paper builds on existing and new analysis on two transboundary basins, namely the Niger river and Senegal river basins to illustrate the challenges and specific opportunities of water resource management in complex regional settings. We argue for an alternative approach to supporting transboundary water cooperation in EU external relations. Applying a problem-driven approach to transboundary cooperation can help avoid persistent under-implementation of regional commitments, refocus cooperation on the provision of tangible public goods, creating new opportunities for cross-border management of resources.

2021 is a pivotal year for action on climate (COP26), biodiversity (CBD-COP15) and sustainable food systems (Food Systems Summit), and the EU has positioned itself as a global leader in green transition, climate change adaptation and climate diplomacy. Effective transboundary water cooperation is strongly linked to these ambitions and it can be a critical entry point for the operationalisation of the external dimension of the European Green Deal. This, however, may require a shift in how European actors approach and support transboundary water cooperation.

Drivers and blockers of transboundary water cooperation

Transboundary water cooperation in the Niger and Senegal basin illustrates the importance of understanding and integrating hydropolitics in a cross-sectoral and multi-level approach to water cooperation. It also shows the limits of a one-size fits all approach to addressing water problems. The Senegal basin's Organisation pour la mise en valeur du fleuve Sénégal (OMVS) is often seen as an example of peaceful and effective transboundary cooperation in Africa and it has served as a model for other African River Basin Organisations (RBOs). It has been able to show clear benefits to its members even in the context of political instability. The experience of the OMVS, however, has proven difficult to replicate elsewhere, including in the Niger Basin Authority (NBA), which faces difficult tradeoffs between agricultural production, environmental protection and energy development across a very large and diverse river basin.

Both case studies illustrate that while the need for collective action in a water-stressed environment is clear, developing a regionalised management of water and related resources is a highly complex and politically sensitive exercise. RBOs are first and foremost intergovernmental institutions, which also means that they are fundamentally constrained by what their member states allow them to do, regardless of the perceived benefits of regional action. At a minimum, they can serve to channel resources towards their member states. At best, by pooling financial resources and capacity, the organisation can build up momentum for regional cooperation, through providing tangible benefits to its member states.

Transboundary water cooperation in EU external relations

The EU's approach to international water cooperation essentially stems from its internal policies, most notably the 2000 Water framework directive (WFD), which also marked a turning point in the EU's external ambitions in the field of water. The EU and its member states have long sought to promote a normative approach to water governance and management practices through development cooperation. In the 1990s, the EU and its member states were quick to adopt the concept of Integrated Water Resource Management (IWRM), which in essence is a set of principles that promotes equitable use of resources and environmental conservation of water resources. Over the years, EU development policy has moved from a recognition of the need for water cooperation to a more explicit nexus approach to water management and connected activities. In recent years, the emphasis on the EU's support

to transboundary water cooperation has slightly shifted to advocating a Water-Energy-Food Nexus (WEF) approach. Furthermore, EU external policies make a clear link between water, peace and security. For instance, the 2018 council conclusions on water diplomacy put significant emphasis on ensuring peace and stability in water-stressed areas, and EU support for reconciling riparian countries.

Transboundary water cooperation in EU policy has always been supported and driven by member states and it has gained some momentum recently. A common approach between the EU and its member states will be a key determinant of success of the European Green Deal (EGD), and a key feature of the EU's added value in water cooperation. While it is a relatively small player in transboundary water infrastructure, the EU, along with its member states, has shown a clear commitment to promote a WEF nexus approach in transboundary basins worldwide.

Three lessons from engaging in transboundary water cooperation in development cooperation

Building on the preceding illustrations of the complexity of transboundary water management we can draw three key lessons engaging and supporting transboundary basins through development cooperation.

Lesson 1: Transboundary water management is political. The political economy of water management at member state level defines the feasibility of regional agreements, and informs the level of priority countries will give to their implementation, as well as the countries' willingness to compromise in economic, environmental and social terms to advance certain national interests. Any programme supporting transboundary water cooperation therefore should start with a fine-grained understanding of the different national and sectoral interests at play.

Lesson 2: Principles alone are not enough. A purely normative approach can suggest abstract and disconnected solutions to water resource management but too pragmatic approach can result in lack of ambition e.g. in addressing gender inequalities. Therefore, programmes supporting transboundary water cooperation should complement a principled approach to water resource management with a more pragmatic, and politically smart approach to understanding, promoting and supporting policy change.

Lesson 3: Form should follow function. Support to transboundary water management should adopt a more functional approach, focusing on addressing specific resource allocation problems before institution building and capacity development.

A problem-driven and adaptive approach to transboundary water management

Combining the lessons above calls for a rethink of the traditional, often linear development thinking that usually underpins external support to transboundary water management. The rather orthodox approach of many donors to water management has been increasingly challenged in the 2000s and 2010s, with suggestions to take concrete water management problems as a starting point for action, rather than a top-down basin-wide master plan. A problem-driven approach looks at transboundary water cooperation, not as an end-goal of the fully optimal management of resources, but as an iterative learning process through cross-border interaction and collaboration in response to specific problems such as competing water demands between different sectors and users, or coordination around the construction of upstream infrastructure. Cooperation can be built gradually through sub-basin and bilateral agreements where the interests align or where there is need to cooperate between countries. This may also yield more long-term results.

Eight recommendations for the EU Institutions and EU member states

1. **Place transboundary water management at the heart of the External dimension of the European Green Deal (EGD):** Transboundary cooperation can work as a key driver of effective climate action and sustainable development. A critical mass of EU and member state resources will be needed for the EU to retain its credibility as a water diplomacy actor. This includes re-evaluating and strengthening the EU's investment in water infrastructure in Africa.

2. **Include a strong political component from the start**: Programmes need to include an in-depth analysis of the political economy of transboundary water cooperation in the design phase and throughout implementation.

3. **Make better use of the political and diplomatic architecture of the EU:** To more effectively address transboundary water problems, development and diplomacy need to come together. EU Heads of Mission (HoMs) can provide momentum for a joined-up European approach, and staff working together in EU missions and Delegations can ensure a consistent and shared flow of relevant information and analysis. HQ level prioritisation of transboundary water challenges can further enable effective EU action.

4. **Rethink the scale of transboundary water cooperation:** A basin-wide master plan is not always the most suitable way to broker cooperation in practice, because water problems are often highly localised. Diplomatic initiatives and supported programmes should seek out opportunities for greater collaboration at the bilateral or even local level, which is where most decisions are taken.

5. **Mainstream adaptive programme design:** Programmes should integrate a problem driven and adaptive approach as a core design feature. This allows working on specific transboundary and WEF nexus challenges, adapt and redirect means and support to where there is greater traction.

6. **Make better use of the EU's network in basin countries:** Focusing on regional organisations alone without accompanying measures at national or even local level may lead to programmes being implemented in a somewhat virtual environment. The existing EU institutions and member states infrastructure at times remains underused. EU delegations in particular could designate focal points in the host countries of river basin organisations to increase proximity and dialogue not limited to specific support programmes.

7. **Seize opportunities presented by the EGD, NDICI-Global Europe programming and Team Europe:** With NDICI-Global programming on-going, and Team Europe high on the policy agenda now is a good moment to adapt and create new smarter initiatives with adaptation built into the design of new actions for the period 2021-2027.

8. **Strengthen the gender sensitivity in transboundary water cooperation:** Programmes should include a gender dimension to make sure that women and vulnerable groups are adequately represented in the decision-making. The current programming period creates opportunities for a stronger gender perspective in EU support to transboundary water cooperation.

Introduction

Effective and collaborative management of water resources across borders and across water resource users is a key condition for sustainable development, it is often also seen as a potential vector for peace, (food) security and resilience. Water scarcity and water stress are growing worldwide, yet risks increase more rapidly in some parts of the world than in others (Medinilla 2017a: 7). West Africa and the Sahel in particular has faced dramatic climate variability since the 1970s, resulting in rising temperatures and changing rainfall patterns affecting the hydrological regimes of major watercourses like the Niger and Senegal rivers. More frequent droughts and destructive flooding are further exacerbated by human activity and insufficient mitigation (Elagid et al. 2021).

Water shocks not only have severe environmental effects, they lead to changes in access to clean water, and exacerbate violent conflict (DW 2021), mass displacement (NRC 2021), food insecurity and humanitarian crisis (Madgwick et al. 2017). The transboundary basins of the Western Sahel are high-risk contexts, they are also a critical priority for the EU and international community. The ability to effectively respond to the effects of climate variability and water stress in the region is critical for the credibility of EU external action across the domains of climate change, development cooperation, humanitarian aid, peace and security and migration. The EU has also recently acknowledged the exacerbating effects of COVID-19 on various long term risks in the Sahel, including those related to water (Council of the European Union 2021).

2021 is a pivotal year for action on climate (COP26), biodiversity (CBD-COP15) and sustainable food systems (Food Systems Summit), and the EU has positioned itself as a global leader in green transition, climate change adaptation and climate diplomacy. Effective transboundary water cooperation has a strong link with all three of these ambitions. It can also be a critical entry point for the operationalisation of the external dimension of the European Green Deal and the more effective programming of the EU's external financial instruments for the period 2021-2027. Doing so at scale, however, may require a qualitative shift in how European actors approach and support transboundary water cooperation.

While the Western Sahel's transboundary basins experience significant climate and water stress, they are also home to unique forms of transboundary water cooperation. This paper builds on existing and new analysis on two transboundary basins, namely the Niger river and Senegal river basins to illustrate the challenges and specific opportunities of water resource management in complex regional settings. It zooms in on the hydropolitics and cross-sectoral dynamics in these two basins, looks at the experiences of EU support to transboundary water cooperation, and draws key lessons from engaging and supporting transboundary water cooperation in (EU) development cooperation and wider EU external action.

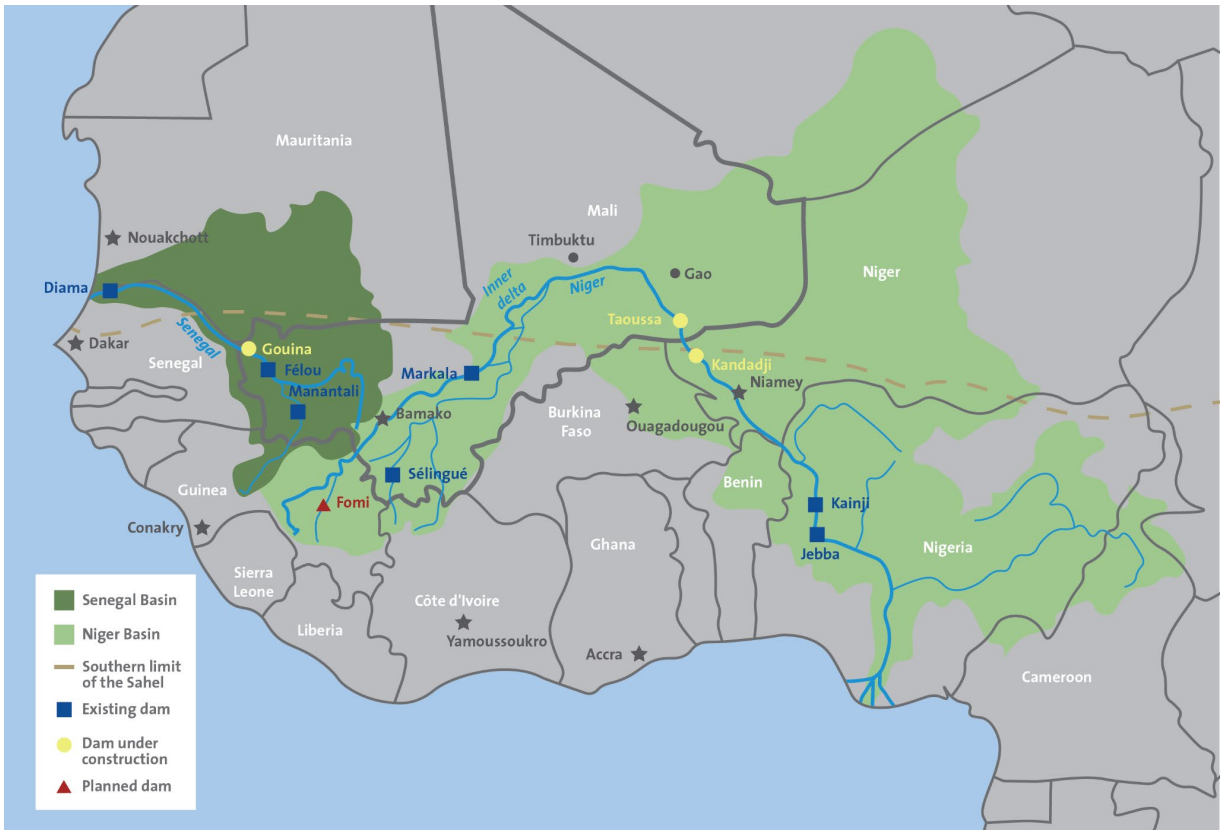
We argue for an alternative approach to supporting transboundary water cooperation in EU external relations. Applying a problem-driven approach to transboundary cooperation can help avoid persistent under-implementation of regional commitment, refocus cooperation on the provision of tangible public goods, and create new opportunities for cross-border management of resources.

1. Drivers and blockers of transboundary water cooperation

The different experiences of transboundary water cooperation in the Niger and Senegal basin illustrate the importance of understanding and integrating hydropolitics in a cross-sectoral and multi-level approach to water cooperation. They also illustrate the limits of a one-size fits all approach to water problems in the African transboundary basins.

The Niger and Senegal basins both have part of their headwaters located in the Guinean highlands. With its 4,200 km, the Niger River is the continent's third longest river, traversing no less than nine countries from source to the Niger delta in Nigeria. As the main source of freshwater for Mali, Niger and Nigeria the river touches the life of around 100 million people that live in the basin (Medinilla 2017a: 5; Andersen et al., 2005). The Senegal basin is of a more modest size, but of equally critical importance for Senegal, Mali and Mauritania in particular. Both river basins have a decades-long history of transboundary cooperation through their respective river basin organisations, the Niger Basin Authority (NBA) and the Organisation pour la Mise en Valeur du Fleuve Sénégal (OMVS). While the two basins share some features, they also illustrate how transboundary cooperation is always highly context specific.

Figure 1: Map showing the Niger and Senegal basins with selected major infrastructure works



Source: Adapted from [Medinilla and Ronceray 2019: 4]

Box 1: Water cooperation and the provision of regional public goods (RPGs)

Transboundary water is renewable, but only up to a point and subject to overuse. The effects of unsustainable depletion of a transboundary watercourse are not linear, but can be exponential and extremely costly to reverse. For example, storing too much water during the wet season can lead to rapid ecosystem degradation, while the overuse of water for electricity generation or irrigation can lead to unexpected droughts and food crises. The effects of poor management also tend to be unevenly distributed. Upstream countries are generally at an advantage since the indirect consequences of their consumption are often felt downstream where they can set off a chain of events leading to environmental breakdown or humanitarian crisis.

Behind many transboundary cooperation mechanisms is the idea of regional cooperation as a form of regional public goods provision, which can mitigate the risks of unsustainable resource management by some, and maximise the shared benefits for all. A regional public good creates benefits that are (to varying degrees) non rivalrous and non-excludable. Reducing water pollution for example is fully non-rivalrous, as one party benefiting from it does not reduce another party's ability to do so. It is also fully non-excludable, meaning that a party cannot easily be prevented from enjoying the benefits, even if they have not contributed (e.g. through regulating the discharge of harmful substances). The downside is that this can incentivize freeriding, when parties expect others to provide the regional public good but avoid bearing the costs themselves.

Transboundary water cooperation covers a range of regional public goods, each of which comes with its own dynamics, and with different interests and incentives for riparian countries to contribute (or not) to the collective provision of public goods. This also implies that there is not one set solution for providing these goods.

Flood control, for example, is a 'pure' public good and of critical importance in most African watersheds that are subject to a wet/dry season fluctuation. All basin countries with flood areas benefit from effective flood management. All other countries should also take action to provide this regional public good (e.g. with drainage works, levies). Yet, the actions by some upstream countries will have a much greater impact on flood control, while some downstream countries will more directly enjoy the benefits or suffer the consequences of insufficient contributions upstream. This means that incentives need to be created to maximise provision and focus interventions where their impact is greatest, even if those countries may be less interested in providing those public goods for their own 'consumption'.

Hydropower production, when it reaches a certain scale, becomes a so-called 'club good'. When a dam capacity exceeds the local grid absorption capacity, it is more efficient to engage in cross-border electricity trade. Cooperating with neighbouring countries can bring down the investment cost by increasing the number of investors, increasing the profitability of the project by lowering overhead costs (e.g. grid loss), and help with attracting external funding. Club goods are partially rival for their members and fully excludable to non-members. By restricting the benefits to paying members, the club ensures that these benefits meet or exceed the fees paid by their members. The club in that sense acts as an allocation mechanism, and can create new forms of cooperation in doing so.

The inherent characteristics of these RPGs define the incentives and costs for countries to contribute to their provision through transboundary water mechanisms. Applying an RPG perspective can help programmes to identify specific transboundary problems and explain critical gaps in the provision of water related services, regardless of the agreements that are in place. For a more detailed reflection on RPGs, see Byiers et al 2021.

1.1. The Senegal basin – the rise of a model

The Senegal basin is often seen as an example of peaceful and effective transboundary cooperation in Africa. Through the Organisation pour la Mise en Valeur du Fleuve Sénégal (OMVS), Mali, Senegal, Mauritania and Guinea have developed jointly owned hydropower and other water infrastructure since the late 1980s, an approach that has served as a model for other African River Basin Organisations (RBOs), including the Niger Basin Authority. The experience of the OMVS, however, has proven difficult to replicate elsewhere on the continent since it relies on a unique set of circumstances (Medinilla and Ronceray 2019).

Transboundary cooperation in the Senegal basin should be seen in the specific historical context of the series of Sahel droughts of the late 20th century. The OMVS was established by Senegal, Mali and Mauritania in 1972[1] to better manage water resources for irrigated agriculture in the wake of famines caused by successive droughts and changing rainfall patterns in the Sahel region (Brooks 2006; Medinilla 2017a: 7). The three founding members moved quickly to develop a jointly owned infrastructure plan (1974) to regulate the flow of the water, produce reliable electricity, and reduce silting near the mouth of the river. The first two structures were inaugurated in 1986 (Manantali, Mali)[2] and 1988 (Diama, Sénégal and Mauritania)[3] (Medinilla 2017). These dams allowed the OMVS countries to partly regulate the seasonal fluctuations of the river, well ahead of their regional peers. In the following years, the OMVS consolidated its position and structures and developed a stronger environmental protection mandate. In 2006, Guinea acceded to the organisation, and several projects are being developed to further harness the basin's potential.[4]

The rapid early development of the OMVS stands in stark contrast to the slow integration and relatively shallow cooperation in many other African river basins and is considered a regional success. The organisation is also widely recognised as a driver for regional stability and enhanced cooperation. This can be attributed to a confluence of circumstances, in particular the limited number of countries involved in the Senegal basin arrangement, which allows for a much faster decision-making process than in many other transnational basins. The OMVS was originally set up between only three countries with strong and relatively stable political and economic ties (Bolognesi and Bréthaut 2016). It also responded to a clear and direct need to manage an increasingly scarce resource, and ensure a degree of predictability in the flow of the river, an interest shared by both up- and downstream countries. The OMVS was also able to benefit from important (early) external financing, from the World Bank, and was launched at a time when the momentum and international public opinion was less critical of major dams than it is today.

Today, the OMVS is generally seen as a stable regional organisation, providing energy and flow management as a 'club good'. Member states contribute to the costs of these projects, and benefit in the form of a reliable hydropower allocation at a fixed regional price, which is shielded from market fluctuations[5] (Medinilla and Ronceray 2019). While this means that for example, Mali is only entitled to 52% of the electricity generated by the Manantali dam on its own territory, it gets this at a price that is far more advantageous and more stable than imported electricity from neighbouring countries. Interviews with Malian stakeholders in 2018 showed that while the OMVS is at times seen as too powerful and costly, the benefits of reliability and effective expansion of infrastructure, and steady external finance from development partners for regional infrastructure projects far outweigh any potential benefits the country could generate working unilaterally. Another concrete advantage of the scheme is that the construction of

[1] The OMVS replaced an earlier initiative, which had failed to produce results due to tensions between Senegal and Guinea (Medinilla 2017: 7).

[2] Manatali is a large multipurpose dam on a tributary to the Senegal River in Mali.

[3] Diama is an anti-silting construction in the Senegal delta, shared between Sénégal and Mauritania, it prevents backflow of salt-water into the basin.

[4] In 2014, the Félou dam in Mali was finalised. Several other projects are being developed or under construction.

[5] Mali, for example, is entitled to 52% of the energy generated by the Manantali, 48% of the Félou, and 34% of the Gouina hydroelectric plants on its territory.

new dams in the basin and on Malian territory has continued relatively steadily in a context of extreme political instability since 2012. This stands in stark contrast with the decades-long delays of the Niger basin infrastructure projects discussed below. This continued construction in the face of political instability may have been less likely without the OMVS in its current form.

In addition to managing shared infrastructure, the OMVS has developed a considerable management capacity and legitimacy within the subregion, which means that it can play a coordinating role in the development of integrated water management in the basin and channel external support on the basis of changing needs and circumstances. This will be key to manage future and increasing water related risks in the basin. One interviewee mentioned that until now, the OMVS has had limited needs for water use arbitration, as infrastructure development is still incomplete (3 major sites are in development) and irrigated agriculture potential is roughly 50% utilised. Faced with rapidly growing populations, the risk of competing water demands is set to increase significantly in the coming years and decades.

The OMVS is a rather unique experiment in transboundary water management, and one that has shown to produce clear benefits to its member states, even in a context of extreme political instability and growing climate stress. One could even argue that the OMVS contributes to the stabilisation of a highly volatile subregion, by ensuring key priority projects remain on track. It is, however, a model that has proven difficult to transpose onto other contexts. The success factor of the OMVS may also be less a question of the institutional or economic model that underpins it, but due to the fact that it has managed to address concrete water management problems that are faced by its member states. By managing dams directly it has also created a degree of path dependency of a regionalised approach. While other basins struggle to create a coordinated approach to major water infrastructure, the OMVS is able to expand its network of regional infrastructure, even in a context that is less conducive to financing major water infrastructure.

1.2. The Niger basin – reconciling water scarcity, energy and food production

The Niger basin is not just one of the largest in Africa, it is also among the most vulnerable in terms of climate variability, and human intervention in the flow of the river. The Niger river is the main source of freshwater resources for Mali and Niger –both of which have their capital cities on the banks of the Niger river– it is also home to the inner Delta of the Niger river, one of the world's major seasonal wetlands areas at high risk of environmental shocks and conflict (Madgwick et al. 2017; Le Monde 2021). Transboundary cooperation challenges in the Niger basin illustrate the intricate interlinkages and difficult tradeoffs between agricultural production, environmental protection and energy development in the basin, clearly indicating the difficulties of hydropolitics in a large and fragmented river basin.

Historically, the Niger river has seen highly unequal development. Early upstream development took place in Mali, where the Markala dam was constructed in the 1930s and 1940s under the French colonial administration to feed the state-run irrigation scheme of the Office du Niger, which until today manages around 100.000 ha of irrigated agriculture producing primarily rice and sugar cane. Expansion of irrigated agriculture and the Office du Niger has been an ongoing priority for the Malian government since, and one that risks being directly at odds with the rehabilitation and preservation of the inner Niger delta further upstream. Downstream development until recently was largely limited to Nigeria. The regional hegemon developed two significant hydropower reservoirs (Kainji and Jebba) in the 1970s and 1980s, which have long been the country's cheapest and most reliable sources of electricity.

The Niger basin countries have a long history of transboundary coordination, yet for most of that history with very few tangible results (Medinilla 2017). In 1980, the nine basin countries established the Niger Basin Authority (NBA)

in an attempt to relaunch transboundary cooperation in a context of increasing water shortages due to reduced rainfall in the preceding decade. The NBA was an attempt to raise the profile of the preceding Niger River Commission (1963), and work towards a deeper form of integration, in part inspired by the early developments in the Senegal basin since the establishment of the OMVS in 1972. Over the years, the NBA has seen several cycles of organisational revival and decline. The first decades in particular were marked by limited progress and a stark Nigerian opposition against upstream dam development. In the early 2000s, cooperation regained momentum leading to the development of a shared vision for the basin and an agreement on the construction of three major upstream reservoirs in Guinea, Mali and Niger respectively. Only the latter is currently under construction, and all three projects have incurred significant delays.

Contrary to OMVS, these projects are currently being developed by the respective member states as national projects. This means that the NBA's official role is limited to having brokered a political agreement on the indicative dimensions of the projects, and acting as a contracting authority on the environmental and social impact studies. Member states lead on project development, financing is mobilised bilaterally, and talks between Guinea and Mali with Chinese and Gulf country financiers in an advanced stage (Medinilla and Ronceray 2019; Pearce 2021). Since 2008, with the technical support from donors (including the World Bank, France and Germany), the NBA has been developing legal instruments that would allow infrastructure projects to be declared jointly owned projects (*"ouvrage commun"*) or common interest projects (*"ouvrage d'intérêt commun"*) retroactively. It has also developed a mechanism for calculating cost-benefit sharing between countries. This theoretically opens the door to regionalised water infrastructure management like in the OMVS. Yet it is unclear what the incentives for member states would be to enter into such an arrangement, particularly the full joint ownership option.

The most 'regional' project is the construction of the Fomi dam on an upstream tributary of the Niger river in Guinea. It is also one of the most contested projects in the basin. Both Guinea and Mali have a keen interest in the Fomi project, and engage bilaterally on the project. While Guinea hopes to use the project to produce hydroelectric power, Mali sees an interest in using future increased dry season water flow to expand irrigated agriculture of the Office du Niger, reportedly particularly for sugar cane production which it has jointly been developing with a Chinese investor since 2009 (Pearce 2021; Djiré et al. 2012). Large-scale irrigated agriculture which has long been a key priority and source of government revenue for Mali. At the same time, local and international environmental NGOs see major risks in the development of Fomi as decreased wet-season flow will inevitably lead to a reduction of natural flooding in the inner Niger delta, which is already under stress from overexploitation and climate variability. The 2007 NBA agreement deems a reduction of 11% of the wetlands as an acceptable tradeoff (NBA 2007), yet Wetlands International estimates that the combined effects of the dam and agricultural offtakes could lead to a 13% reduction and up to a 38% reduction in a drought year (Pearce 2021; Wetlands International 2020).

Dynamics in the Niger basin illustrates that transboundary cooperation is not only about regional trade-offs, but also about managing competing sectoral interests within countries' borders. Malian leaders find themselves between a rock and a hard place, on one side the urgent and short term imperative of economic development and food production, and on the other long-term security through managing environmental risks and adapting water consumption patterns. In a context of constant instability, the incentives for generating immediate benefits will often outweigh a longer-term perspective. This also underlines the need for a strong and reliable shared knowledge base of transboundary water resources, and how they connect to other sectors in a water-energy-food nexus.
The Niger basin also shows how central member state political interests, in this case those of Mali and Guinea, are to ensure any real progress. One can choose to focus all attention to the regional level, because it appears to be a driving force for integration, offers an opportunity to engage on integrated water resource management at scale, or simply because regional actors have a clear mandate and narrative that aligns with donor interests. But in the absence of a clear common interest in moving towards a stronger regionalised management of Niger basin

infrastructure, a lot of the innovative policies under the 2008 water charter, the shared vision will likely remain systematically under-implemented.

RBOs are first and foremost intergovernmental institutions, and are fundamentally constrained to what their member states allow them to do even in the face of the potential benefits of regional action. At a minimum, they can serve to channel resources towards their member states, which the NBA seeks to do through a series of regional programmes, which are a collection of projects identified by member states and presented in a coherent regionalised package to external funders by the NBA. At best, by pooling financial resources and capacity, the organisation can build up momentum for regional cooperation, through providing tangible benefits to its member states.

2. Transboundary water cooperation in EU external relations

The EU's approach to international water cooperation essentially stems from its internal policies, most notably the 2000 Water framework directive (WFD). The WFD was a response to the fragmented water policies across the EU, and an attempt to develop a common standard, drawing from existing successful arrangements in the Maas, Schelde and Rhine river basins (EC n.d.). It required member states to develop river basin management plans and introduced the spatial management of water resources, according to hydrological, not purely administrative boundaries (Fritsch et al. 2020).

While the internal experiences –both historically and contemporary– have given the EU and its member states a degree of credibility in addressing global water challenges (Tomalová 2020), the WFD itself to some extent falls short of the principles that the EU is promoting abroad, and is less forceful than some of the Integrated Water Resource Management (IWRM) inspired policies in supports externally, including on issues like gender equality, poverty reduction, but also water quantities and quality (Fritsch et al. 2020).

The WFD marked a turning point in the EU's external ambitions in the field of water (Fritsch et al. 2020). From 2002 to 2016 an EU Water Initiative (EUWI) sought to coordinate ongoing – and to generate new – EU and member state funding streams in relation to development aid in the field of water (Fritsch et al. 2017; Fritsch et al. 2020). The EUWI's Africa Working Group (AWG) had an explicitly transboundary dimension. It aimed at transferring some WFD elements from the EU to the African countries including spatial (river basin) management and public participation. However, the results were somewhat limited, and the EUWI was ultimately superseded by other initiatives, including the Africa-EU Water Partnership Project (AEWPP), an effort to mobilise investment for water infrastructure as part of the EU-AU partnership and in collaboration with the African Ministers' Council on Water (AMCOW) (Fritsch et al. 2020).

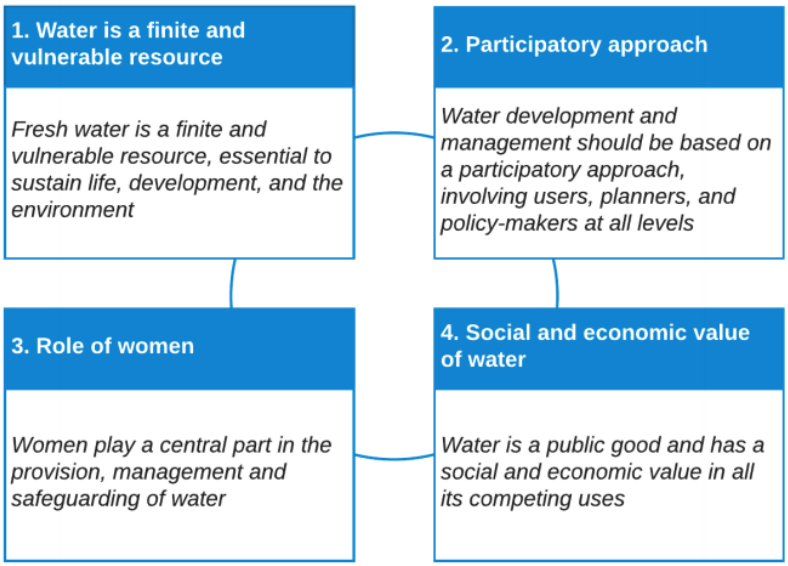
2.1. A strong normative basis

EU external cooperation on transboundary water cooperation has a strong normative component to it. The EC's response to the first ever European Citizens' Initiative Right2Water, the European Commission outlines a clear understanding of water as a *public good* essential to life and human rights (EC 2014). Similarly, the Council conclusions on Water diplomacy (Council of the European Union 2018) and the EU Human Rights Guidelines on Safe Drinking Water and Sanitation (Council of the European Union 2019) highlight that water is an imperative to human survival as well as a fundamental basis for societal and environmental resilience. They also reconfirm the EU's commitment to the provision of safe drinking water and sanitation as a human right (Farinosi et al. 2021).

The EU's approach to transboundary water cooperation is further inspired by the 1992 United Nations Economic Commission for Europe (UNECE) Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE 2021) (later referred to as the Water Convention). The Water Convention is a legally binding instrument promoting sustainable use of shared water resources in the wider European region, which was opened to global accession in 2016. From the start, the EU has played a key role in promoting its global status, which is also reflected in the 2018 council conclusions on water diplomacy (IISD 2018; UNECE 2018). Chad and Senegal were the first African countries to become parties of the Water Convention in 2018 and were joined later by Ghana and Guinea-Bissau (Bernardini n.d.; UNECE 2021). Some NBA member states have reportedly also expressed an interest towards it, using the language of the UNECE Water Charter and applying it based on their contexts (see UNECE 2004).

In addition to global water diplomacy, the EU and its member states have long sought to promote a normative approach to water governance and management practices through development cooperation. Lead European donors in the field of transboundary water cooperation alongside the EU institutions are the French and Germans, but also smaller member states including the Netherlands and Sweden, both of which are home to a vibrant water expert community. In the 1990s, the EU and its member states were quick to adopt the concept of Integrated Water Resource Management (IWRM), which in essence is a set of principles that promotes equitable use of resources and environmental conservation using a holistic, multi-sectoral perspective and a best-practice multi-level approach to water governance. A product of the early 1990s and the global sustainability agenda, IWRM builds on four principles developed at the Dublin International Conference on Water and the Environment (ICWE) in January 1992 and backed by UN member states at the Rio Earth Summit later that year (Medinilla 2018).

Figure 2: Four principles of Integrated Water Resource Management (IWRM)



Source: Medinilla 2018, based on GWP n.d.

IWRM shifted attention towards ecosystems thinking with river basins and RBOs at the centre, and by the 2000s had become the dominant discourse in water management in Africa and beyond (Mehta et al. 2016). More than a set of principles, IWRM has been promoted as an ideal and "a holy grail of water resource management" by several donors, including the World Bank and the EU which has been a major contributor to the adoption of the IWRM in partner countries (Dirwai 2021: 2; Fritsch et al. 2020). The impact of donors cannot be underestimated in pushing IWRM in Western African aid dependent countries. Various, often heavily donor-funded initiatives were put in place around Africa in the 1990s and 2000s (Dirwai 2021). For instance, between 1996 and 2001 more than 80% of water projects

were funded by donors, and in the case of Mali, almost 90% of water investments were funded outside the government apparatus (Dirwai 2021).

In recent years, the emphasis on the EU's support to transboundary water cooperation has slightly shifted from promoting IWRM to advocating a Water-Energy-Food Nexus approach. The EU published its position paper on water-energy-food-ecosystems (WEFE) nexus and sustainable development goals in 2019, which although not a policy as such, reflect the EU's priorities (EC 2019). The concept of WEFE nexus is built on similar ideas of coordination and systems thinking as IWRM, yet makes an effort to move past the water-centric approach and take the relationship between water, energy, food and ecosystems as the starting point (Medinilla 2021). In practice, however, many WEFE nexus initiatives are still fairly centered around the water sector, also in the case of the EU.

2.2. Transboundary water cooperation in EU development policy

The EU's policy framework for supporting transboundary water cooperation in its development cooperation is heavily influenced by the WFD. Since 2000, water cooperation has gradually become a mainstay of the EU's development policy. Since 2019, water cooperation has also benefited from the EU's ambition to lead on green transition and climate diplomacy worldwide. The European Green Deal (EGD) not only strengthens the environmental focus of the union (Teevan et al. 2021a), it also, to some extent, embodies the cross-sectoral and cross-border systems thinking that has long shaped the EU's and EU member states' engagement in the water sector. This is also reflected in the externalisation of the EGD which is starting to take shape today, and which offers new opportunities to position the EU as a key player in water cooperation.

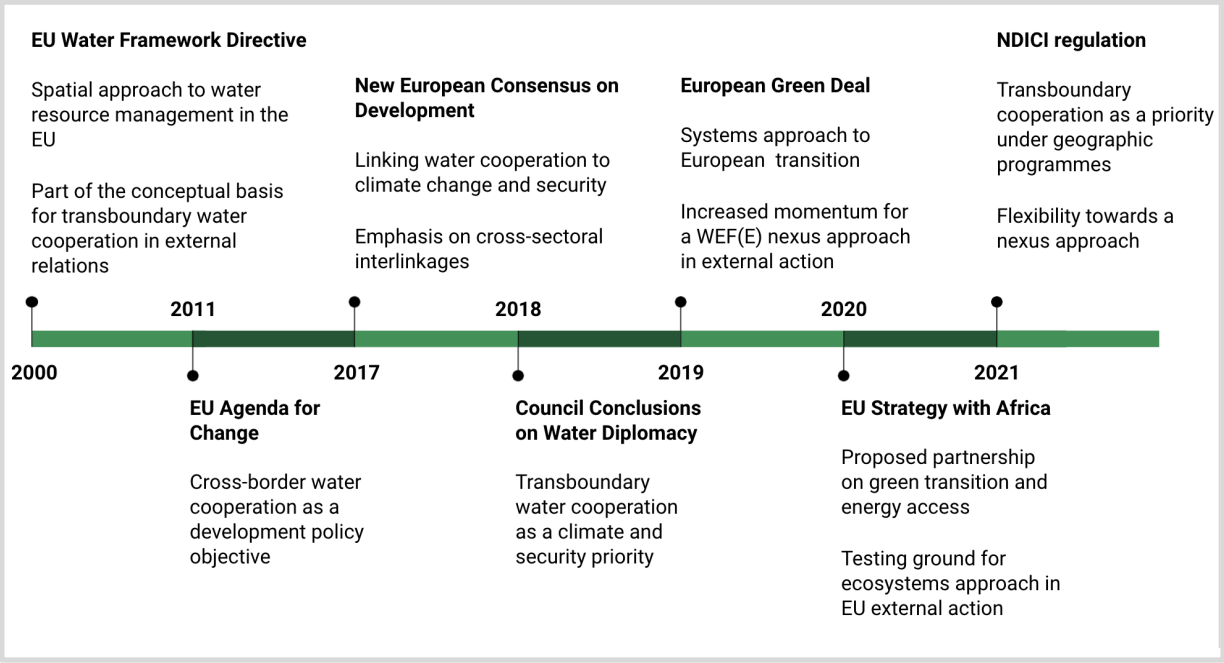
Over the years, EU development policy has moved from a recognition of the need for water cooperation to a more explicit nexus approach to water management and connected activities (see figure 3 below).[6] In the Neighbourhood, Development and International Cooperation Instrument (NDICI) - Global Europe regulation, support to transboundary water cooperation is explicitly included under the areas of cooperation for Geographic programmes[7] (EC 2021). The overall approach of NDICI is also more closely aligned with WEF nexus thinking in that it seeks to promote integrated actions across Sustainable Development Goals (SDGs) (EC 2021, article 8, paragraph 8). This same approach is also flagged in the EU's regional strategy with Africa's proposal for a partnership for green transition and energy access (EC 2020).

EU external policies also make a clear link between water, peace and security. The 2018 council conclusions on water diplomacy put significant emphasis on ensuring peace and stability in water-stressed areas, and EU support to reconciling riparian countries (Council of the European Union 2018; Tomalová 2020). The conclusions also gave the EU a stronger mandate to support transboundary water cooperation mechanisms. The council conclusions are also in line with the EU's Global Strategy for the Foreign And Security Policy (EUGS), which links water to security, viewing water scarcity as a source for potential conflict (EEAS 2016).

6 Whereas the 2011 Agenda for Change merely mentions the need for cross border cooperation on water (EC 2011), the 2017 New European Consensus for Development for example calls for an integrated approach to address interlinkages of land, water, energy and food (EU Council 2017: paragraph 25).

7 The regulation stipulates that the NDICI Geographic programmes will promote "integrated, sustainable, participatory and conflict sensitive management of water resources and transboundary water cooperation in accordance with international law, involving where relevant local authorities'' (EC 2021; Annex II heading 4, paragraph m).

Figure 3: Selected EU policy statements and their relevance for transboundary water cooperation



Source: Authors

Transboundary water cooperation in EU policy has always been supported and driven by member states. In the context of the EGD member states are further building up the momentum, for example with the January 2021 high-level event 'Water and Beyond – EU transformative approaches for international partnerships' organised by the European Commission and the Government of Slovenia with the support of the Portuguese Government as the Presidency of the Council of the European Union at the time (Water and beyond, n.d). Water cooperation is a key priority for the Slovenian presidency of the Council with new council conclusions on water currently in development (Slovenian Presidency of the Council of the European Union 2021).

A common approach between the EU and its member states will be a key determinant of success of the EGD, and a key feature of the EU's added value in water cooperation. Building on existing corporations (e.g. with GIZ in the Niger basin; with Italy in the Senegal basin), a Team Europe approach may create new opportunities to bring together expertise from EU Institutions and member states to produce synergies and increase the impact of the EU's support to water cooperation. Interviewees for this study also see a clear added value in the EU's decentralised approach and wide network of EU Delegations around the world. In-country presence gives the EU and its member states access to regional and national authorities, as well as civil society organisations and professional networks that are key to transboundary cooperation.

2.3. The practice of EU support to transboundary water cooperation

The regional nature of donor support to transboundary water cooperation means that it often falls between centrally headquartered managed and decentralised cooperation. World Bank programmes, and some EUMS agencies tend to maintain contracts with RBOs and regional organisations directly with limited direct involvement in the country. The EU, however, applies an increasingly decentralised approach to its development cooperation, and seeks to empower EU Delegations (EUDs) to engage in political and operational dialogue at country level, and manage projects and programmes through its network of EUDs. Brussels does play an important role in regional

programmes, and has an overarching view of transboundary water cooperation policies, while the deeper context knowledge exists in EUDs.

The EU engages in both the Niger and Senegal basins, working with both the NBA and OMVS, yet on very different terms, even if it is part of the same global initiative on the WEF nexus in different regional contexts (EC n.d.).

In the Senegal basin, the EU engages though a €6.1m Water-energy-food-ecosystems (WEFE) project[8] set up in 2013 and co-financed and implemented by the EU (Joint Research Centre) and Italy (AICS). The programme aims at strengthening data management for the basin authorities, strengthening the environmental observatory in OMVS region as well as establishing a WEFE framework in the Senegal basin and setting up and carrying out nexus dialogues with the key stakeholders in the area (Aquaknow n.d.; Farinosi et al. 2021). Joint steering and continuous dialogue with the OMVS and other stakeholders is a clear design choice of the programme, and has reportedly allowed the programme to adapt to changing circumstances and urgencies, and add value in a context where multiple external donors are engaging. Sufficiently open programme design allowed the programme to refocus some funds towards timely priorities such as combating invasive plant species and even small scale and artisanal gold mining in the region, which is a major concern for surface and groundwater quality and human health in general. The programme, however is a relatively small and short term initiative in view of the 10-20y planning horizon of the OMVS and funding requirements of the organisation[9].

In the Niger basin, the EU is unable to directly fund the NBA due to an ongoing procedural issue. To circumvent this it has engaged with the with NBA through the global Nexus Dialogue Initiative, a programme covering five regions[10] co-funded by the EU and Germany, and implemented by GIZ since 2016. The overall goal of the Nexus Dialogues is to establish and institutionalize the Nexus approach, generate investments for nexus projects. The initiative is currently in its second phase (2020-2023) in which the programme will seek to mainstream WEF Nexus approaches through increased investor awareness, capacity building, concrete projects and expansion of knowledge management. For the EU it allows it to continue to work in one of the most vulnerable regions of the continent, for the NBA, the Nexus dialogues also present an opportunity to resume direct engagement with the EU. While the programme has led to reported uptake of WEF nexus thinking in the NBA, a mid-term evaluation of the Nexus initiative pointed out that the impact was more limited on national level as there is limited political traction for new commitments on policy change among member states (EC 2018).

While it is a relatively small player in transboundary water infrastructure, the EU, along with its member states, has shown a clear commitment to promote a WEF nexus approach in transboundary basins worldwide, including in the Niger and Senegal basins. For the EU and member states, this may seem like an obvious choice, as it is a continuation of the move towards a systems approach to managing resources and sustainable transition. It's important to note, however, that for African RBOs and their member states, the WEF(E) nexus is not necessarily the main starting point for their engagement in transboundary water cooperation. While in principle it is easy to agree on the need for a nexus approach, partners also see this as yet another donor concept and normative framework they need to adopt in order to secure much needed funding. RBOs like the NBA are often pragmatic and will reframe their own existing priorities to align with donor language. This may however lead to a rather shallow adoption of the concept.

8 'Appui à la Gestion des Ressources en Eau et du Nexus Eau-Énergie-Agriculture Dans le Bassin du Fleuve Sénégal'.

9 In comparison, from 2014-2021 the OMVS mobilised more than $230m from the World Bank and Global Environmental fund, in addition to $12m mobilised through its member states (OMVS, nd.)

10 The other regions for the initiative are: Latin America, Central Asia, MENA region and South Africa. The key purpose of this regional programme also is to enhance interregional learning, which is facilitated by the nexus secretary.

Support to transboundary water cooperation requires strong coordination and a clear division of labour between the different donors and partners that work with RBOs and across basin countries. Experiences in African basins have been mixed at best. Common issues that come up include the following:

1. Formal coordination mechanisms are often set up by and for Western donor agencies. Non-western financiers play an increasingly decisive role in the development of African regional water infrastructure, yet operate primarily bilaterally, and have shown a limited involvement in formal donor dialogue mechanisms.[11]
2. Disconnects within the donor community and a lack of consistent information flow between HQ level and in-country services.
3. Limited coordination between regional programmes and national initiatives in the different sectors, which can limit information flow, hamper multilevel objectives and reduce the effectiveness of support programmes.

Interviewees reported mixed experiences on donor coordination. In the case of Niger and Senegal basins, donor coordination on the ground was not common, and generally outside of formalized structures. The OMVS has in the past set up a committee, yet it does not currently meet. The EU's explicitly decentralised way of working can help provide answers to some of these challenges, yet as international cooperation becomes increasingly complex and cross-sectoral, a more thorough rethink of traditional bureaucratic systems may be necessary. EU Delegations in host countries of RBOs could also play a stronger coordinating role, not only within the European community, but also between regional and national initiatives on water management.

3. Three lessons from engaging in transboundary water cooperation in development cooperation

Building on the preceding illustrations of the complexity of transboundary water management we can draw three key lessons engaging and supporting transboundary basins through development cooperation.

Lesson 1: Transboundary water management is political

The underlying assumption in many transboundary water management projects is that regional agreements lead to changes in how resources are used and allocated. More specifically, when the highest political and bureaucratic levels agree on the need for and key principles of cooperation, this will empower regional organisations to implement such agreements. In reality, however, many river basin agreements suffer from persistent under-implementation, even if most parties agree on the need for transboundary cooperation. This is often attributed to a lack of capacity and means, yet this is just part of the picture, and many blockages in transboundary water management are political in nature. The Niger basin illustrates that while the regional level provided a critical venue for agreeing on the development of upstream water infrastructure, member states have a less strong interest in further empowering the RBO to centralise the development and management of infrastructure projects. The Niger basin also illustrates that countries' water management interests can be highly complex and layered. Mali for example, facing acute political, security and humanitarian crises will likely prioritise short term gains from expanding irrigated agriculture over long-term security through protecting the inner Niger delta. Similarly, developing hydropower infrastructure between Gao and Timbuktu responds as much to energy and economic development interests as to the imperative of stabilising and connecting the highly volatile region. The political economy of water

[11] In the Niger basin, for example, beyond traditional donors like the World Bank, AfDB, AfD, BMZ, major infrastructure works (will) receive substantial funding from Chinese investors and several Gulf country funds. In the case of Fomi, for example, Chinese investment may become the main source of funding.

management at member state level not only defines the feasibility of regional agreements, it also informs the level of priority countries will give to their implementation, as well as their willingness to compromise in economic, environmental and social terms to advance certain national interests.

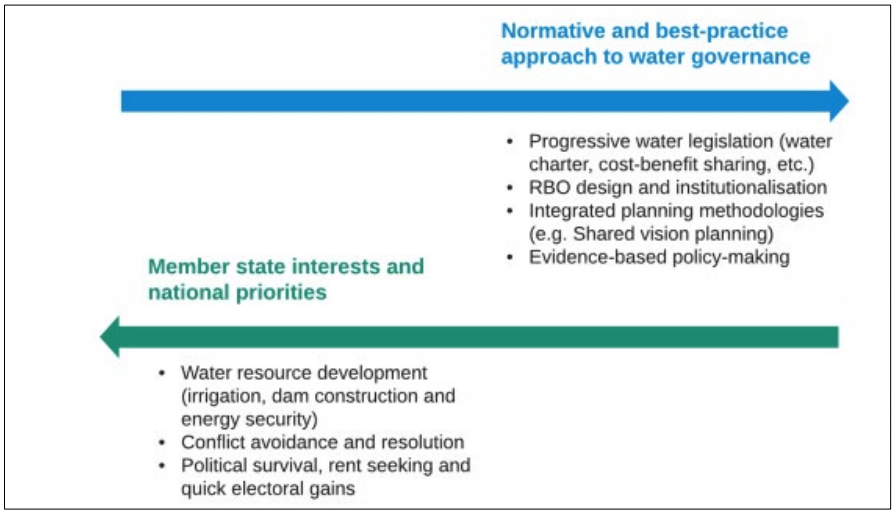
Any programme supporting transboundary water cooperation therefore should start with a fine grained understanding of the different national and sectoral interests at play.

Lesson 2: Principles alone are not enough

While transboundary basin organisations are established by their member states, their recent evolution in Africa is marked by international discourse on sustainable development and external donor support for regional solutions to environmental and economic challenges (Medinilla 2018: 6). The concept of IWRM in particular redefined water management policies worldwide, and has been proactively promoted through donor support, resulting in the rapid adoption of principled and best-practice policies in transboundary basins across the Global South. IWRM-inspired policies reflect a new and different approach to water resource management, centered around a basin-wide understanding of hydrological factors, the finite and interlinked nature of water resources within an ecosystem across national borders. More recently since 2011, the donor community led by Germany and the EU have increasingly adopted the Water-Energy-Food nexus concept. Intricately linked to IWRM, the WEF nexus concept further develops the idea of a systems approach to complex resource challenges, and emphasizes the need for cross-sectoral solutions (Medinilla 2021).

In many basins, however, these concepts have not led to the desired shift in the actual practice of water resource management. More often than not because national interests and short-term political interests often pull member state governments in the opposite direction, prioritising (sub)national developmental objectives such as dam construction, irrigation schemes over a basin-wide and perfectly balanced masterplan that tend to be promoted by IWRM and WEF nexus projects.

Figure 4: Tensions between normative, best-practice approaches and national interests and priorities



Source: Medinilla 2018: 10

RBOs and basin country authorities also tend to be quite pragmatic in adopting donor language and concepts, which they see as a condition to access external funding. This means that they will simply reframe existing initiatives as contributing to for example the WEF nexus. In some cases, however, this can also lead to programmes being implemented in a somewhat virtual environment, without a clear connection to the policy environment of member states. This was common with IWRM projects in African basins in the 2000s and 2010s (Galeazzi et al. 2017; Medinilla 2017b; Medinilla 2018). This does not negate the value and often urgent need for integrated management of water resources and different connected sectors. Instead, it reveals that the operationalisation of these concepts is often less well thought through, and insufficiently adapted to the political reality of the transboundary basins they target.

A purely normative approach can suggest environmentally optimised, yet abstract and disconnected solutions to water resource management. An overly purely pragmatic approach, working with the grain may also have its limits, and may result in a lack of ambition, maintaining structural inequalities, and a failure to address specific vulnerabilities. One example of this is the role of gender in transboundary water cooperation (see box 2).

Programmes supporting transboundary water cooperation should complement a principled approach to water resource management with a more pragmatic, and politically smart approach to understanding, promoting and supporting policy change.

Box 2: Gender and transboundary water cooperation

The EU and its member states prioritise gender as a critical transversal priority, including through its approach to sectoral policies such as transboundary water cooperation. A gender perspective is also present in recent council conclusions on water diplomacy (Council of the European Union 2018). In practice, however, the EU has at times faced challenges in including gender dimension in its programmes.[12] Paradoxically, while women and girls have long played a key role in the practice of water management worldwide, they are often less present in transboundary hydropolitics, illustrating the limits of a purely top-down and politicised approach to water management.

In their roles as users and managers of water resources (e.g. in agriculture, fisheries), women can drive innovation. They often favour and develop cooperative solutions to resource management and hold critical knowledge of water use and sharing (Fauconnier et al. 2018; Earle and Bazilli 2013). IUCN has also shown that where women have been involved in formal and informal decision-making related to water management, this has led to greater attention to social and environmental issues and to improved economic outcomes for women and their families, as well as women's empowerment in other fields, including local governance (Fauconnier et al. 2018).

The role of women, however, is often not well recognised in traditionally male-dominated transboundary water cooperation. Barriers to women's involvement are both sectoral and socio-cultural. Women are largely stereotyped as water users and left out of decision-making (CIWA 2021; Earle and Bazilli 2013). Research on women's role in water management also tends to focus on the household. Both hydrological engineering, and regional politics are also traditionally male-dominated, leading to a structural underrepresentation of women. Beyond representation, the core values, norms, ideas of professionalism and leadership, while presented as neutral, are in fact created by men (UN-Ihe 2020).

[12] For instance, the mid-term evaluation on the Nexus Dialogue initiative noted that in Niger Basin, the capacity building activities encountered some challenges in terms of gender dimension, namely lower female participation. Number of corrective measures were taken, including introducing a topic of gender in the workshops, increasing the emphasis of female participation and selecting more female moderators (EC 2018).

Efforts have been made to rebalance this highly masculinised field. The 1992 Dublin Statement on Water and Sustainable Development clearly emphasised the importance of gender-inclusive water governance (SIWI 2019), and has led to the integration of gender in many international and domestic water policies. However, these political commitments have struggled to translate into implementation, due to lack of capacity, awareness, or prioritisation of gender equality (CIWA 2021).

Ensuring a better gender balance in water diplomacy will require addressing the persistent socio-cultural perceptions that exclude women from decision making and management roles in the sector. This will need to be accompanied by strong and implementable policies to overcome entrenched discrimination (SIWI 2019; CIWA 2021; Earle and Bazilli 2013). Allocating adequate resources to address the underrepresentation of women as well as analysis of gender disaggregated data may be helpful in addressing these issues. However, actions need to be tailored to context, and be sensitive to local societal and political realities (SIWI 2019). The EU already has commitments when it comes to gender in external action, some of which are also highly relevant for transboundary water cooperation. Progress to date however has been mixed but concrete opportunities exist including in the NDICI-Global Europe programming process (see Teevan et al. 2021b).

Lesson 3: Form should follow function

External (donor) support and technical assistance facilities have often been instrumental in the development of progressive water legislation, integrated regional policies and institutions, shared visions and action plans. In some cases, this has led to a proliferation of 'best practice' governance mechanisms which do not always easily translate into a change in the actual practice of resource management. Problems in transboundary water cooperation are often defined in terms of regional institutional structures, limited capacity and organisational processes, yet this is often but the tip of the iceberg, and more often than not the result of a more functional and political barrier to cooperation. In some ways, the OMVS can be seen as an example of *form following function*. The organisation was built around a clear common objective of managing water shortages and ensuring flow management. The function of the organisation to manage joint infrastructure was developed simultaneously with the infrastructure projects the OMVS would manage, which has allowed the RBO to build up a degree of authority and legitimacy as a common project. In many other African basins however, *form has preceded function*. Policies and regional action plans are put in place, yet without a clear incentive for member states to adhere to them or implement. In the Niger basin, for example, the past two decades have seen the development an impressive array of regional water policies, outlining a bright future for a regionalised and integrated management of water resources, yet in practice, for many of these policies it is unclear whether they can and will be applied in the near future. Since the mid 1990s, a wide range of African RBOs, including the Lake Chad Basin Commission, the Congo Ubangui Sangha Commission and the Southern Africa Development Community (SADC) region river basin commissions have adopted remarkably similar best practice water management policies.[13] Previous analysis, however, identified serious tensions between the formal adoption of regional agreements and institutional frameworks and the actual implementation and practice in African RBOs. In some cases, basin-wide solutions clash directly with member state interests, while in others implementation is delayed because RBOs often do not have the supra-national authority to make regional agreements work in practice even if it is within their mandate (Medinilla 2018: 9).

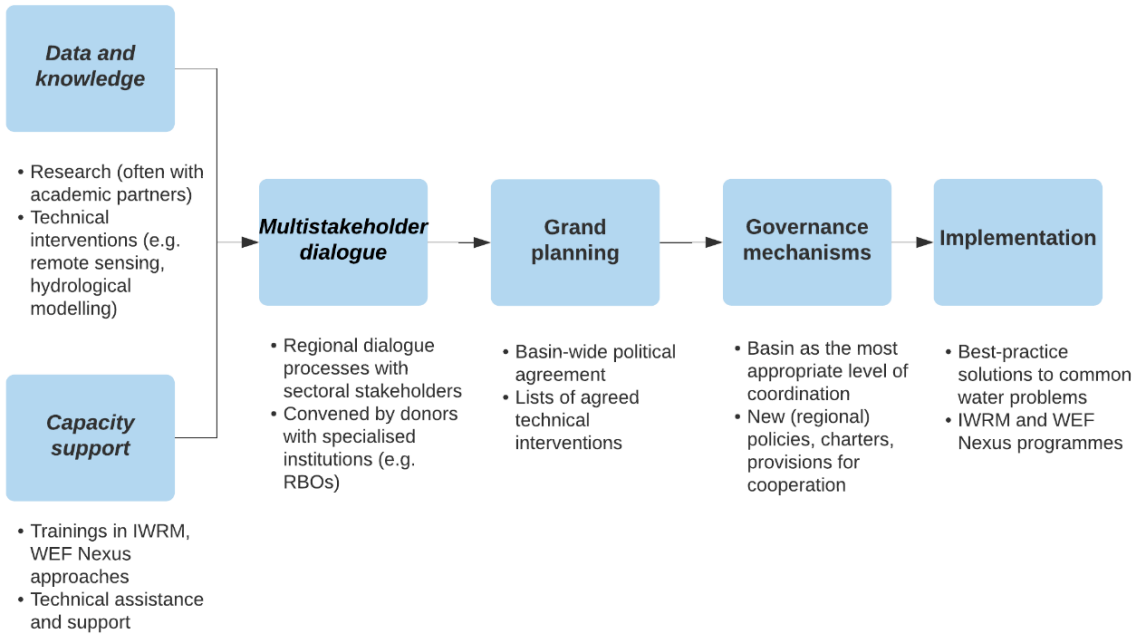
Support to transboundary water management should adopt a more functional approach, focusing on addressing specific resource allocation problems before institution building and capacity development.

[13] These generally take the form of a water charter or protocol reflecting the same idea that "the watershed" is the appropriate scale for organising water resource management, and setting out broad principles for what this management should look like. This is, in most cases, accompanied by the 'shared vision' or strategy and a joint action plan outlining specific measures and projects (Medinilla 2018: 9).

4. A problem-driven and adaptive approach to transboundary water management

Combining the lessons above calls for a rethink of the traditional, often linear development thinking that usually underpins external support to transboundary water management. The implicit 'theory of change' behind a lot of donor support to African transboundary water cooperation is a continuum from a political agreement on the need to balance water use across borders to the operationalisation of scientifically sound and collectively owned water solutions, illustrated in figure 5 below.

Figure 5: A traditional, linear approach to transboundary water cooperation



Source: Adapted from Medinilla 2021

This rather orthodox approach to water management came increasingly under pressure in the 2000s and 2010s from within the transboundary water management community, which saw the limits and missed opportunities of this approach in practice (Lankford et al. 2007; Woolfrey and Müller 2017; Merrey and Cook 2012). Some analysts have argued that part of the problem is that the international water community has to some extent conflated the technical unit of analysis that is the watershed or river basin with the ideal unit of governance, and that there is a need to refocus attention on so-called 'problemsheds'[14] (Mollinga et al. 2007; Cohen and Davidson 2011), taking concrete (cross-border) water management problems as a starting point for taking action, rather than a top-down basin-wide master plan.

Experts and donor agencies often favour transnational solutions because they offer an opportunity to work at scale and optimise interventions for a full ecosystem. At the same time, African river basins, while generally endowed with regional institutions and policies, tend to be extremely large and diverse, stretching across multiple countries

[14] 'Problemshed' is a play on the word 'watershed', and proposes a different approach to conceptualising water management issues, not in the traditional hydrological-geographic unit of the watershed, but in an identifiable area containing all affected stakeholders. It also allows for a multiscalar approach, without the need to focus all the analysis and decision-making on the watershed unit. See Mollinga 2020 for a more detailed reflection on the usefulness of the concept.

with often uneven interests and positions[15] (Medinilla 2021). In practice, member states often also prefer bilateral or subbasin arrangements to address specific problems. Donor programmes often struggle to fully capture this multilevel reality, and even when the donor has both regional and national programmes focusing on water cooperation, these are not always well connected which can lead to missed opportunities. While full collective management may still be a distant dream for many African river basins, cooperation can be built up gradually through bilateral and sub-basin arrangements where interests align or where there is a direct urgency to cooperate between basin countries (Medinilla 2018). Focusing on such hotspots of transboundary cooperation may also yield more long-term results, as it can emphasize the need and value of collaborative solutions to specific problems, which can ultimately strengthen the legitimacy, capacity and support for supranational institutions in the long run.

A problem-driven approach looks at transboundary water cooperation, not as an end-goal of the fully optimal management of resources, but as an iterative learning process through cross-border interaction and collaboration in response to specific problems such as competing water demands between different sectors and users, coordination around the construction of upstream infrastructure, etc. It acknowledges that the practice managing water resources across borders and across different sectors in a water-energy-food nexus is both logistically complex and more often than not politically highly contentious (Andrews et al. 2015), and something that is unlikely to be resolved through a single agreement or deliberative planning process.

Regardless of technical knowledge, training and mandate, regional and national policy-makers working in transboundary basins are limited in their ability to enact policy change, and perhaps more importantly, to ensure implementation. In some cases this is due to an implicit hierarchy between different sectors (e.g energy needs can trump environmental conservation). In other cases this is due to specific historical circumstances (e.g. the centrality of state-run irrigation systems in the decision-making in Mali), or specific political interests (e.g. the short term political gains one can make from delivering a specific infrastructure project). As a result, change is an inevitably gradual and messy process that involves altering the power dynamics and sectoral conditions that define the status quo (Medinilla 2021).

For support to transboundary water cooperation to be successful and lead to lasting change in the management of water, programme design needs to reflect this understanding of how policy change in transboundary resource management happens and build in a high degree of adaptability from the start.

Box 3: Four elements of a problem-driven approach to supporting transboundary water cooperation[16]

1. **Focusing on local problem definition and identification:** regional problems are often defined in terms of the 'lack of' standardised interventions such as suitable governance mechanisms, legal instruments and institutional frameworks. A problem-driven approach starts with the articulation of so-called 'useful problems', problems that are difficult to ignore, and are able to motivate and drive change that legitimises transboundary cooperation and builds up specific cross-border capabilities.

2. **Building and sustaining an authorising environment for change:** Agents (e.g. RBOs, line ministries, resource users, local leaders) need the ability to act in ways that deviate from what is currently considered acceptable. The

[15] Cameroon, for example, is a full member of the Niger Basin Authority, as it is home to the headwaters of the Benue river, a major downstream tributary of the Niger river. The country however has very little interest in the upstream water infrastructure development in countries like Guinea, Mali and Niger as it is largely unaffected.

[16] This list is adapted from Medinilla 2021, and inspired by the Problem-Driven, Iterative Adaptation framework developed by Harvard University (Samji et al. 2018).

power to do so is subject to both formal (e.g. chain of command, procedure) and informal rules (implicit hierarchy, sectoral power dynamics). To operationalise a transboundary project, one needs to first understand the authorising environment that underpins water management problems, and 'grow' authorisation over time. In some cases this boils down to creating political momentum for an externally funded programme, in others this can mean investing in low-hanging fruit, initiatives that can show the benefits of transboundary cooperation, for example well-functioning flood prediction mechanisms, addressing specific pollution problems, etc.

3. **Building in means for iterative adaptation:** implementing transboundary cooperation is a gradual process of building functionality (cross-sectoral and regional cooperation). This calls for a different approach to supporting reforms, rather than planning everything at the start, expecting stakeholders to implement top-down innovations to the letter, an adaptive programme focuses on experiential learning through experimentation, creating agency. This calls for sufficient flexibility in programme design (objectives and measures) as well as flexibility in the way that activities are funded. Especially in a context with multiple donors it helps to be able to quickly adapt support to changing circumstances, ensuring complementarity and additionality of support, and reinforcing partners' capabilities to deliver public goods and services across borders.

4. **Ensuring continuous process facilitation:** regional cooperation support programmes need to be led and implemented by the actors and institutions that are concerned, but they also require a different kind of process facilitation. A major difficulty with cross-sectoral and transboundary initiatives is to build and keep the momentum for reform, and follow-up on agreements and joint objectives. This process facilitation is ideally observed by a mixed team of stakeholders and (external) experts and part and parcel of the design of a programme.

Conclusions

The Niger and Senegal basins illustrate both the added value and challenges of transboundary water cooperation in Africa. With the OMVS, the region is home to one of the most successful and far-reaching forms of transboundary cooperation. A closer look at the practice of transboundary cooperation in West Africa however also reveals the complex, layered and often conflictual nature of managing transboundary water in a climate stressed environment. It shows the limited replicability of experiences and best practices in transboundary water cooperation, and that the ability of governments and regional actors to provide water related public goods depends on a lot more than a common interest and a high-level commitment to cooperate.

Building on internal European developments, especially since the 2000 WFD, EU support has played an important role in promoting transboundary water cooperation worldwide, even if its direct investment in transboundary infrastructure has become more limited. The EU and its member states have not only promoted the global expansion of the UNECE water convention, they have also contributed to linking water cooperation with peace and security. More recently the EU is at the forefront of promoting an integrated, Water-Energy-Food nexus approach as a way to manage complex resource challenges and provide real benefits to regions, countries, communities and individuals. While this gives the EU a degree of legitimacy as a global water player, more can be done to make the EU's external water cooperation more strategic and effective as part of a more comprehensive approach.

With the European Green Deal, the momentum for transboundary water cooperation is picking up again, this is reflected in the EU's growing policy framework as well as initial signals from the programming of EU external cooperation through the NDICI-Global Europe. The strong focus on green transition, climate and energy, creates opportunities for a more ambitious approach to supporting transboundary cooperation and nexus approaches in the climate and water-stressed river basins in Africa.

This is easier said than done. To maximise the ability of transboundary water management to deliver tangible public goods across borders, external support will need to draw a number of critical lessons from supporting transboundary water cooperation over the past decades and rethink the traditional, linear approach to supporting transboundary water cooperation. To deliver on stated ambitions, and promote lasting change in transboundary cooperation, the EU and its member states will need to transcend the best practice orthodoxy of the sector and systematically adopt a more problem-driven and adaptive approach to transboundary water programme design.

Eight recommendations for the EU Institutions and EU member states

1. **Place transboundary water management at the heart of the External dimension of the European Green Deal (EGD)**
   The EGD embodies systems thinking, and provides opportunities for promoting a different way of managing energy, resources and consumption patterns through its external relations. The EU also has an interest in reconfirming its commitment to promoting transboundary cooperation as a key driver of effective climate action and sustainable development, and work with member states and RBOs to produce systemic change both at home and abroad. A critical mass of EU and member state resources will be needed for the EU to retain its credibility as a water diplomacy actor. This includes re-evaluating and strengthening the EU's investment in high priority water infrastructure in Africa.

2. **Include a strong political component from the start**
   Transboundary water cooperation along the water-energy-food nexus should be explicitly framed as a political problem, not just a matter of the efficient management of resources. Building on on-going political analysis, the regional and country assessments undertaken as part of the NDICI pre-programming phase and the regional and national MIPs, programmes need to include an in-depth analysis of the political economy of transboundary water cooperation in the crucial design phase and throughout implementation.

3. **Make better use of the political and diplomatic architecture of the EU**
   The EU and its member states primarily engage with transboundary water cooperation through development cooperation. To more effectively address transboundary water problems, development and diplomacy need to come together. EU Heads of Mission (HoMs) can provide momentum for a joined-up European approach, and political section and operations staff working together in EU missions and Delegations can ensure a consistent and shared flow of relevant information and analysis. HQ level prioritisation of transboundary water challenges can further enable effective EU action, for example through updated council conclusions, regional strategies and action plans (e.g. the Strategy for Security and Development in the Sahel, the Integrated Strategic Framework Emergency Plan for its implementation and the Priority Investment Plan associated with it or the EUSR's mandate).

4. **Rethink the scale of transboundary water cooperation**
   River basin organisations play a critical role in transboundary water cooperation, yet many transboundary water problems are highly localised and affect some countries and communities within them much more than others. A basin-wide master plan is not always the most suitable way to broker cooperation in practice. Diplomatic initiatives and supported programmes should seek out opportunities for greater collaboration at the bilateral or even local level, which is where most decisions are taken. This requires better alignment between regional and national initiatives.

5. **Mainstream adaptive programme design**
   Support to transboundary water cooperation and cross-sectoral management of resources often relies heavily on a sequence of dialogue and technical assistance. Programmes should integrate a problem driven and adaptive approach as a core design feature. This allows working on specific transboundary and WEF nexus challenges, adapt and redirect means and support to where there is greater traction.

6. Make better use of the EU's network in basin countries

European partners should ensure greater synergies between the programming of their regional and national funding mechanisms and linking on-going political and context analysis. Focusing on regional organisations alone without accompanying measures at national level may lead to programmes being implemented in a somewhat virtual environment. The existing EU institutions and member states infrastructure (including implementing agencies) often remains underused and organisational structures can encourage fragmentation. EU delegations in particular could designate focal points in the host countries of river basin organisations to increase proximity and dialogue not limited to specific support programmes.

7. Seize opportunities presented by the EGD, NDICI-Global Europe programming and Team Europe

With NDICI-Global programming on-going, and Team Europe high on the policy agenda now is a good moment to adapt and create new smarter initiatives with adaptation built into the design of new actions for the period 2021-2027.

8. Strengthen the gender sensitivity in transboundary water cooperation

Transboundary water management remains a traditionally male dominated field. Programmes should include a gender dimension to make sure that women and vulnerable groups are adequately represented in the decision-making. Bringing political commitments to action requires capacity, awareness, and prioritisation of gender equality. The current programming period creates opportunities for a stronger gender perspective in EU support to transboundary water cooperation, and for identifying concrete initiatives that can strengthen the role of women as managers, as well as users of cross-border water resources.

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