



WWF *for a living planet*

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Policy Analysis and Recommendations

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EXECUTIVE SUMMARY

Over the past decade, there has been increasing global attention to the specific challenges and opportunities related to cooperation around transboundary water resources. The international architecture that coordinates, facilitates, supports and monitors transboundary water management has evolved from the broader water resources environment. This has occurred in parallel with the progressive development of customary international law related to transboundary waters, culminating in the endorsement of the *Convention on the Law of the Non-navigational Uses of International Watercourses* in 1997, which has not yet come into force.

In response to the recognition that transboundary water management may increasingly be a point of interest and/or concern for the global water resources community, in terms of local livelihoods and ecosystems functioning, DfID and WWF-UK commissioned a study to review and evaluation opportunities to improve the international architecture. This paper represents the final report from that study, which was built on regional assessments, selected interviews and literature reviews of the global state of transboundary water management.

Background and Context

The majority (60%) of the planet's freshwater resides and flows within transboundary river and/or aquifer systems, while 40% of the World's population lives in these basins. With the increasing globalisation of trade, there has been a dramatic increase in the interdependence of the world's population on the limited freshwater resources that support the production of food, goods and services. This interdependence is obviously more significant in transboundary basins, where large populations in downstream counties are directly vulnerable to actions taken (or avoided) in the upstream riparians.

More than two thirds of the 263 transboundary basins are located between developing and emerging economies, often with extremely variable intra- and inter-year hydrology. The hydrological challenge is compounded by constraints on water-related institutional capacity and infrastructure resources. Already the world's freshwater resources (surface and ground water) are stressed by over-abstraction, pollution and environmental degradation, while the impacts of flooding continue to be catastrophic in many parts of the world, including some of the largest transboundary basins. This will be compounded by increasing social-demographic, economic-trade and environmental-climate shifts, as well as moves to regionalisation, energy and food security, which imply that the global water sector is in a dynamic and transitional period.

Following the review of the existing architecture, there seems to be a general consensus in the international water community that the international architecture is largely functional and sound, despite some degree of overlap and redundancy. The approach taken in this paper is therefore to focus on areas of possible improvement or issues that require some degree of reframing. In particular this was taken to be the dimensions and elements of the international architecture that will promote and support the establishment of cooperative mechanisms in basins that are stressed or threatened. In this light, the international architecture should be assessed and refined against the likely political-economic and climatic-water environment in 10 to 20 years.

Emerging Issues and Requirements

A number of key issues/concerns for the international architecture to support transboundary water resources management have been identified in the report, but these can be represented as different types of asymmetry at the four key spatial scales of the international architecture:

- *Functional* asymmetry is present at the **global** level, with inadequate mandate and resources provided for coherent and consistent coordination and facilitation of transboundary water management.
- *Geographic* asymmetry exists at the **regional** level, with significant unevenness in the imperatives, legal mechanisms and institutional capacity to support transboundary water resources management.
- *Hydrological* asymmetry characterises the **transboundary** level, with each basin having distinct water resources priorities and requiring appropriate infrastructural and institutional management responses through cooperation.
- *Capacity* asymmetry pervades the **national** level, with countries having varying imperatives, enabling institutions and resources for national water management and transboundary cooperation.

Cutting across and binding all four levels is the global discourse on transboundary management. Important issues that require review are the inherently political nature of transboundary cooperation, the linkages between transboundary water management and regional economic development, the appropriate definition of boundaries, the need to focus on regional and national priorities, and the necessity for flexibility in agreements and institutions at a transboundary level.

Challenges and Opportunities

Following the evaluation of opportunities to adapt the international architecture against the challenges of an increasingly stressed and uncertain future, and the imperative to mainstream (align) water into regional political-economic initiatives, the following conclusions were reached:

- ✚ Greater coherence and alignment is required globally, particularly around the support to and coordination of policies, strategies and programmes supporting transboundary initiatives, including. This firstly requires a reframing of the global discourse around transboundary water resources management, through a global coalition of relevant role-players convened with the aim of facilitating this reframing and the adjustment of the international architecture, where necessary. Secondly, a credible global lead group/body should be recognised and mandated internationally to promote, coordinate, facilitate and monitor global dialogue, regional strategic processes and transboundary cooperative initiatives around transboundary water management, building on or being hosted by a relevant existing organisation. Thirdly, the need for this group to be globally recognised argues for the UN Convention to be in force to provide this mandate, as well as to strengthen the weaker voices for transboundary cooperation and equity at a national and local level.
- ✚ While the global architecture provides the framework for transboundary management, the differences between regions and the regional (public good) character of transboundary water management implies that this must be rooted through the regional level. Greater

regional engagement and a search for common understanding about transboundary priorities and opportunities, is therefore required to reflect the specific regional context and opportunities. This should firstly be enabled through regional “strategic conventions” around transboundary water resources linked to emerging regional economic/trade, energy and food blocks/pools, to prioritise and understand the transboundary issues and cooperation from a risk and benefits perspective. Secondly, regional initiatives should be fostered and supported to recognise and strengthen existing regional institutions that coordinate transboundary initiatives, preferably through the strategic convention process.

- ✚ The entire international architecture should focus on fostering appropriate cooperation between countries that share water resources. Transboundary agreements need only be developed where there is a clear imperative for formal cooperation, due to existing or threatened risk/stress, joint infrastructure development, trans-basinal (energy) benefits, or regional economic integration. This implies the need to focus on priority basins, while promoting some degree of cooperation (at least at a bilateral level) on other basins. Agreements should be focused on transboundary issues of concern, rather than necessarily all aspects of water resources management; enable flexibility and adaptation to changing circumstances, recognising possible evolution; and only create institutions that are necessary to perform the required functions.
- ✚ Effective transboundary cooperation depends upon national capacity to give effect to the obligations of international law and the agreements between riparians. Processes to facilitate cooperation between riparians must therefore involve targeted national institutional capacity building initiatives to “level the playing field” and ensure national alignment with the pre-requisites for effective transboundary cooperation.

Together these opportunities provide an inter-dependent suite of interventions in response to the need for improved coordination/coherence at a global and regional level with greater flexibility/prioritisation at a national and transboundary level. Implemented together they should significantly strengthen the architecture to support transboundary water management where and when required.

Implications for DfID and WWF

In supporting the refinement of the international architecture, DfID has an opportunity to promote the development of a coalition around the international architecture, particularly as there seems to be an appetite in some quarters internationally to engage this important debate. DfID should also reconsider its position on UK and other countries’ accession to the UN Convention in the light of the conclusions of this paper. DfID support to transboundary initiatives should consider the conclusions on transboundary institutions, particularly in terms of relevance, flexibility and evolution.

On the other hand, WWF is well positioned to participate in the coalition around a global discourse and facilitator. It should continue to articulate positions that balance ecosystem protection with sustainable utilisation of transboundary water resources. WWF should continue its advocacy work around the UN Convention, but should shift from a predominantly legal argument to one that includes institutional, policy and developmental dimensions. WWF transboundary programmes should recognise the need for locally relevant, flexible and evolutionary mechanisms and institutions

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1 INTRODUCTION

The importance of good water resources management for economic growth, social development and environmental sustainability is widely accepted. Increasingly, the part played by good water resource management in avoiding conflict and building resilience to demographic, developmental and climate change is also being recognised. Despite this, progress in improving water resources management remains slow internationally. While this is primarily a function of inadequate governance and capacity at a country and/or transboundary basin level, the international supporting environment and institutional architecture is a contributing factor. National level water management correctly continues to attract significant attention globally, whereas transboundary management of surface water basins and groundwater aquifers has only really achieved prominence in the past couple of decades and continues to receive relatively limited global attention.

1.1 Interpretation of the International Architecture

This paper focuses on the international legal and institutional architecture supporting and enabling transboundary water management¹. *Transboundary water resources* refer to any situation in which either surface or groundwater resources are shared by two or more countries. The international architecture and supporting environment is interpreted to be the following:

- ✚ The legal arrangements consisting of:
 - globally accepted customary rules and principles which govern the use and protection of transboundary water resources;
 - legal instruments (e.g. treaties, conventions, agreements) at the global, regional and basin-specific (multilateral and bi-lateral) levels, which encapsulate both existing and emerging rules and principles of customary international law;
 - national legislation that transposes and/or facilitates the application (or not) of international legal norms related to transboundary water resource; and
 - the international targets² that galvanise action and support to implement water resources management, particularly around transboundary water resources management.

- ✚ The institutional³ architecture and arrangements consisting of:
 - the global and regional institutions and groups that provide technical, training and financial support or have a specific interest in transboundary water resources management;
 - the range of transboundary organisations that have some degree of responsibility for water resources management in transboundary water resources; together with;
 - the national water management institutions that are typically responsible for implementing water management for transboundary water resources; and
 - tools and training programmes and knowledge systems available to help build capacity and to support the implementation of transboundary water resources management.

¹ This does not negate the importance of inter-state water management within federal countries, which have similar challenges, but to ensure focus this paper deals exclusively with inter-country water management.

² Targets are not strictly part of the legal arrangements, as they are part of the policy framework on which the legal and institutional arrangements are built and which unifies these other two aspects.

³ Typically institutional refers to organisations, capacity and governance (as implied in this use), but also incorporates the laws, policies, regulations and instruments that define the arrangements between them (which in this paper is subsumed into the legal architecture).

In engaging this topic (and paper) it is illustrative to reflect on the analogy of physical architecture in the design of an office block. This highlights the need to consider the external physical and political-economic environment/climate and the internal structure and rules in meeting the diverse needs and preferences of all potential residents, including the interplay between these various aspects. Unpacking this analogy, the international architecture for transboundary water management may be viewed as the office block, with each floor representing a region, a corridor representing a basin and the offices being the countries. Agreements outlining the rules and obligations may be defined at the corridor, floor or building scale, depending upon the needs of each company to share resources and/or cooperate in maintaining the infrastructure. Importantly, this need will be influenced by the resources and strategic intent of each company, and the architect should consider all possible structural possibilities in designing the building for maximum flexibility.

1.2 Background to Transboundary Water Management

Like water resources management within countries, transboundary management may involve a range of activities including, water allocation, aquifer management, infrastructure development, hydropower generation, flood control, water quality management, invasive species control and/or environmental protection. Ideally, all of these aspects should be managed in a coherent (integrated) manner at a basin scale, however transboundary cooperation usually has to overcome a number of political, economic and institutional hurdles between countries. In practice, transboundary cooperation typically emerges organically around an issue of joint concern between two or more riparian countries and then evolves into broader cooperation. On the other hand, there are transboundary water resources (such as the Congo River) that do not necessarily require significant transboundary management and where fostering intensive cooperation may distract attention from other pressing national priorities.

Transboundary water management tends to reflect the specific nature and priorities for a basin and the legal and institutional arrangements at this level vary considerably. From a legal perspective, *transboundary agreements* refer broadly to any bi-lateral or multi-lateral agreement related to transboundary water resources, including those related to joint water management aspects and/or those related to the specific institutions to be established. From an institutional perspective, *transboundary institutions* include all institutions established by two or more countries to jointly advise, plan or manage a transboundary water resource, and may range from a permanent technical committee, through to a water infrastructure authority, or formal basin commissions with a permanent secretariat.

Transboundary water management is deeply embedded in political and economic relationships between countries within a basin and within a region, based on the national interests, strength and priorities of countries. Transboundary water management is therefore most effective where there is an organically recognised (rather than externally promoted) alignment or compatibility between these national interests and/or the mutually beneficial imperative for broader cooperation. Promotion and facilitation of transboundary water management must therefore be based on the political and economic imperatives for cooperation around the management of a shared resource. This becomes even more critical in situations where trans-basin regional trade, energy and food security considerations require inter-basin cooperation built on intra-basin water management.

1.3 Structure of the Paper

Through a process of literature review and targeted interviews, it became clear that much of the international architecture is adequate, but also that a more flexible and nuanced approach to transboundary management may be appropriate⁴. In engaging these issues (in the interests of improving the management of transboundary waters), the paper attempts to:

- explore potential shortcomings and limitations with the existing international architecture,
- reframe the discourse against the backdrop of emerging trends in water resources and regional economies, and
- develop possible alternatives / options that may be considered at the global level reflecting the needs at the transboundary level.

It explicitly does not engage those dimensions that the authors considered to be functioning adequately. The focus of the paper is therefore on those aspects that may benefit from further attention and potential reframing, with Chapter 2 outlining and motivating these aspects and Chapter 3 providing possible alternatives. Chapter 4 concludes with a number of key recommendations emerging from the analysis.

⁴ See the International Architecture: Summary Report (2009) which synthesises regional reviews, interviews with a range of leaders in the field and literature reviews.

2 IMPERATIVES TO ENGAGE THE INTERNATIONAL ARCHITECTURE

2.1 Introduction

The premise of this paper is that the international architecture requires some degree of adaptation, because there are aspects that are not working adequately, effectively or efficiently. However, there is a general consensus in the international water community⁵ that the international architecture is largely functional and effective, despite some degree of overlap and redundancy. The approach taken in this paper is therefore to focus on areas of possible improvement or issues that require some degree of reframing. In order to identify these, this Chapter explores the:

- Possible political, economic, social and environmental drivers and trends and their implications for transboundary water resources and their management over the next few decades.
- Current institutional and legal arrangements that enable, support and manage transboundary water resources, together with the need to consider effective transboundary management under different conditions.
- Possible challenges and limitations of the existing situation around transboundary water resources management, providing aspects of the architecture that require attention.

Together these frame the areas of possible engagement around the international architecture addressed in the next Chapter.

2.2 Considerations of the Water Future

A significant portion (60%) of the planet's freshwater resides and flows within transboundary river and/or aquifer systems, while 40% of the World's population lives in these basins⁶. Thus, the global threats to freshwater apply to and may even be exacerbated by the transboundary nature of these systems. This section attempts to tease out the emerging trends related to freshwater and its management and interpret the consequences that this may have on transboundary management. As importantly, emerging trends and opportunities in the political, economic and social environment within which transboundary management takes place are also explored. Together these should indicate possible trends to consider for the international architecture.

With the increasing globalisation of trade, there has been a dramatic increase in the interdependence of the world's population on the limited freshwater resources that support the production of food, goods and services. As has been dramatically demonstrated through the current financial crisis, and the massive spike in energy and food prices during 2008, this interdependence creates systemic vulnerabilities to shocks and instability across the world, but at the same time creates opportunities to buffer these shocks through coherent action and response.

⁵ Interviews of a broad sample of representatives from various institutions with a role in transboundary water management indicated this perspective, which is supported by research presented in Varady, R. and M. Iles-Shih. (2008). "Global water initiatives: What do the experts think? Report on a survey of leading figures in the 'world of water.'" In *Impacts of Megaconferences on the Water Sector*, A.K. Biswas and C. Tortajada, eds. Springer-Verlag

⁶ Wolf, A (2003) International waters: identifying basins at risk Aaron T. Wolf, Shira B. Yoffe and Mark Giordano *Water Policy* 5 Number 1 (2003) 29-60

What this means for water is that people in one part of the world are dependent upon and vulnerable to water availability, management and use in another part of the world. This interdependence is obviously more significant in transboundary basins, where large populations in downstream counties are directly vulnerable to actions taken (or avoided) in the upstream riparians. Already the world's freshwater resources (surface and ground water) are stressed by over-abstraction, pollution and environmental degradation, while the impacts of flooding continue to be catastrophic in many parts of the world, including some of the largest transboundary basins.

The majority (about 70%) of these transboundary basins are located between developing and emerging economies, often with extremely variable intra- and inter-year hydrology, which is compounded by constraints on water-related institutional capacity and infrastructure resources (particularly given the requirements of other social and developmental priorities) at a national level. Many of the most stressed of these transboundary water resources are associated with a large portion of the global population, food production, industrial / goods manufacture, and energy generation, which contributes to significant utilisation of the water resources. Future projections for the currently stressed and potentially threatened transboundary water resources are grim, in the context of the changing political, social and economic environment. Many of these are iconic rivers in developing countries, such as the Ganges, the Euphrates, the Nile, the Okavango and La Plata. Going forward, the social, economic and ecological imperative for good water resource management within these transboundary water resources (as well as at the national level) is therefore greater than ever.

The expected shifts and trends in the external drivers, as well as in water management, are explored through a transboundary lens in the following sections. This provides the context against which the international architecture can be assessed and the environment within which it should function.

2.2.1 External Drivers and Regionalisation

As indicated above, various political, social, economic and ecological drivers will change the pressure on transboundary water resources throughout the world over the next couple of decades.

Economic / demographic drivers

The primary driver of water impacts relates to population growth and economic development. Global population growth is expected to primarily be in developing countries (90%) and increasingly in urban areas, often in regions with relatively inadequate water management, infrastructural and institutional capacity at national and transboundary levels⁷. While rates of future economic growth are currently uncertain, if future growth rates reflect historical trends in developing countries, this demographic change may be overlain by robust economic growth. This in turn would contribute to increasing demands for water for increased production and improved standards of living, with the associated shifts to more water-intensive diets and commodities. The consequent exponentially increasing pressure on transboundary and other water resources has increasing requirements for water resources development and management, together with greater social (livelihoods, culture and safety), ecological (aquatic health and biodiversity) and economic (growth and disaster) risks of poor decisions. The number of transboundary water resources at risk or threatened will increase,

⁷ UNESCO (2009) *Water in a Changing World: 3rd UN World Water Development Report*

together with the requirement for effective decision making and implementation at both national and transboundary levels.

Trade / food security drivers

Globalisation, trade and diversification of supply chains related to water as a good (economic, public and/or private), as a service and as a resource is becoming increasingly complex and relevant for water management. The global flow of products with significant amounts of embedded water is increasing. Increasing demands for food with higher water content (due to population/economic growth), pressures on food prices and threats to national food security may restrict the international trade in food, even as the demand increases. This is likely to increase agricultural production in areas with already limited water, that are marginal and/or that have not yet been developed, which will place increasing demands on these water resources, often with the negative consequences for local livelihoods and domestic use (in addition to the broader social and ecological impacts). The emerging trend for large land (and water) purchases by foreign countries and their private sector representatives, for future food security in the purchaser's country (typically with water stress or population pressures), poses real threats for sovereignty and management possibilities under trade agreements⁸. On the other hand, shifting global economic power, ongoing developments around the G20 and WTO, and the potential emergence of economic communities and trade blocks may facilitate regionalisation of trade and cooperation, possibly including water as a key input for food production. The possibilities for cooperation between riparian countries to a transboundary water resource are significantly improved when these are located within an economic community.

Climate / energy drivers

Climate, energy and water are increasingly and inexorably linked, and in a dynamic situation of changing climate, both gradual and dramatic changes on water resources may be increasingly expected, due to both hydrological change and the adaptation responses of societies (national) and communities (local). Climate change and variability typically causes those areas that are already relatively dry to become drier (albeit with increasing risks of flooding due to shorter intensive storm events), while wet areas may experience floods with increasing rainfall, both of which pose challenges to inflexible transboundary management regimes. The increasing development pressure for energy (including the green energy push) may lead to water being allocated to hydropower, biofuels and/or conventional power-stations with the consequent impact on other users and ecosystems (including fisheries in fish-reliant societies), both within and between countries. This tends to be exacerbated by the water intensive nature of many carbon mitigation strategies and solutions, and the converse carbon impacts of many water management alternatives. However, these challenges may provide political impetus / opportunities for the establishment regional energy pools, which mitigate spatial and temporal hydrological variability and promote inter-country cooperation with some attention to the need for effective management and development of transboundary water resources.

⁸ IFPRI (2009) Policy Brief 13 *Land Grabbing by Foreign Investors in Developing Countries: Risk and Opportunities* refers to deals and initiatives by Gulf States and China in countries from Philippines to Sudan.

Physical / environmental drivers

Many of the social and economic drivers described above result in land use change. These changes in turn drive increasing urbanisation, deforestation and desertification, as well as instream and riparian zone development, with the resulting direct impacts on water resources and freshwater ecosystems. This becomes a negatively reinforcing spiral, with environmental degradation of freshwater ecosystems (including wetlands and riparian habitat) reducing attenuation and assimilative capacity of water resources contributing to increasing flooding, shifting of hydrograph timing, decreasing base flow, sedimentation (or scouring), and deteriorating quality, which further degrades environmental quality.

Trans-basinal regional cooperation

With increasing national risk around water, food and energy, there may be an emerging opportunities to broker regional cooperation deals around energy, food and/or trade, in order to mitigate spatial and temporal variability, increasing uncertainty and political risk at a national level. This cooperation may be through joint international projects or national initiatives that may benefit from the economies of scale associated with regional markets. In some cases, the area of focus will be across and between river basins, which introduces a trans-basinal perspective to water management and may even imply that water is viewed as a regional multi-basin resource rather than a basin-specific resource.

In summary, the primary threats to water resources (including those that are transboundary) in the next couple of decades are largely economic, social and climatic in nature. The economic, social and ecological risks on transboundary water resources are either mitigated or exacerbated by water management approaches and the enabling institutional arrangements at both the national and transboundary scales.

2.2.2 Water Management Responses

The water resources impacts of these economic, social and climatic drivers are well recognised, as is the need for appropriate management approaches, infrastructure options and institutional capacity, in order to adapt to the certainty of a changing environment. The response to this is the emergence of trends in water resources management policy and practice at a national level, which has direct bearing on management of transboundary water resources and is a key element of the international architecture.

Policy and strategy consistency

Despite recognition of the need for harmonisation of water policy and strategy between riparian states, inconsistent policy and legislation is promulgated and national and basin water strategies seldom consider other countries' imperatives and strategies (except where required by treaty). In most countries, water strategies do not even align with other development sectors' strategies. There is a threat that with increasing political and water stress, countries will become more insular and that policies and strategies may become less consistent unless cooperation is embedded in relevant policy and planning processes. Even where there is harmonisation, the assumptions and approaches to setting imperatives and objectives vary for a range of political, institutional and cultural reasons.

Allocation and authorisation of water use

Planned allocation and reallocation of water is increasingly being reflected in policy, legislation and strategy to meet social, economic and environmental objectives, including the emerging recognition of environmental flows as a cornerstone of water resources management. At a national level tighter controls may be expected on the allocation of water in line with water allocation planning and watershed management priorities and defined objectives. Furthermore, increased monitoring and enforcement of water use conditions is expected to ensure only legitimate use of stressed water resources in line with water rights, authorisation and allocation systems. The challenge is where these allocation and authorisation systems are based on different assumptions, standards and approaches between countries. This may pose difficulties for basin-level coordination of these strengthening national systems, as well as at the boundaries, such as for environmental flows and water quality requirements. However, the imperative for regional trade, energy and food “pools” may become a motivation for improved alignment.

Infrastructure development and operation

There are about 50 000 large dams internationally, with thousands more large dams identified for development over the next few decades, the majority of which are situated in shared river basins. While the water supply, hydropower, flood control and other purpose rationale is generally sound for growing populations and economies, this infrastructure typically represents an upstream redistribution of water and its associated economic, social and environmental benefits, which has significant implications when this is shared between countries. As water resources become developed in regions with high (and possibly increasing) hydrological variability, there is an increasing imperative for joint development between countries. Where this excludes riparians that are not direct beneficiaries, there is far greater potential for these developments to have negative consequences for downstream countries’ ecosystems and livelihoods and/or not leverage the full (regional) benefits of the project. This has dramatic implications for multilateral basins, as planning and development of joint infrastructure tends to be an important catalyst for transboundary cooperation. Furthermore, effective infrastructure operation (particularly in conditions of hydrological variability) requires significant institutional capacity and appropriate environmental governance frameworks, both to leverage the full benefits and to mitigate downstream social and ecological impacts. This is particularly important in situations of increasing water stress (availability, quality and flooding) and uncertainty (with economic, social and climatic changes).

Water supply dimensions

Increasing growth and development should increase the international focus on delivering water supply and sanitation services (as well as other development goals) to poor and marginalised segments of the population (under the auspices of the MDGs, etc). The primacy of vital human needs in the international discourse provides a point of focus in transboundary discussion, although the amounts of water are relatively small compared to other uses. However, the continued artificial separation of water resources management and its consequences from water supply and sanitation service delivery in many countries is not ideal, particularly where urban water sources are dependent upon another country’s actions. The political ramifications of water scarcity for domestic supply it a critical dimension of cooperation in stressed basins.

Pricing and valuation of water

Increasing water scarcity (with growing demands) and constraints on capital have led, and are increasingly likely to lead, to the introduction of economic instruments as a key element of water resources management. Full cost pricing of water is being adopted to remove direct or indirect subsidies on water infrastructure and management costs associated with providing water for economic productive purposes, while considering social and strategic interests. Environmental taxes and levies are increasingly considered to promote water use efficiency through economic pricing and/or discharge control through polluter pays approaches. The emergence and formalisation of water markets is increasingly being adopted in systems in which demand exceeds the economically available water resources, in order to promote economically efficient allocation of water between economic productive users. While all of these are being engaged at national level, there is little engagement of these issues at the transboundary scale (coherent pricing or transboundary water markets), due to sovereignty and affordability considerations, which may increasingly contribute to perverse outcomes and incentives from the basin perspective. The exception may be the requirement to finance large joint infrastructure projects from a range of sources (including commercial financiers) based on projected cash-flows or joint guarantees.

Information availability and sharing

As water resources systems become more developed and stressed, and management requirements become more critical and need to be more adaptive, so do the monitoring and information needs on the system. However, with increasingly tight capital and budget constraints, many countries are not allocating sufficient resources into information acquisition and management. This has significant implications at a transboundary level, because information sharing and agreement tends to be the first step in building cooperation and trust, while uneven information and assessment capacity typically prevents sharing by the weaker party.

Public awareness and engagement of water

With the increasing public awareness around climate and environmental concerns, there has been an emerging awareness and popular consensus about the importance of water to society, as reflected through focused freshwater initiatives by NGOs and the increasing coverage of water issues in the media. At the same time there is an emerging recognition of the private sector (corporations and representative bodies/forums) around their vulnerability to water stress and the potential business risk throughout the supply chain, as reflected in the engagement by the World Economic Forum and UN CEO Mandate. The water-related accreditation initiatives are gaining momentum and are likely to impact on trade in goods and services. Together these have already begun to drive a redefinition of the traditional paradigm of water management, which may elevate the importance of transboundary water resources and the “penalisation” by customers of goods produced or with supply chain inputs from “poorly managed basins”. This may result in consumer consciousness about the importance of (transboundary) basin management.

Institutional decentralisation and stakeholder participation

With all of these changes, the legal and institutional arrangements in many countries are in a state of transition (and some cases uncertainty). Delegation of responsibility for water management is

increasingly being decentralised to basin, watershed and/or local government institutions for the management and delivery of water. Private sector and civil society stakeholders have an increasing awareness of and expectations for involvement and participation of in local water-related decision making. This has contributed to a wave of national and international laws that articulate basic rights and obligations pertaining to issues such as access to information, participation in decision-making and access to justice. These initiatives are being tempered by continued human, infrastructure and financial resource capacity constraints for water management at a local level, particularly given the increasing management and technical requirements. This contributes to pressure for private sector and non-governmental involvement in water management partnerships where government is constrained in managing water resources and delivering water services. These trends complicate transboundary management for a number of obvious reasons, particularly where the political imperative is to ensure national delivery, but there may be a reversal of the trend to centralisation as water stress increases in some countries.

Ecosystem services approaches

At its most basic level, there is widespread recognition (rather than practice) of the need to maintain aquatic environmental functioning, for biodiversity value and to enable continued provision of social and economic goods and services. The value of these goods and services can be considerable for fisheries, ecotourism and navigation, as well as the continued functioning of the system for flow/flood attenuation and waste assimilation. The emergence of payment for environmental services initiatives throughout the world reinforces this assertion.

Taken together, these identified changes indicate that the global water sector is in a dynamic and transitional period and highlight the immense challenge to freshwater systems around the world. This is particularly critical in developing and industrialising countries where management, infrastructure and institutional capacity is not always keeping pace with the requirements to engage these emerging, complex, dynamic and interrelated challenges. The next decade may be characterised as the “age of decision” for water resources, because the decisions made now will either enable or constrain possibilities to adapt to this change.

It is generally acknowledged that the need is for better water resources management by appropriate, adaptive, cooperative, participatory and strengthened water institutions reflecting the social, economic and environmental imperatives of the country. While this has been difficult to achieve at a national (and sub-national basin) level, it is even more difficult to achieve between countries, due to political sovereignty and national interest considerations around the management of shared water resources and unevenness between countries.

In this context, the ***critical message for the international architecture is that it should be assessed and refined against the likely political-economic and climatic-water environment in 10 to 20 years***, rather than current and historical conditions. Following the architectural analogy, the international architecture needs to be strengthened to withstand the increasing winds of economic, social and climatic change, while standing on the decreasingly stable foundation of stressed transboundary water resources (associated with water availability, quality and flooding).

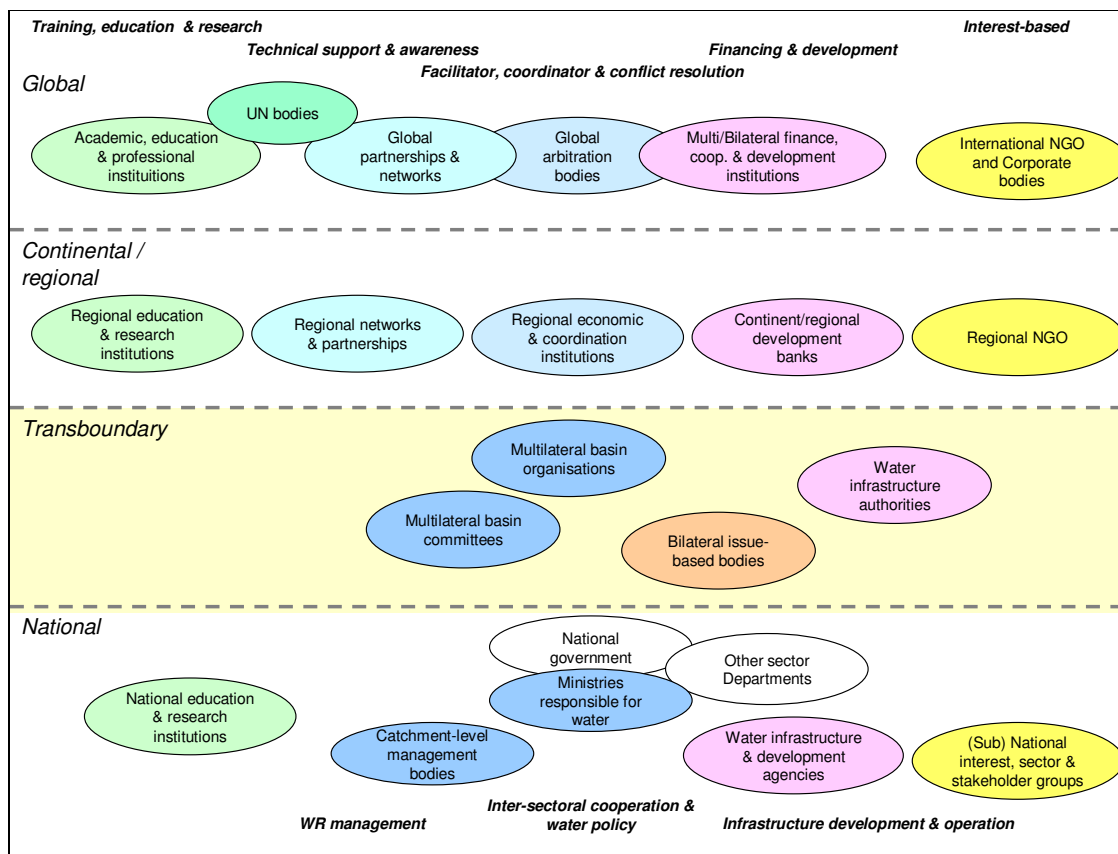
2.3 Brief Review of the Existing Architecture

At this stage in the paper, it is useful to review the international architecture as manifest in institutional and legal arrangements at the global, regional, transboundary and national levels. This leads to an assessment of the requirements for effective transboundary management, together with a description of the types of pathways to establishing agreements and institutions for transboundary water resources and the experience and lessons from other global environmental conventions.

2.3.1 Institutional Arrangements

Figure 2.2 presents a mapping of the institutions operating at a transboundary level, in the context of water management institutions at a national (and sub-national) level, as well as regional and global institutions with a role in promoting, supporting and enabling transboundary management.

Figure 2.2. Map of various institutions relevant to transboundary water management.



Transboundary institutions

Starting at the transboundary scale (as the primary focus of this paper), there are four distinct but not mutually exclusive types of institution, namely:

- *Water (basin) infrastructure authorities* responsible for the development, financing and/or operation of joint water resources infrastructure between two or more countries, typically established under treaty between the parties.
- *Bilateral issue based bodies* created by agreement (or MoU) between two countries to engage a water issue of common concern, such as water sharing, infrastructure planning, aquifer management, hydropower, water quality and/or flooding.
- *Multi-lateral basin committees* created by agreement (or MoU) to advise the parties on a range of transboundary water management issues and priorities, including the development of a basin agreement/plan concerning the allocation of water, transboundary objectives and institutions to be established to foster cooperation in the basin.
- *Multi-lateral basin organisations* established with a permanent secretariat by transboundary agreement, in order to advise the parties on water resources related issues of common concern at a transboundary level.

It is important to distinguish those bodies that are established for a specific clearly defined purpose (such as developing and implementing a water agreement) from those bodies that are established to foster cooperation. Similarly it is important to distinguish those that perform specific assigned functions (such as operating joint infrastructure) from those that are advisory in nature (and have no inherent management functions).

National and institutions

Given that transboundary management is largely given effect through national water institutions, it is appropriate to briefly describe the range of potential national (and sub-national) institutions relevant to transboundary water management:

- *National Government*: in some areas of the most acute contention about water, water matters are decided politically at Head of State or Cabinet level, while inter-state engagement is managed by Ministries of Foreign Affairs and finance by National Treasuries.
- *Ministries/Departments responsible for Water⁹*: at the national or state level have a mandate to manage water resources and water supply & sanitation in terms of policy and legislation, with intent outlined in national water strategies.
- *Other Sector Departments*: at a national level are critical in terms of setting national and even regional development objectives around energy, agriculture, industry, etc., thereby complicating cooperation and alignment at the national level.
- *Catchment-level management bodies*: are established at a sub-national level in many countries to decentralise decision making and enable local stakeholder participation.
- *Infrastructure and development agencies*: are established in many countries to develop, finance and operate water resources (and energy) infrastructure.

⁹ While this may be the Ministry of Water, some countries have water in other Ministries, while others split responsibilities for water resources, urban water supply and/or rural water supply.

- *Interest, sector and stakeholder groups*: exist within the country context (there are typically very few transboundary basin level stakeholders) and engage national institutions on water policy, strategy and implementation.
- *National education and research institutions*: provide important capacity within countries to support national water management, and may be upscaled to support transboundary understanding and cooperation.

The institutional arrangements and capacity at a national (and sub-national) level is probably the key determinant of effective transboundary management. This must also consider the constitutional dispensation in different countries, distinguishing those that are unitary from those that are more federated, and the implications between water resources managed against catchment and/or administrative boundaries. Transboundary cooperation may be complicated by the sub-national arrangements between these various institutions, particularly as this is the location of most water resources management implementation.

Global and Regional institutions

It is in from this national and transboundary perspective that the global institutional architecture should be considered. This includes institutions operating at the global, continental and regional levels that fulfil one or more of the 5 broad functional areas outlined below, considering that a number of institutions play multiple and varying roles in different contexts. Furthermore, most of these organisations play far broader roles in the international water architecture that while related do not all directly focus on transboundary water management.

- ✚ *Training, education and research* has well developed institutions, which have a long history at the global level (such as UNESCO, IHP and IAHS), including professional associations and information sharing organisations, but which have transboundary issues as a small part of their broader water mandate/focus.
- ✚ *Technical support and awareness* includes a range of institutions, partnerships and networks operating at the global and regional levels (such as GWP and INBO), with their focus on transboundary management only being part of their IWRM support.
- ✚ *Financing and development* institutions established at a global or regional level (such as the World Bank and ADB), primarily fund, promote and guide transboundary initiatives and infrastructure, due to the capital and capacity constraints on many countries.
- ✚ *Interest-based* representation from civil society or private sector institutions is emerging at a global level (such as WWF), with the environmental and social civil society NGOs being in the vanguard, with corporate bodies recently beginning to explore business risks around water (such as WEF and CEO Mandate).
- ✚ *Facilitation, coordination and dispute resolution* in the promotion, negotiation, implementation and monitoring of transboundary water (and institutional) agreements is currently unevenly developed with some regional and global institutions stepping into this domain, but not always with a clear mandate; the International Court of Justice and the Permanent Court of Arbitration represent dispute resolution institutions at the global level.

It is critical to note that these institutions only have a clear mandate to promote, support and enable transboundary management by fostering partnerships with riparian countries and basin institutions in an efficient and coordinated manner that serves the basin interests and priorities. However there is a fine line between demand-driven support and promoting a specific *funded* integrated management agenda. This is a particular challenge in donor dominated situations, such as Africa and parts of Asia.

2.3.2 Legal Instruments

The law has steadily evolved alongside State practice and scientific knowledge of transboundary watercourses. Early laws were primarily issue-based, with a significant number of agreements concerning navigation. It was only during the second half of the 21st century, that a progressive movement towards concluding agreements was seen. Agreements gradually became more all-encompassing, covering a range of issues related to the use and protection of international watercourses. There was simultaneously a drive from global and regional government and non-governmental organisations to codify and develop international law around transboundary water resources, based on contemporary legal issues and practice, with the intention to influence the basin level agreements.

Global rules and principles

At a global level, the 1997 Convention on the Non-navigational Uses of International Watercourses, (UNC) represents a codification and progressive development of rules and principles for enabling and sustaining transboundary cooperation. In addition, there are other multi-lateral environmental agreements at the global level, which partially relate to transboundary waters, e.g. Biodiversity Convention, Climate Change Convention and Ramsar Wetlands Convention. Globally, the work of the International Law Association (ILA) has also supported the codification and progressive development of international law in this field, most notably through the 1966 Helsinki Rules and more recently through the 2004 Berlin Rules. However, neither of the latter two instruments are legally binding. In addition, there is an ongoing process within the International Law Commission and UN General Assembly to develop rules relating to transboundary aquifers. Together the above-mentioned instruments provide a comprehensive and widely accepted body of law that guides transboundary agreements. Unfortunately, while these instruments reflect accepted customary international law, they are perceived to pose a threat to certain countries' national interests to develop or utilise their water resources and so in and of themselves, these instruments cannot and should not be used as a universal motivation for transboundary cooperation.

Regional Agreements

At a regional level, watercourse conventions such as the UN ECE Helsinki Convention, the EC Water Framework Directive and the SADC Protocol have been adopted to strengthen the implementation of watercourse agreements. These regional instruments provide more detailed provisions, particularly in relation to implementation instruments, such as monitoring, assessments, public participation and the establishment of basin-specific arrangements. Bodies established under the auspices of these agreements have strengthened existing frameworks, monitored treaty compliance, facilitated training and capacity building, and have in some cases developed further aspects of law through additional protocols. Importantly, the establishment of these regional water agreements

typically reflects regional economic and political imperatives and processes, but also provide a valuable context specific translation of international law.

Transboundary Agreements

There have been a plethora of multilateral and bilateral transboundary agreements established around the world, providing for joint water management and/or institutional establishment of shared waters. These agreements range in scope from a localised issue-specific focus (on a variety of water resources and infrastructure concerns) to basin-wide integrated management. Many of them predate the international and regional instruments and others are not entirely consistent or aligned with the substantive or procedural principles of international law. Furthermore, there are often situations where overlapping bilateral and multilateral agreements have been established in the same basin, introducing some institutional uncertainty. Single purpose agreements have provided a catalyst for wider cooperation and the presence of an agreement provides a vehicle for cooperation, even when political and water stresses increases.

National legislation

All of these international agreements and law need to be given effect through national legislation. An emerging number of countries have elements of water law that recognise the need for international cooperation and transboundary management, with specific clauses related to provisions for international obligations (boundary objectives) and formal recognition of transboundary institutions established under treaty. In addition, it needs to be recognised that national water law is the main vehicle for implementing transboundary rights and obligations. Implementation of transboundary agreement is therefore largely contingent on sound principles of water management being in place at the national level. Similarly, transboundary agreements that embody sound principles of international law, may provide a catalyst for strengthening national water laws.

It is critical to recognise that all of these legal instruments are the consequence of political processes (given effect through legal and technical processes). While strong legal-water arguments may be made for legal agreements at transboundary, regional and/or global level, these are diplomatic-political processes embedded in broader government policy and interests articulated at a national level. The motivation and options for cooperation and agreement therefore also need to be developed in this context, focusing on political, economic, social and environmental aspects and risks, that the transboundary water, legal and institutional dimensions are suited to mitigate.

2.4 Considerations for Transboundary Management

2.4.1 Pathways for the Evolution of Transboundary Architecture

A brief background has been presented above to transboundary legal agreements, as well as the institutions that are typically established at a transboundary level. This section takes these generic categories and makes them more practical, by distinguishing six distinct catalysts and pathways for transboundary agreements around water management and institutional development. Each of these pathways potentially has specific requirements in terms of the international architecture.

Water management (sharing/issue)

At its most basic, cooperation may be required between two (or three) countries on a specific water resources management issue at the border between the countries (such as water quality mitigation, flood control, water allocation or environmental flow releases). A permanent (or technical) committee is typically established to negotiate the terms of a bilateral (or trilateral) agreement between the Parties and once in place to facilitate cooperation and monitor compliance with the agreement. In some cases an honest broker is required to facilitate the engagement, particularly where there is animosity, asymmetry in capacity, or little trust between the countries.

- ⇒ Examples of these types of agreements may be found throughout South America, Africa and Asia, with the Indus Treaty being a specific example of a water allocation treaty of this type.

Infrastructure development

Following issue-based cooperation or recognition of the need for joint water resources infrastructure, a bilateral agreement is typically developed around an infrastructure project. Again, this is usually negotiated by a technical planning committee, leading to the signing of an agreement that specifies both the Parties responsibilities to the project and the institutional arrangements (typically an authority) to develop, finance and/or operate the infrastructure. These authorities are typically mandated with management functions, unlike many other transboundary basin institutions. While these negotiations are often conducted between parties there may be a role for facilitator and technical advisory to the process (often a development bank), particularly where there is asymmetry in capacity between the parties.

- ⇒ Examples of these types of agreements may be found in South America and Africa, with the Lesotho Highlands Water Project providing a specific example of a bilateral project treaty.

Basin level cooperation

As the water stress (allocation, flooding or quality) in a transboundary water course with multiple parties increases, there is an increasing imperative to cooperate at the basin level and optimise the protection, development and utilisation of the basin. Fostering this type of multilateral cooperation is a long slow process requiring the sharing of information, the building of trust between parties and the development of confidence in the process. This is typically a long-term process that requires simultaneous national level capacity building (to level the playing field), discussion of substantive issues and development of institutional arrangements for cooperation at the basin level. This process is typically much more complex and difficult than the issue and infrastructure processes.

- ⇒ Examples of these types of agreements may be found primarily in Africa and to a lesser extent in Asia, with the Nile Basin Initiative being a case in point.

Trans-basinal benefit sharing

There is an emerging recognition of the opportunities for regional power, food and water pools to support national development imperatives. These will often involve multiple basins and require a degree of regional trans-basinal cooperation. While cooperation around regional energy pools has evolved, the trans-basinal water resources engagement and response is at a fledgling stage. This

may involve multi-lateral (multi-basin) initiatives, multi-institutional cooperation at a basin level or potentially multi-basin institutions involving the relevant countries. However, there are significant challenges to this approach, particularly in the absence of a formalised regional community.

- ⇒ There are currently no examples of this pathway, but opportunities definitely exist in the Southern African, West African, South Asian and South-east Asian and Latin American situations.

Regional integration

An alternative situation relates to those transboundary water resources associated with regions that have a political or economic imperative to cooperate in the interests of regional integration under the auspices of a regional economic community (and even regional transboundary legislation, such as the SADC Protocol and UN ECE). The driver in these situations is for cooperation and integration (often by the regional secretariat), with the concept of water sharing potentially leading to benefit sharing. These processes are built around a multilateral agreement between the basin states, which often focuses on the basin organisation with a mandate to advise the parties on water resources related issues. In many cases though, the basin institution takes on a permanent secretariat and becomes almost more important than the agreement or imperatives to cooperate. The regional community typically plays the facilitating role in promoting and supporting transboundary cooperation and institutional development.

- ⇒ Examples of these types of agreements may be found primarily in Southern Africa (SADC) and Europe (EU), with ORASECOM providing a relevant case.

Basin regulation or management

At the final end of the spectrum are those basin organisations established by countries with the intent to assign management or regulatory functions to a multi-lateral institution. This willingness for countries to give up their sovereignty requires significant trust and an historically stable legal, economic and political environment. The driver in these situations is for consistency and independence in the application of clearly outlined strategic objectives and rules to all parties in the basin. These processes tend to evolve through cooperation to a multilateral agreement between the basin states, with authority given to the organisation to control or regulate water use or waste discharge. It must be emphasised that these types of basin organisations emerge under very specific circumstances and after extended institutional evolution, in which the regional community and identify plays an important role.

- ⇒ Examples of these types of agreements may be found primarily in Europe (EU) and North America, where the conditions exist for surrender of sovereignty to a joint management body, with Danube and Rhine Commissions in Europe and the International Joint Commission between United States and Canada on the Great Lakes providing relevant cases.

While each of these present distinct catalysts for transboundary cooperation, there is likely to be an evolution between these pathways according to local requirements, so they should not be seen as mutually exclusive. However, it is important to recognise that the institutional pathway should suit local conditions and that there should not be an assumption that basin management/regulation is the end point or pinnacle of transboundary water management.

On the other hand, from the perspective of the international architecture, the first two pathways may benefit from but do not necessarily require significant support or facilitation from a coherent global or regional architecture, while the second two pathways are more dependent upon external facilitation and support over a longer time period, and the last two pathways require economic and political integration.

2.4.2 Effectiveness of International Treaties/Conventions

An essential element of any treaty is its ability to create obligations under international law. The 1969 Vienna Convention on the Law of Treaties therefore stipulates that, once in force the provisions of a treaty bind the parties to it, and these provisions must be carried out in good faith.

This *binding* nature of international treaties may lead to the conclusion that treaties remain the most important instrument for regulating international affairs and the intercourse between States. Treaties certainly play an important role in codifying customary international law. Jacobson & Brown-Weiss¹⁰ thus observe that,

“It is difficult to identify rules of customary international law and, once they are identified, to determine their precise boundaries, unless the rules are codified in international legal instruments. Moreover, it is difficult to identify failures to implement the rules or to comply with them, since there are no formal parties to monitor compliance with them.”

The binding nature of international treaties has traditionally led many legal practitioners and scholars to assume that such instruments have a real impact. However, in recent decades, the question of whether treaties are in actual fact effective has generated greater debate amongst international lawyers, political scientists, economists, and others. Such research has both sought to define what is meant by “effective”, and endeavoured to advance the necessary tools by which to measure effectiveness. Ultimately this body of research has sought to determine how an improved understanding of effectiveness can craft better institutions.

Dimensions of International Treaties

While International Conventions typically codify international law and are binding on ratifying countries (once in force), four distinct dimensions of these global treaties should be highlighted:

- Firstly, they may provide a framework for multilateral or bilateral agreements between countries with a need for or interest in cooperation (such as Convention of International Sales of Goods as a framework and referral for bilateral trade agreements).
- Secondly, they may impose obligations on countries, either through generically defined considerations for action or specific targets to be achieved (such as the Kyoto Protocol setting targets for carbon emissions or prior notification in the UN Water Convention).
- Thirdly, they may provide considerations for interpreting aspects of these obligations that would then be supported by precedent (such as the Ramsar Convention relating to considerations for listed wetlands).

¹⁰ Jacobson, H.K., & Brown-Weiss, E. (1998), “A Framework for Analysis”, in Brown-Weiss, E., & Jacobson, H.K., eds., *Engaging Countries – Strengthening Compliance with International Environmental Accords 1*, The MIT Press, Cambridge.

- Fourthly, they may provide mechanisms for dispute resolution and arbitration between countries (such as the Convention on the Recognition and Enforcement of Foreign Arbitration Awards specifying process and roles in international disputes).

Most international conventions include all of these, or at least the last three¹¹. The focus of any Convention emerges through practice over time, supported by the way in which countries use it and the institutional support it receives for its implementation. Judging effectiveness should be seen not just in the adherence to the letter of the law, but in its emerging use and purpose.

Perspectives on Treaty Effectiveness

Following this, some insights have been gained on the effectiveness of treaties.

Taking a *managerial approach* to treaty compliance, State non-compliance with treaty obligations is assumed to be normally unintentional and can be put down to poor management or a lack of capacity at the national level. From this perspective, monitoring and enforcement of treaty provisions will largely be contingent on the degree to which rights and obligations are clearly defined within any treaty text. The clarity of obligations, and where necessary, the ability to resolve ambiguities in treaty text are therefore key aspects for determining a treaty's effectiveness. Ultimately, Chayes and Chayes¹² conclude that, "[t]he fundamental instrument for maintaining compliance with treaties at an acceptable level is an iterative process of discourse among the parties, the treaty organization and the general public".

Such a rationale has led to a discernable effort to enhance the *legitimacy* of multilateral environmental agreements (MEAs), through stronger institutional arrangements and more effective engagement with civil society. A related aspect is the need to account for the national contexts, not only in terms of capacity but also in terms of the political structure.

Flexibility is also identified as a key driver of effectiveness. Modern treaties that contain various mechanisms that allow for the evolution of societal norms and values are therefore considered to be more effective. Such adaptive mechanisms include learning systems, e.g. education clauses, science and technology provisions, and a strong system for the engagement of civil society actors.

The latter mechanisms may not necessarily be contained in the original treaty text, nor be formalized. In recognizing the effectiveness of the 1971 Ramsar Convention, Bowman¹³ observes that the "rudimentary" institutional arrangements articulated under the original agreement have evolved - largely informally - into today's robust system that provides for "substantial involvement of NGOs in all aspects of Ramsar's programme of work." Bowman notes that while Ramsar was relatively slow in attracting State parties, an effective system of reporting state national measures adopted in implementation of their obligations, coupled with a monitoring role for international organizations, has emerged.

¹¹ The UN Convention on International Watercourses has elements relating to all four.

¹² Chayes, A., and Chayes, A.H. (1995) *The New Sovereignty: Compliance with International Regulatory Agreements*, Harvard University Press, Cambridge.

¹³ Bowman, M. (2002) "The Ramsar Convention on Wetlands: Has it made a difference?", in Stokke, O.S., & Thommessen, O.B., eds., *Yearbook of International Co-operation on Environment and Development 2002/2003*, Earthscan Publications, London.

Conversely, in the context of human rights treaties Hathaway¹⁴ maintains that the record for compliance is quite poor, and such instruments may even be used by States, “to displace pressure for real change in practices.” This therefore implies the need to enhance the monitoring of treaty commitments, through *inter alia*, independent investigation, participation of non-governmental actors, greater publicity of assessments, and so forth. It is important then to recognise that international treaties (like all institutions) need to be actively supported, otherwise they will lose credibility and become irrelevant.

In summary, the effectiveness of treaties is therefore largely dependent on both formal and informal support mechanisms that ensure such instruments are both perceived as legitimate and capable of evolving in light of changing circumstances. Three broad lessons may be derived from this experience, namely i) the legitimacy of the process of bringing a treaty into force is critically important; ii) the institutional arrangements and responsibilities for the treaty implementation are fundamental to its ongoing effectiveness and adaptability (flexibility); and iii) mechanisms for monitoring and even enforcement need to be in place to facilitate the dialogue around compliance.

2.4.3 Legal Perspectives on the United Nations Water Convention

A fundamental dimension of the international architecture relates to whether the 1997 *Convention on the Law of the Non-navigational Uses of International Watercourses* (referred to throughout this paper as the UN Water Convention) is in force or not. Specifically, there is a question about whether the benefit of the UN Convention being in force warrants the international diplomatic effort that would be required to ensure another 19 countries accede in order to meet the threshold of 35 countries to enter into force. This is not a trivial issue and needs to consider a future with the UN Convention not being in force, with one in which the UN Convention is in force. While this question also needs to consider the additional institutional and policy requirements to ensure that transboundary management meets the emerging challenges over the next 10 to 15 years, under each of these scenarios, the following perspectives are primarily legalistic (a more comprehensive policy and institutional perspective is provided at the end of the next Chapter). Lastly, it is important to recognise that the UN Convention is one part of customary international water law and that the various rules developed by the International Law Commission¹⁵ (ILC) provide important support to the substantive and procedural provisions in the UN Convention. The following discussion takes a legal perspective on the issue.

UN Convention: the likely legal impact of non-entry into force

If the UN Convention did not receive the requisite number of accession or ratification instruments for it to enter into force, it is likely that (as an authoritative global instrument that reflects existing and emerging norms) it would still prove influential, particularly seen in the context of the ILC and UN General Assembly’s work on transboundary aquifers. Even prior to its adoption, the Convention has influenced the treaty practice of basin states. Within a regional context, for example, the UN Convention influenced the revision of the SADC Protocol, which in turn has shaped basin practice throughout Southern Africa. There is no reason why such an influence would not continue,

¹⁴ Hathaway, O.A., “Do Human Rights Treaties Make a Difference?”, 111 Yale L.J. 1935 (2001)

¹⁵ The ILC is mandated by the UN to develop international law, including the UN Convention associated rules.

although this influence may diminish as time elapses and it becomes increasingly likely that it will not enter into force.

Similarly, the existing and potential influence of the UN Convention as a guide for dispute resolution can be seen in the International Court of Justice's (ICJ) *Gabcikovo-Nagymaros* case. The decision noted the modern development of the law of international watercourses, "as evidenced by the adoption of the Convention of 21 May 1997 on the Law of the Non-Navigational Uses of international Watercourses by the United Nations General Assembly". While the use of international arbitration should be seen as a last resort in resolving disputes over transboundary basins, a weak legal and institutional framework coupled with growing pressure over such waters, would likely increase recourse to such mechanisms. Future cases, such as the *Pulp Mills on the River Uruguay (Argentina v. Uruguay)* which is currently on the court's docket, are likely to look to the UN Convention as a reflection of existing international law.

A further important point concerning the nature of the UN Convention was that it was designed to codify and progressively develop international law in the field (GA Res 2669, 1970). As such a number of the Convention's key provisions reflect existing customary international law, which are binding upon States regardless of whether the Convention enters into force or not. While no clear statement exists as to what is and what is not reflective of customary international law, broad consensus would support the principles of equitable and reasonable utilization, procedures for notification and consultation over planned measures, and certain dispute settlement mechanisms as being reflective of existing customary international law.

UN Convention: the likely legal impact of entry into force

On the other hand, if the UN Convention received the requisite number of ratifications or accession instruments, then it is likely that certain additional benefits might accrue from its entry into force. As with any international convention, entry into force means that the contracting parties would be obliged to implement its provisions in good faith (Vienna Convention, 1969). Contracting parties would therefore be bound by a framework agreement that embodies contemporary rules and principles of international water law, such as equitable and reasonable utilization, protection of ecosystems, notification and consultation on planned measures, exchange of data and information, third party fact-finding and other dispute settlement mechanisms.

Entry into force might also act as a catalyst for more widespread support for the UN Convention. A close relationship exists between international conventions and customary international law. As noted in the *North Sea Continental Shelf Cases*, if a widespread and representative number of States agree to be bound by a treaty and apply the provisions of the treaty in their State practice, the rules originally found in the treaty may, sometimes in a short period of time, come to reflect international custom and thus indirectly bind the States not party to the treaty (ICJ, 1969).

It may be argued that States observe international law out of a perception of legitimacy, which is defined as the capacity of a rule to pull those to whom it is addressed toward consensual compliance. Central to the notion of *legitimacy* is the perception that the rule has come into being in accordance with *right process*. Taking this argument further, it is possible to maintain that entry into force and widespread support for the UN Convention would increase the *compliance pull* of the Convention's provisions both for contracting States and non-contracting States. Such validation is

particularly relevant to the provisions that represent a progressive development of international law, as widespread support would increase the likelihood of the Convention's provisions becoming customary international law.

Evidence for the Convention playing such a role can be drawn from other multilateral environmental agreements (MEAs) such as the Ramsar Convention on Wetlands. Botswana, for example, became a party to the Ramsar Convention as a means to pressure upstream basin States to stave off developments on the Okavango. Entry into force of the UN Convention may therefore help influence other parties to comply not only with existing international law but also emerging rules and principles embodied within the UN Convention. Similarly, entry into force and widespread acceptance of the UN Convention would provide a remit for international organizations to push for stronger implementation of the Convention, as well as the norms of international water law that it embodies. With a UN Convention in force, the pressure on those countries which are reluctant to endorse certain provisions of the UN Convention increases, particularly where those countries are seeking a greater role in the international community and therefore need to be seen to be playing by international rules.

Once the UN Convention comes into force, it should provide bureaucrats and water development institutions an opportunity to build awareness and pressure politicians in both signatory and non-signatory states to engage transboundary management in the spirit of cooperation. Non-governmental entities would be able to use the UN Convention as a tool for holding States accountable for their commitments both under customary international law and treaty law. In sum, widespread support for the UN Convention (as reflected in accession or ratification instruments) would enhance the compliance pull of the UN Convention, which in turn would enhance the implementation of the fundamental norms of international water law. Specifically, if sensitively and appropriately facilitate, supported and prioritised, this should assist in improving the management of transboundary water resources through joint planning, monitoring, etc by riparian states.

In achieving widespread support, the UN Convention may also strengthen the implementation of a number of Multilateral Environmental Agreements (MEAs) such as the Biodiversity Convention, Climate Change Convention, Desertification Convention and Ramsar Convention. While these other Conventions do not directly cover transboundary watercourses, the rights and obligations contained in the UN Convention would provide a stronger normative framework for managing shared natural resources. In addition, widespread support would mean that institutional bodies established under these MEAs would have a remit to promote the implementation of the Convention throughout their activities.

While a number of likely impacts of the UN Convention's entry into force have been noted above, it is important to bear in mind that the legitimacy and potential effectiveness of the UN Convention coming into force is largely contingent on not just the number of States but also the representative nature of such parties. The representative nature of States acceding to the Convention is also likely to affect the 'tipping point' within the ratification process. For instance, ratification by States sharing major transboundary waters, or States playing a major role in international development assistance, is likely to trigger further ratifications from others. However, tactically it may be more appropriate to recognise that ensuring the UN Convention comes into force (through opportunistic motivation of

countries) is a critical first tactical step that can be followed by a more strategic process to broaden representation.

2.4.4 The Need for Transboundary Management

Many researchers have indicated that institutional capacity (i.e. transboundary agreements and/or bodies) is a necessary but not sufficient condition for effective transboundary water resources management, particularly where there is a need for cooperation or there are areas of potential conflict¹⁶. While we have a clear understanding of the number of transboundary basins and the agreements applicable to such waters, simply stating that 60 per cent of transboundary waters lack cooperative frameworks, or tracing the functional scope of agreements, is not enough. More needs to be done to understand how the process of adoption, the (legal) normative content of transboundary agreements, and the social, economic, and political context influencing treaty effectiveness. Such an analysis also needs to appreciate the multi-level governance nature of transboundary waters, and that there is no one size fits all solution.

The nature and relevance of these transboundary agreements and bodies, and their alignment with national level legislation and institutions, is a far more appropriate determinant of effectiveness than their mere existence. Furthermore, effectiveness of a transboundary agreements also relate to i) the process of adoption; ii) whether provisions contained in treaties are or are not legal binding; iii) the multilevel governance context in which treaties operate; and iv) and the relationship between customary and treaty law.

While there are a significant number of transboundary agreements and emerging number of transboundary institutions of all types, it is important to recall that each basin is different, with specific historical, political, economic, social, cultural and environmental context and characteristics. This requires locally relevant and flexible agreements and institutions, albeit built on core elements that have been captured in international law. The institutional elements of agreements should follow the requirements of the substantive water management aspects, except for the MoU required to establish a joint committee to initiate negotiations between parties.

Economic, social and climatic drivers will create further development and/or stress on basins, thereby increasing the imperative to cooperate at a transboundary level. An important consideration is that it is simpler to foster cooperation before dispute and conflict arises; this may be counteracted by protectionist self-interest by upstream and hegemonic riparians. The challenge will be managing transboundary water resources in a situation of increasing uncertainty and stress in regions with limited institutional and financial capacity to manage the outcomes. In this context, the recognition of shared risk and the threat of uncoordinated responses may be the greatest driver for cooperation, together with increasing regional perspectives on resource use. Appropriate transboundary management will be increasingly important in stressed catchments, in order to maintain growth of national and regional economies and to enable social development, while ensuring environmental sustainability. This needs to be a primary focus/objective of the international architecture.

¹⁶ Wolf, et al. (2003) International Waters: Identifying basins at risk. *Water Policy*, 29, indicate that institutional capacity and positive relations are more important than the physical aspects of the system as indicators of cooperation and/or conflict.

In conceptualising the management needs of different transboundary water resources, it is useful to distinguish basin complexity from water stress. *Complexity* is related to the number of riparian countries, the lack and/or unevenness of national institutional capacity (development), the presence of uncooperative riparians, and political tensions between riparians. *Water stress* is related to over-allocation of water, degradation of water quality and uneven utilisation between riparians. Both complexity and stress are compounded by difficult hydrological conditions (extreme inter and intra year variability, which is exacerbated by future uncertainty), which is the norm in many transboundary basins in African and Asia and even Latin America. These elements may be reflected as a 2x2 matrix of complexity versus stress, presented in Figure 2.3, and indicate the possible requirements for communication, cooperation and collaboration.

From the perspective of the preceding discussion, a relatively small proportion of the transboundary water resources internationally are currently in a situation of stress and therefore require more comprehensive (legal and institutional) cooperation mechanisms; a number more may be threatened. While this does not seem to be too great a challenge and is a key reason that transboundary management has received relatively less attention from a global water perspective, it is likely that demographic, economic growth and climate change drivers will increase this number considerably over the next two decades. Good institutional practice requires us to set the rules for cooperation before dispute and conflict arises, so it is imperative that the seeds of transboundary management are sown in these threatened basins over the next decade.

Furthermore, in this increasingly complex and uncertain water world, adaptive capacity must be built at all levels, including in these threatened basins. Specifically in the transboundary context, institutional adaptive capacity implies the need for clearly articulated *strategic objectives* (at a basin level), ensuring *diversity* of perspectives (through involvement of the different parties), *flexibility* in arrangements (necessary legal ambiguity and evolutionary organisations) and fostering joint *learning* (based on shared common information).

Figure 2.3. Matrix of management complexity versus degree of water stress.

Complex/ multiple riparians	Cooperate to avoid future disputes •Simple water management •Cooperative challenge to avoid future dispute	Collaborate (coalitions) to mitigate engage concerns •Complex political environment •Complex management challenge
	Communicate to avoid future disputes •Simple political challenge •Simple water management	Agree to mitigate current challenges •Complex management challenge •Simple political environment
Simple/ few riparians	Low stress (impact)	High stress (impact)

The central question for this paper therefore relates to the dimensions and elements of the international architecture that will promote the establishment of cooperative mechanisms in basins that are stressed or threatened. With this background, the authors' perspectives on the challenges and limitations of the international architecture may be highlighted.

2.5 Current Challenges and Limitations

Despite a long history of transboundary water management in many basins in the world, it is only relatively recently that the concept has come to the foreground of the global water management discourse. There are various factors underpinning this shift:

- ❑ The drivers and pressures on shared water resources have resulted in the recognition of the need for more structured agreements and systems regarding management of the shared resource.
- ❑ The late 20th century heralded an era of regional and global economic integration which influenced the discourse on water management, which has more recently been influenced by imperatives for regional energy and food security.
- ❑ Limited national capacity and inadequate country focus on transboundary issues by national governments has allowed a space for relatively uncontested donor intervention at the transboundary level.

While significant progress has been made globally in the concepts and practice of transboundary management during the past few decade, there continue to be some challenges and limitations to further development and evolution. These may be broadly grouped in to three main categories, namely those related to the nature and content of the global discourse / paradigm, those related to

limitations of the global-regional architecture and those related to the engagement of riparian states in transboundary water management initiatives.

2.5.1 Nature of the Global Transboundary Discourse

The global discourse frames the global architecture, approaches and support for transboundary water management and ultimately influences the practice and implementation in shared water resources. While much of this is sound and built on extensive experience in water management, the threat is that too formulaic an approach is promoted for situations that are extremely diverse and often politically complex.

IWRM driven agenda

The Integrated Water Resources Management paradigm is implicitly assumed in much of the discourse around transboundary management, with the basic premise being that water is best managed along hydrological boundaries, that water management must consider and influence all catchment activities (including other sectors' initiatives) and that stakeholders should participate in decision making. While these are all sound principles for management, transboundary management has a political dimension that underlies all engagement between countries. Furthermore, there is an emerging recognition that IWRM aspirations for integration need to be prioritised and contained in practice, due to institutional constraints. This requires pragmatic interpretation of what is necessary and achievable, based on an understanding of the minimum requirements for effective management under different circumstances. These should consider the fundamentally different needs of shared water resources with critical transboundary issues related to water allocation, aquifer management, infrastructure development, hydropower generation, flood control, water quality management, invasive control and/or environmental protection, amongst others.

Moving outside the water box - linkages with other sectors

However, the IWRM approach also emphasises the linkage to other sectors and priorities, which is the basis for bringing water into economic, social and environmental processes. This is critical for transboundary water management, as motivated throughout this paper, and relates to the development of an enabling political environment. The regional discussions around economic integration, energy pools or political alignment between countries is central to this. Transboundary water issues are, in many ways, an expression of the geopolitical situation in the basin. Transboundary water management is not an end in itself, but rather a means to an end, namely the optimal use of shared water resources to achieve environmentally sustainable social and economic development. In this regard, it is critical that water managers at all levels engage strongly outside the water sector and ensure that the importance of water management in social and economic development is fully appreciated.

One-size-fits all institutions

This leads to a related issue in the global discourse, namely the perception that the pinnacle of transboundary management is a multi-lateral basin organisation with a secretariat founded upon a comprehensive framework agreement, rather than the institutional form that is most appropriate to the water management requirements, the institutional capacity and the political situation of the transboundary resource. This requires more nuanced interpretation of the legal and institutional

responses to local conditions, considering that each shared watercourse may move gradually through a series of evolutions, if and when necessary. It is important to recognise that what is institutionally appropriate in one context may not necessarily be relevant or even benign in another context, and this needs to recognise that much of the discourse around transboundary water management is derived from situations of relatively high institutional and infrastructural capacity, in regions that are hydrologically less variable than much of the developing world.

Limited transboundary and national priorities

The third element of this discourse is the need to shift the focus from a global or regional view of what needs to be done to manage transboundary water resources, to reflect a focus on organic basin-level (and national) articulation of priority needs, issues and approaches. This does not negate the global and regional efforts to foster cooperation between riparians before crises occur, but rather implies that these should be opportunistically developed from local issues of concern and capability for institutional engagement.

2.5.2 Limitations of the Global and Regional Architecture

Much of the global institutional architecture is sound, but there remain some gaps and limitations that may be addressed through refinement of roles, mandates and strategies at a global level.

Uneven regional architecture

The role of regional institutions and instruments in transboundary management is extremely varied, ranging from comprehensive institutional and legal mechanisms in Europe (EU & UN ECE) and Southern Africa (SADC), through regional institutions with some mandate in West Africa (ECOWAS), to emerging institutions with limited mandate in Asia (ASEAN) and Latin America (ECLAC). On one level, this reflects political and economic realities in these regions and should be seen in this context. However, there may be some argument that this unevenness is not effective and that there is a need to strengthen regional institutions (and possibly even the introduction of regional legal instruments) to promote and enable effective transboundary management, reflecting regional conditions and differences.

No clear mandate for facilitation and cooperation

Notwithstanding the preceding critique on the global discourse, the global institutional arrangements to enable and support transboundary water management are well developed and are largely effective. Two potential related limitations are firstly that many of these institutions correctly only partially consider transboundary issues in their mandate and secondly that there is no institution that has been mandated to exclusively promote, initiate, facilitate and coordinate transboundary initiatives. Historically, this role has been played by World Bank, cooperating partners, UN bodies or regional institutions, but this is not always ideal given these institutions' potential interests. The identification and mandating of such an "independent broker" should be considered at a global and/or regional level.

Lack of a clear implementation strategy and monitoring mechanism

While the UN Convention is clear about the obligations of countries, there does not appear to be a coherent strategic intent or targets at a global (or even regional) level about what is practically

necessary to ensure effective management of threatened transboundary water resources, and which areas are of greatest concern. Neither is there an articulation of a clear monitoring and evaluation mechanism for progress with implementation. While this would be necessary if the convention was in force, the agreement of priorities, targets and monitoring mechanisms may be agreed in the absence of the UN Convention in force.

2.5.3 Engagement by the Riparian States

At the other end of the spectrum from the global discourse lies the (non) cooperation of countries around transboundary water resources, either by not engaging with initiatives by other riparians or not adhering to the spirit, procedures or substance of agreements.

Participation and engagement of hegemons

Many transboundary water resources are dominated by regional economically, militarily and/or politically powerful countries (hegemons) that have a significant existing use of the water resources or intend to unilaterally develop the resources in their country at the expense of other less developed riparian countries, be they upstream or downstream. In many cases, these powerful countries do not actively engage transboundary initiatives, postpone meaningful engagement, pressure other parties through trade or military threats and/or subvert the terms of agreements, which jeopardises the entire process, often in basins that are in real need of cooperation. The international community has an obligation to support the other riparians to ensure meaningful engagement by these countries, noting that these are fundamentally rooted in political and economic imperatives, rather than being based on water resource or legal considerations. Interestingly, the emerging recognition that cooperation provides the most effective way to manage shared risks related to transboundary water resources (particularly associated with climate change) may result in greater cooperation by hegemons, than the arguments for shared benefit.

Sovereignty and the role of transboundary organisations

There is a widespread assumption or perception that transboundary organisations have a management mandate, while in reality most basin organisations may only be advisory in nature, making recommendations for action by the Parties (to the agreement). Few countries are willing to surrender sovereignty on any national water resources management decisions to a multi-lateral institution, as water allocation, flood control and resources protection are highly political issues. The main exception is the management of joint infrastructure, where joint management is imperative and can be defined against clear operating rules. This constraint needs to be recognised, because it affects the mandate of these organisations in terms of stakeholder participation, water resources monitoring and basin water strategies (or master plans).

National capacity to effectively participate/engage

The capacity of different riparian countries is often quite uneven, in terms of political-bureaucratic awareness/priority of the importance of transboundary management, policy-legislative relevance, human-infrastructure resources and finance. This results in varying national interest in engaging transboundary cooperation and national ability to participate and implement outcomes. Lack of capacity therefore jeopardises the capability of countries to engage transboundary management, while uneven capacity between riparians jeopardises cooperation (often due to lack of trust by the

weaker riparians). Levelling and building the playing field is a critical requirement for transboundary management and may be supported by a range of multilateral and nongovernmental groups.

2.5.4 Recasting the Challenges as Asymmetries in the Global Architecture

The preceding discussion in this Chapter has framed the opportunities and challenges for the international architecture supporting transboundary water resources management. It has highlighted the complex, dynamic and broad-ranging nature of the topic, but has continually attempted to focus in on those issues requiring greatest attention. As a last perspective on these challenges, it is argued that the international architecture requires engagement of different types of asymmetry (or unevenness) at the four key levels (or spatial scales):

- ❑ There is a *functional* asymmetry at the **global** level, with inadequate mandate and resources provided for coherent and consistent coordination and facilitation of transboundary water management.
- ❑ *Geographic* asymmetry exists at the **regional** level, with significant unevenness in the imperatives, legal mechanisms and institutional capacity to support transboundary water resources management.
- ❑ *Hydrological* asymmetry characterises the **transboundary** level, with each basin having distinct water resources priorities and requiring appropriate infrastructural and institutional management responses.
- ❑ *Capacity* asymmetry pervades the **national** level, with countries having varying imperatives, enabling institutions and resources to perform national and transboundary water management.

2.6 *Desired Future State for Transboundary Management*

2.6.1 Goal for Transboundary Water Resources / Management

Given all of the preceding discussion, the aim of transboundary management needs to be the situation-appropriate improved protection, development and utilisation of shared water resources and related ecosystem functions and services, in an attempt to pre-empt potential future crises resulting from increasing stress on these resources. This may be summarised as the intent to build resilience in the functioning of water resources systems, as well as adaptive capacity in the institutional arrangements governing their management. This should enable water resources management to respond to changing demographic, economic and climatic conditions at a transboundary level, implying at its core the:

- Environmentally sustainable flows and quality within and between countries that consider the ecosystems services provided by rivers for communities and society.
- Equitable and efficient allocation of the available water between countries to support economic growth and pro-poor livelihoods of people throughout the basin.
- Appropriate development and optimal management of infrastructure to provide for multiple purposes, including those at the end of river and infrastructure systems.

If done effectively, this should deliver more sustained and resilient growth and development, despite the institutional and resources constraints facing many countries and transboundary water resources. However, it is critical to recognise that the specific hydrology, history, culture, development, infrastructure and institutional capacity associated with each transboundary water resources (and its riparian countries) will determine the most appropriate legal and institutional arrangements for transboundary management at any stage in time.

In thinking about the international architecture, it is not sufficient to look only at the past and present, because change in the global and transboundary water situation and environment is increasingly rapid (dynamic) and less predictable (uncertainty & complexity). In many ways, the next decade will be an “age of decision” for water resources, because the decisions made now are likely to either enable or constrain possibilities to adapt to this change. In this context, ***options for the global architecture should be developed against the likely conditions in 10 to 20 years***. During this time, an increasing number of shared water resources are expected to become stressed in terms of availability, quality and/or flooding, significantly more water resources infrastructure is planned or constructed, an increasing portion of the world’s population and economy will become dependent upon these resources and the health of freshwater ecosystems are likely to continue their decline.

This is further complicated by the typically highly-variable hydrological character of many of these transboundary water resources, with the associated greater uncertainty about the implications of future demographic, economic and climatic changes. This strengthens the argument for improved and adaptive institutional arrangements to facilitate effective management, development and protection of these water resources. It is also important to recognise that fostering transboundary cooperation is typically a long-term and resource-intensive process, even where the water resources are stressed, so longer lead times are necessary.

From this vision and perspective, the next chapter explores possible adaptation to the existing international architecture supporting transboundary water resources management, in response to the current and future challenges, opportunities and constraints.

2.6.2 Proposed Principles Underlying the International Architecture

While, the UN Convention and associated legal rules capture the key general legal principles for the management of transboundary water resources, they do not directly provide guidance for the international architecture. In line with the concept of architectural design, the following principles provide the frame of reference for the next Chapter’s review of options for the international architecture (as a design signature would guide a renovation). These principles recognise the political-economic nature of transboundary management, reflect the institutional requirements for an effective framework and introduce some pragmatic considerations.

- ✚ Recognise the dialectical process between political-economic dimensions and water resources management imperatives for transboundary cooperation between countries.
- ✚ Embrace economic (trade, energy and food) regionalisation beyond transboundary basins as opportunity for cooperation and means of mitigating risk in variable and uncertain contexts.
- ✚ Take a long-term perspective with clear mandates and dedicated resources to support the gradual pace of institutional development required for transboundary cooperation.

- ✚ Enable flexibility and adaptation in response to uncertainty and variability, as well as to shifting national and regional priorities to address changing development and water security needs.
- ✚ Encourage non-prescriptive and relevant/appropriate solutions to local conditions and needs, but which are consistent with commonly accepted principles and practice.
- ✚ Promote more even attention (and capacity) between countries, basins and regions based on national and regional priorities, to avoid over-commitment / domination of any one area.
- ✚ Acknowledge the need for increased efficiency/effectiveness (optimal use) of transboundary water management for increasingly stressed catchments (beyond purely national interests).
- ✚ Consider equity in benefits and impacts for vulnerable communities (livelihoods) and the environment (sustainability), in addition to between countries.
- ✚ Appreciate that water resources provide ecosystem services beyond the boundaries of the basin and underpin social and economic activities at a transboundary and even regional scale.
- ✚ Engage (sensitively) the issue of national sovereignty and differences in national interest and capability for transboundary management that may differ from water resources imperatives.

3 OPPORTUNITIES FOR THE INTERNATIONAL ARCHITECTURE

3.1 Introduction

As has been discussed, demographic change, economic growth and global climate change will continue to place increasing demands on already stressed water resources in many parts of the world. The challenge of managing these water resources equitably and sustainably and in the best interests of both current and future generations will continue to increase. It has been widely recognised that the challenge of improved water resources management is a challenge of governance. With 60% of the world's freshwater falling into shared basins, 50% of the land and 40% of the world's population living in shared basins, a key element of this governance challenge relates to the management of shared basins. It is also worth noting that only 40% of the more than 250 transboundary basins have some form of cooperative agreement of which about 80% are bilateral.

If water resources governance is weak at the national level, how much greater are the challenges when water must be managed between states, which may be at different levels of economic, political and social development, and may have very different capacities and intentions around water resources management. While there are many transboundary agreements already in place across the world, there are still many basins in which such agreements are not in place. Where agreements are in place, many are either lacking in content, or poorly implemented.

While the authors of this paper endorse the philosophy that transboundary agreements and institutions should reflect the needs of the specific basin, there is a need to improve the practice of transboundary management in many basins. Furthermore, the preceding chapter outlined areas for which the global and regional architecture may need to be refined. In exploring these areas, the following discussion outlines possible approaches and options that may be considered against the following structure:

- Reframing / refocusing of the global discourse around transboundary management
- Mandated institutional facilitator/s of transboundary processes.
- Regional level strengthening of instruments and institutions.
- Appropriate transboundary agreements and institutions.
- National level capability to engage transboundary management.
- Role of corporate / private sector in the global and regional dialogue.
- Need for the UN Convention to enter into force.

The following sections explore these issues, considering both positive and negative implications. Throughout it is useful to adopt the architectural analogy in that design needs to consider the structural elements of the whole (building) and its parts (floors, offices, etc), the governance arrangements (rules and agreements) that facilitate cooperation between different tenants and the environment within which it is located. It is important for the authors of this paper to recognise that there is little new material in the following discussion (and most of it has been proposed in other papers and fora), but rather that the approach provides a coherent perspective on the international architecture that is hoped will add to the debate.

3.2 Global Discourse: “Reframing the Paradigm”

3.2.1 Shifting Paradigms

In the light of this assessment of the weakness of the current approach to basin agreements, several elements of the current paradigm need to be reframed.

Basin relevance and priorities

The first arises from the recognition that there is no one-size-fits-all approach to transboundary basin management. Each basin is different, politically, economically, socially, culturally, and in terms of water availability and challenges. For transboundary basin management to work effectively it must be based on the identified priorities and solutions of the riparian states. Such priorities may be addressed through agreements dealing solely with the construction of a joint infrastructure project, or may extend to basin wide co-ordination and management programmes. Of critical importance in this approach is sufficient capacity and independence at the national level for riparian states to articulate their own needs and priorities, with appropriate support from the international community.

Within this approach, it is advisable to focus on the minimum requirements for international co-operation, and to ensure that such requirements are in line with the identified national, transboundary and regional priorities, and the capacity to implement. Any agreement is, after all, ultimately only as good as its implementation on the ground.

Definition of the basin

Working within the paradigm of addressing reality on the ground, rather than abstract concepts of the basin approach, it is appropriate to take a more flexible approach to what constitutes a basin. In some cases, it may be appropriate to deal with more than one basin under one agreement, either to achieve more equitable benefit sharing across the wider range of options offered by more than one basin, or to achieve simplicity of institutional arrangements. For example, Mozambique and Zimbabwe share a number of river basins. It may well be possible to deal with many of these basins through one institutional arrangement and/or legal agreement rather than through separate agreements and institutional arrangements for each basin. In the era of major interbasin transfers and inter-connected reservoir systems, the notion of the basin becomes more challenging, as water is moved in and out of basins, and the basin footprint extends ever more widely. Similarly the disjuncture between surface water basins and groundwater aquifers further blurs the boundary. Such realities must be acknowledged within the concept of transboundary basin management.

Political dimensions

Equally, however, it is important to recognise that although the basin is the natural physical framework within which to manage water, transboundary water management is as much a political and economic issue as a water issue. In approaching it from this perspective, and understanding the economic implications of transboundary water management, one will be able to address some of the issues that might otherwise hamper effective benefit sharing based on transboundary water resources. The Nile Basin Initiative is a case in point. Years of work in the political dimension have enabled the possibility of a water agreement taking shape. At the same time, recognition of the

political nature of transboundary water management raises the possibility that the rational water solution may be over-ridden in a basin by political requirements, or, indeed, that political needs may result in a more mutually beneficial water solution than might have been expected. One example of this is the peace (and water) agreement between Israel and Jordan, driven more by political needs than by water needs from the Israeli perspective.

Economic and social linkages

For this perspective to shift, a deeper recognition of the fundamental role of water in economic growth, social development and, ultimately, political stability, is necessary. Conversely, the dialogue around transboundary water management must shift beyond the ambit of the water managers, to be integrated into regional political and economic discussions and structures. The emerging possibilities around regional cooperation for energy and food security, linked to the strengthening of regional trade blocks provides an important opportunity for transboundary management as the critical shared resource. Equally, the articulation of shared risks to national social and economic development associated with non-cooperation around transboundary water management provides an important motivation to promote engagement of all riparians.

While this approach has been framed as a possible outcome, it should be viewed as a fundamental assumption underlying much of the following discussion and reflects the intent of many of the challenges outlined and principles proposed at the end of the previous Chapter.

3.2.2 Mechanisms for Bilateral Donor Coordination

Having accepted the need for reframing of the discourse and for basin management to be driven by the identified needs of the basin states, it follows that international technical and donor support should be structured in a manner that supports these priorities. The influence of global institutions in guiding (and even determining) agendas at a national and transboundary level should not be underestimated or overlooked. Unfortunately, and as recognised by some parts of the donor community, current support initiatives are often poorly co-ordinated, and responsive to the interests of the donors rather than the basin priorities, particularly where national water resource management capacity is weak and states are dependent on donor funding. The transaction costs of managing a range of donors, each with their own priorities, approaches and procedures is high, particularly in areas of limited capacity. Basin level co-ordination between donors, driven by the basin organisation or basin states, and responsive to basin priorities, contributes significantly to improved transboundary water management. The emerging concept of Basin Trust Funds (or even regional funds) to source and disburse funding from various sources (including private sector and civil society) for programmes and projects against a clearly articulated and locally developed strategy (linked to basin institutions) provides a useful mechanism to facilitate this.

If one brings together the recognition of transboundary water management as essentially political, with the need for improved co-ordination of international technical and financial support, the potential exists for an approach that sees regional “conferences” which engage political priorities for basins against well articulated guidelines and risk assessment. This would enable riparian states and the international water community to understand the potential risk and opportunities related to transboundary water management in a particular area. Targeted and coordinated support could thus be provided based on the identification of key basins and identified priorities. Such an approach

would also allow for the structured mainstreaming of transboundary (and national) water management into the economic and social development plans of the region.

While an option to take this process forward may be the convening of a global coalition around transboundary water management, many of the approaches and options outlined in the following sections would also contribute to this outcome. It is important to recognise that while this perspective may evolve organically there is an urgency to consolidate the progress and focus further attention on transboundary issues that requires some coherent championing over the next few years.

Key conclusion:

The global discourse around transboundary water resources management should be reframed to ensure it is more locally relevant, politically sensitive and resource effective. This would be assisted by a global coalition of relevant role-players convened with the aim of facilitating this reframing and the adjustment of the international architecture, where necessary.

3.3 Global Institutional Architecture: “Need for Legitimate Facilitation”

3.3.1 Facilitating and Coordinating Institution

The global institutional mapping process highlighted the absence of a dedicated facilitator and coordinator with a broadly accepted mandate for transboundary management; this position has been supported by various other reviews¹⁷. Furthermore, there is an absence of a global and in most cases even a regional strategic intent (except for EU/UN ECE and SADC) reflecting local needs and priorities, linked to a mechanism for monitoring and evaluating progress. These requirements are relevant with or even without the UN Convention being in force. In the absence of a UN Convention in force, other mechanisms for early dispute resolution may also need to be explored.

The critical issues requiring engagement relates to the nature of such an institution or mechanism, in terms of its mandate, role and functions, the relationship with existing institutions’ engagement with transboundary issues, the degree of decentralisation that would be appropriate, and the resources required to ensure its effectiveness and sustainability.

Firstly, there is a question around which functions are required and which need to be mandated at a global or regional level, possibly including:

- Promoting and advocating for appropriate transboundary water management.
- Coordinating the identification of priorities, strategic intent and targets.
- Building and sharing knowledge around transboundary practice and approaches.
- Coordinating global and/or regional responses to critical emerging issues.

¹⁷ Sweden (2001) Transboundary Water Management as an International Public Good. Ministry of Foreign Affairs, Sweden & Varady and Iles-Shih (2005) Global Water Initiatives: What Do the Experts Think? Report on a Survey of Leading Figures in the World of Water. Workshop on Impacts of Megaconferences on Global Water Development and Management, Bangkok, Thailand. January 29-30.

- Aligning transboundary water management with related sectors' global architecture.
- Facilitating cooperation and institutional strengthening between watercourse states.
- Fostering appropriate capacity building by relevant institutions to targeted levels.
- Monitoring and evaluating progress against agreed targets and obligations.
- Facilitating dispute resolution between countries.
- Coordinating and facilitating funding flows to priority areas.

It is important to recognise that the critical requirement is for a mandated body to sensitively (with a light-touch) promote, coordinate and facilitate transboundary water resources cooperation in line with internationally accepted principles, and in some cases act as (or identify) an honest broker between countries (on request) in their attempts to negotiate agreements. Other functions may be considered in an evolutionary manner if and when they are perceived to be necessary.

Secondly, there is a question around the need to formally mandate an existing or new body, institution or mechanism to perform these functions globally or regionally, with the following general options:

- ✚ **Global mechanism:** This approach would involve the formulation and recognition of a coordinating mechanism at a global level, preferably hosted by an existing institution, such as UN Water, GWP, INBO, etc, as a focal point/champion for transboundary activity, with some of the abovementioned responsibilities/functions.
 - While a new transboundary facility has been envisaged by other processes, this option is not deemed to be practicable in the current financial and institutional climate.
 - UN Water has a Task Force on transboundary waters, but this suffers from the mandate and resource limitations of being yet another small group with limited mandate and resources engaging in transboundary water management.
- ✚ **Regional facilitators:** This approach would build on success with EU, UN ECE, SADC and ECOWAS regional water initiatives on transboundary management under the auspices of the regional economic communities, by promoting, mandating and strengthening relevant institutions in other regions of the world to take on transboundary issues. While this ensures local relevance, it may result in inconsistencies in implementation between regions.
- ✚ **Multiple champions:** This approach would build on existing mandates of UN related groups (FAO, UNEP, UNDP, etc) to facilitate / promote transboundary issues related to their core mandates, possibly coordinated by dedicated capacity in UN Water. This would enable functional relevance, but poses consistency and resource issues, with the dilemma that none of these has transboundary issues as a primary focus.

These options are not necessarily mutually exclusive and a hybrid approach may be appropriate, with a small mandated global facilitating body for the core functions working with other global institutions, in specific priority regions and basins. However, an internationally mandated and

recognised group is critical to provide a point of focus for the facilitation, coordination and advocacy functions outlined above, preferably in partnership / network with other global and regional bodies.

3.3.2 Global Transboundary Funding Arrangements

The financial support to transboundary water management is uneven between basins and does not necessarily reflect the priorities for cooperation internationally. While this does relate to national political interest and transboundary articulation of imperatives, some of the problem relates to uncoordinated funding through bilateral agreements. With the emergence of an international transboundary water facilitation mechanism, there is a possibility to coordinate funding and financing of transboundary water resources management, linked to regional strategies around priorities and targets (see below). This does not imply another funding mechanism (as support for this is unlikely to be forthcoming), but more coordinated allocation of funds against regional and transboundary needs. This may be enabled through existing funding mechanisms at global, regional and transboundary levels, particularly around the basic support required to foster appropriate and efficient mechanisms and/or institutions for transboundary cooperation.

Key conclusion:

A global group/body should be recognised and mandated internationally to promote and coordinate global and regional dialogue and strategic processes around transboundary water management, as well as to advocate for and facilitate transboundary institutional development processes and funding, in partnership with other key global and regional institutions. It is however critical that this group is clearly mandated as the lead on international water management, rather being just another policy and technical body. Furthermore, it should build on or be hosted by a relevant existing organisation, rather than be another independent entity.

3.4 Regional Coordination: “Integration, Consistency and Relevance”

EU, UN ECE and SADC have demonstrated the benefit of regional cooperation in the water sector. The question is whether this is replicable and even desirable, and whether this should involve the establishment of regional legal instruments (such as the SADC Protocol), based on the UN Convention. The following discussion distinguishes between regional institutions and legal instruments.

3.4.1 Development of Regional Institutions

Where regional economic communities are established and functioning, management of water resources at a transboundary (as well as national level) has typically emerged as an important integration and resource management issue, reflecting regional political and economic imperatives. This may also be on the back of regional energy pools or food security pools, as opposed to more comprehensive regional economic integration. The possible mandating and strengthening of existing (or even emerging) regional institutions in other regions provides a potentially valuable mechanism to promote, coordinate, support, strengthen and/or monitor transboundary water resources management, reflecting regional priorities and conditions.

While this may enable significant decentralisation of the international architecture, it would not necessarily replace the need for a global facilitator and may introduce unevenness between regions

(which is not necessarily inappropriate). However, more significantly, there may be unevenness in uptake of this institutional approach between regions and the possibility for capture by hegemon within these regions, with an interest in dominating the discourse around transboundary management. The issue of resource requirements and regional self-sufficiency may also be an emergent consideration. It may therefore be more appropriate to view opportunistic regional strengthening as part of the broader global strengthening of coordination and strategic alignment around transboundary management (referred to in the previous two sections).

Even in the absence of mandated regional instruments, it may be appropriate to convene regional cooperation conventions/bodies (possibly under the auspices of existing regional institutions) to formulate regional priorities around transboundary water resources and associated energy, food and trade considerations and based on this to discuss regionally relevant approaches to transboundary management. If framed appropriately from a joint risk paradigm under variability and uncertainty, rather than legal compliance (initially distanced from UN Convention in some cases), this may encourage regional hegemon to participate.

3.4.2 Establishment of Regional Legal Instruments

If an institution is mandated through a regional economic community, there is a possibility to further strengthen the regional mandate through the establishment of a regional legal instrument. Two regimes attest to the influential role that regional institutions and instruments can play in managing conflict and enhancing cooperation of transboundary basins, namely the 1992 United Nations Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes, and the 2000 Southern African Development Community Revised Protocol on Shared International Watercourses.

A number of advantages in adopting a regional approach arise. Firstly, tackling such issues at a pan-basin level helps to balance out asymmetries between States. While certain rights and obligations will still be contingent on basin specific factors and circumstances, at least minimum standards can be agreed upon at the regional level where the influence of hegemon vis-à-vis other states or state coalitions is likely to be less. Secondly, adopting a regional approach can provide a mechanism by which to constantly monitor the implementation of basic rights and obligations over transboundary basins within a region, and support the strengthening of such basic norms, through training and knowledge transfer initiatives.

Experience from SADC and the UN ECE would tend to support the argument that gaining such benefits from a regional approach is contingent on certain legal and institutional factors being place. A key element of both the SADC and UN ECE regional regimes has been the strong emphasis on a framework type agreement coupled with supporting institutional arrangements. Such framework agreements lay out fundamental rights and obligations that contracting states must adhere to including utilizing their shared resources in an equitable and reasonable manner, protecting and preserving ecosystems, notifying and consulting on planned measures, entering into negotiations concerning the establishment of joint management mechanisms in good faith, and resolving disputes in a peaceful manner. In addition, as framework agreements both the 1992 UN ECE Helsinki Convention and the 2000 SADC Protocol encourage basin states to harmonize or establish basin agreements over their shared watercourses. A further notable feature of both regional regimes has been the inclusion of an institutional framework for implementation. Such institutional

arrangements, including meeting of the parties, secretariat, working groups, etc., have played a strong role, not only in monitoring but also supporting the implementation of these regional regimes. Both regimes have also been able to rely on a tradition of regional integration and existing complementary legal and institutional structures.

Given the existing and potential benefits of regional instruments on transboundary basin management, promotion of the extension of this approach to other regions may be considered, particularly in other parts of Africa and Asia. Existing regional integration initiatives, such as ECOWAS, UNCLAC or UNESCAP, could play an important role in facilitating such an approach. However, it should also be considered that these (SADC and EU) regional instruments have arisen under specific historical political and economic conditions, which are not necessarily in place in other regions. In some regions, the political and diplomatic effort required to draft and ratify such instruments probably outweigh the advantages, and definitely would appear to exceed the requirements to bring the UN Convention into force. It would therefore seem to be inappropriate to consciously build the international architecture around regional instruments, except where these organically arise.

Key conclusion:

Regional “transboundary cooperation conventions” should be promoted to facilitate a strategic dialogue and common understanding of the regional imperatives, shared risks, potential benefits and priorities for transboundary management, which should guide global support. Where possible, a regionally acceptable (“neutral”) institutional convenor for transboundary matters should be recognised, but regional legal instruments and institutions should only be promoted where regional economic or political conditions are organically moving in this direction.

3.5 Transboundary Management: “Appropriate Basin Agreements”

The focus of the entire paper has been on the international architecture supporting transboundary management. This is given effect through transboundary agreements on water management and/or transboundary institutional development. It has been strongly argued for a flexible approach to reflect local conditions, that comprehensive agreements are not necessarily required for every basin, that bilateral issue-based agreements may be adequate (rather than inclusive multi-lateral agreements), that transboundary organisations are not necessary for all agreements (committees may be adequate), and in some cases that an agreement (and institution) may serve a number of basins.

3.5.1 Tailored agreements for local needs

Transboundary agreements are fundamental to cooperation between Parties, particularly where joint planning or action is required. However, it is important to recognise the distinction between the water management and institutional development focus of these agreements, and to ensure that these align with each other (if not in the same agreement).

While no ‘one-size-fits all’ model of transboundary agreements exists, basin states should take into account a number of key legal issues when considering how to establish or strengthen legal arrangements over their shared watercourses. In terms of *scope of these agreements*, there is a need to clearly define which riparians the agreement applies to and the nature of the obligations of

the Parties to the agreement, considering the principle of inclusivity, i.e. that all relevant and interested riparian countries should be allowed to participate in negotiations and/or be party to the agreement. The UN Water Convention provides a framework and sound principles upon which to develop transboundary water agreements, whether it is in force or not.

Substantive norms that include clear and flexible criteria for the distribution of benefits, for water allocation (e.g. equitable and reasonable utilisation), and the protection of ecosystems should be taken into account, but applied according to the issues and concerns within the basin. Successful implementation of any substantive norms will be contingent on *procedural rules* such as notification and consultation, exchange of information, etc.

Similarly, appropriate *institutional mechanisms* will support implementation efforts. However, in recognition that a joint commission might not always be the most efficient mechanism for facilitating cooperation, international law is non-prescriptive as to the type of institutional arrangements that should exist. Finally, international law requires that states settle their disputes in a peaceful manner, through appropriate measures such as good offices, mediation, arbitration or adjudication.

As noted above the effectiveness of transboundary agreements will also be largely contingent on: i) the (legal) normative content of the agreements (ie. are rights and obligations set out in a clear and coherent manner), ii) the process by which agreements are adopted, iii) the social, economic and political context in which a particular agreement operates, and iv) the multi-level governance aspect of transboundary waters.

3.5.2 Evolutionary pathways for institutional development

It is necessary to recognise that river basin organisations / commissions are not necessarily the pinnacle or even desirable in all transboundary situations, and that the institutional mechanism for cooperation should reflect local priorities, needs and capacity. Furthermore, an organic evolutionary approach to institutional development is likely to be more sustainable than externally driven processes, although some external facilitation may be warranted in situations of low capacity and increasing water stress. Lastly, it is important to consider the six basic (but not mutually exclusive) motivations for cooperation (each of which requires a different institutional arrangement), namely:

- regional imperative for integration (requires an inclusive basin committee or commission),
- intention to develop joint infrastructure (requires joint development authority),
- need to manage a specific issue between two countries (requires bilateral committee),
- imperative to build confidence between riparians leading to coordinated allocation and/or management at a basin level in stressed water resources (requires basin committee),
- opportunity for regional trans-basinal cooperation around trade, energy or food with water as an underlying resource (possibly requires regional trans-basinal committee, with cross-sectoral representation), and
- need and opportunity for joint management or regulation (requires mature relations).

3.5.3 Interpretation of Transboundary Management Aspects

It is important to acknowledge that the mandates typically given to these institutions by the Parties to an agreement depend upon the purpose of the agreement (linked to the five motivations for cooperation outlined above). Infrastructure authorities typically have a mandate around the development, financing and/or operation of infrastructure, while many cooperating bodies (bilateral committees and multilateral commissions) primarily have a joint planning, information sharing and advisory role to the parties, with implementation through national institutions. This has fairly profound implications for the interpretation of the following functions at a transboundary level and the approaches that are adopted at transboundary and national level to ensure their implementation.

Integrated or joint basin planning: There is a key distinction in the concept of integrated planning in the transboundary context. On the one hand, a fairly ubiquitous approach (often promoted by cooperating partners and consultants) is for “integrated basin master planning”, where management activities and responsibilities are defined to meet basin objectives and that these are specified and agreed at a basin level. On the other hand, there is an emergent approach of joint basin planning resulting in a joint framework strategy with objectives and principles (that operationalise the concepts of joint planning and “reasonable and equitable” use), providing an umbrella for cooperation (possibly with specific plans for joint activities). The actual planning of activities and responsibilities for implementing the joint plan is then done by countries through national and catchment planning processes under national legislation, etc (or even bilaterals where an issue is localised in the basin). This latter approach is more conducive to the cooperative and advisory nature of transboundary cooperation, and poses less threat to concerns about sovereignty and national interest.

Monitoring and information sharing: Alignment in monitoring, sharing of information and joint / common methods for assessment are fundamental to effective cooperation and the first steps of building trust between countries. However, there are various hurdles to achieving this, largely related to strategic/legal impediments for certain countries and unevenness in capacity between countries. The former relates to the definition of water resources information as being restricted in the strategic national interest, while the latter relates to consistency and accuracy in sampling / monitoring, unwillingness to share with other countries, unclear rules about information dissemination, etc. While basin institutions may advise parties to implement a monitoring and information system that supports basin planning, it is ultimately the national level institutions that will do this in each country.

Stakeholder engagement: The requirement for stakeholder engagement underpinning sound water resources management is broadly accepted and is reflected in international customary law. The role of transboundary institutions in stakeholder participation is not clear and may be done at a national level and then reflected in the country representatives, may be done jointly around particular projects (infrastructure or basin planning) and/or may be done at a basin level, depending upon the purpose of engagement and the stage of evolution of the transboundary cooperation process. While the last option is often assumed, it may introduce complexities for the countries concerned and must be evaluated against the priorities and conditions within and between the cooperating parties. There seems to be an emerging view that participation evolves over time from national engagement to transboundary engagement, as institutional cooperative arrangements mature.

Basin financing arrangements: The funding of institutional development, operation and basin level projects remains a contentious issue for transboundary water management, particularly in resource limited countries and regions. The emerging practice that the institutional and legal development process may be externally supported, with institutional operations being funded by country contributions, provides a compromise between pragmatic support and basin independence. However, approaches to the long-term sustainability of these initiatives must be continually tested and refined, noting the challenges of raising funds from users within these basins and the need to have credible fund raising and disbursement mechanisms at the basin level.

While much of the above discussion in this section relates to the reframing of the discourse around transboundary management, this highlights that it has very real implications at a transboundary and national level. While accepting that each process needs to reflect local conditions and be flexible to changing conditions, there are some broader principles and approaches that should be explicitly considered within transboundary agreements. Some of these are captured in the various global legal instruments, while others are at the level of emerging practice, which makes the need for continued engagement of a global discourse that much more important.

Key conclusion:

Transboundary agreements should reflect local conditions, imperatives and priorities, following generally accepted legal principles for transboundary management. Institutional arrangements should be established in an evolutionary manner according to the requirements for cooperation. Flexibility, adaptation and evolution should underlie the formulation of agreements and associated institutional arrangements, not a one-size-fits-all approach.

3.6 National Engagement: “Levelling the Playing Field”

Riparian states within a transboundary basin are seldom at the same level of economic, political or social development. Often, significant differences exist, putting one riparian state in a stronger position than others. This power differential is often compounded by the position of states on a river, with upstream states often (but not always) holding greater power than downstream countries. Positional power such as this, can, however, be counter-balanced by a range of factors, including greater economic, political or military power of downstream countries.

The differences in levels of development of riparian states also give rise to different capacity for water resource management, for engagement with other countries around water resource management, and for engagement with the donor and international community. Such differences may put one or more country at a disadvantage relative to others, and may negatively affect effective and equitable co-operation.

3.6.1 Targeted national institutional management capacity

Effective transboundary water management is dependent on sufficient institutional capacity at the national level to manage water resources competently, and a balance of competence across the basin. Without sufficient capacity and appropriate institutional arrangements at the national level, it is difficult to envisage the development of transboundary agreements that serve national and basin priorities, and that engage effectively with the broader concepts of benefit sharing.

The achievement of this scenario implies that it may be appropriate to run dual processes within a basin, building national competencies within certain riparian states and decision makers, while simultaneously engaging at the transboundary level. It must however be recognised that this process requires significant resources and time, as does any institutional development and strengthening initiative.

3.6.2 Policy and legal capacity

The ability for parties to engage in transboundary water management processes and agreements is, however, not only dependent on the national management capacity for water resources management. It is also dependent on national legislation and policy. The framework set by national policy and legislation will strongly influence the ability and the desire of a riparian state to enter into transboundary arrangements. This desire will be driven not only by water policy and legislation, but by the political and economic policy guiding the country.

Harmonization of national, regional and international laws relating to the management of transboundary basins, is essential for ensuring that waters are utilized in an equitable and sustainable manner. The management of resources and the provision of services both require effective legal structures, and water law reform is taking place all over the world.

3.6.3 Combined forces balancing power

While there is a common wisdom that the most effective river basin agreements include all riparian states, experience shows that even when not all riparian states are signatories to an agreement, there can still be benefits to the agreement. This is particularly relevant when the agreement enables co-operation between weaker states in a basin. Such co-operation may reduce the power of a basin hegemon and increase the moral authority of the co-operating states. This may be supported when these initiatives are linked to a broader risk based approach to water, energy and food security at a transboundary and/or regional level.

In this regard, while the involvement of all riparian states might be seen as a desirable outcome in stressed basins, agreements which do not include all basin states may bring significant benefits to transboundary basin management. Thus a flexible approach should be adopted that fits best with the political reality of a particular basin, and which envisages a process in which the cooperation of all riparian states may take many years. A gradual and opportunistic approach, which begins with the politically feasible at any point in time and moves forward from there, may be the most effective. This however requires a degree of continuity of facilitation and support at the global and regional level that is currently lacking.

Key conclusion:

National water management capacity is the basic building block on which all transboundary water management (and the associated international architecture) depends, with asymmetries in the capacity of riparians posing a significant impediment to effective cooperation. Processes to facilitate cooperation between riparians in stressed or threatened basins should therefore include national institutional capacity building initiatives to “level the playing field” and ensure alignment with the pre-requisites for effective transboundary cooperation.

3.7 Corporate Engagement: “Exploring Shared Risk”

There is an increasing recognition by corporates of their risk around water, associated with physical, reputational, regulatory and financial risks. While corporates’ objectives are primarily based on short-term and/or long-term economic growth, there are situations in which these risks align / coincide with the political, economic, social and environmental risks faced by governments and civil society, particularly under situations of increasing uncertainty. The concept of shared risk provides an important frame for dialogue between public and private sector representatives at a global level and is being taken up by corporate fora at the national and global level. This may be expanded into the perspectives of regional energy and food security (particularly from the perspective of corporates increasingly vulnerable supply chains).

3.7.1 Global and Regional Corporate Engagement

Historically, global and regional dialogue has primarily been between governments and related institutions, with some contribution from international non-governmental organisations. With the emerging engagement of corporate fora around water policy issues (particularly the World Economic Forum and CEO Water Mandate under the UN Global Compact), there is an opportunity to explicitly recognise and engage these fora and their positions in the international architecture. This must be done carefully and incrementally, as corporates are still developing coherent positions around water policy (and transboundary issues) and the perceptions of potential institutional capture would be damaging for all role players. The aim of this engagement should be to mobilise resources from the private sector to assist in the reduction of shared risk around water, as well as to improve corporate behaviour and engagement with water issues in their operations and supply chains.

3.7.2 Global Trade and Transboundary Water

Global trade and the emerging trend for countries’ and corporates to buy up land and water for future production highlights the importance of the water and trade debate. Transboundary waters provide a special case for water and trade, because on the one hand it is a shared resource that enables productive activity and on the other hand cooperation around water fosters integration and cooperation. Three key issues may be relevant for trade and transboundary management, namely:

- ❑ The legal constraints imposed by international trade agreements (and international investment law potentially transcending national law) on the allocation of water and meeting of environmental requirements within and between countries associated with a transboundary basin, where multinational corporates have existing rights or entitlements. This is potentially exacerbated by government intermediate entities from countries with limited water or significant population buying or long-term leasing of land (and the associated water) in developing countries for future food security¹⁸.
- ❑ Implications for cooperation and benefit sharing in the context of regional economic integration, trade blocks and customs union for countries sharing a transboundary basin, as well as the opportunities for maximising regional output for trade with other countries or economic blocks.

¹⁸ This issue is outlined in IFPRI (2009) *Land grabbing by foreign investors in developing countries: Risks and opportunities*. Policy Brief 13, linking Gulf and Southeast Asian states to this practice.

- ❑ Implications for the trade (and possible barriers) in goods with significant quantities of embedded water from basins with water resources limitations or food, energy or industrial security concerns, as water footprint and water security issues increasingly gain public exposure.

All of these imply the need for engagement between international trade, investment and water law and policy, considering the implications for transboundary agreements and national water policy and legislation. Again, groups like WEF are particularly suited to consider and engage these debates and may indicate the need for international water law to balance trade law.

3.7.3 Private Sector Financing

With the level of joint infrastructure planned in the next couple of decades and with the emerging financial constraints on markets and governments (due to borrowing), there will be a need to think innovatively around private sector capital and its use for bankable water development projects. This may also consider a rethink about the interpretation of bankable and possible relationships between public and private financing, which could be facilitated through corporate engagement with the international architecture. Again, the link between water security and regional energy and food security is an important consideration for private sector financing, as well as hydropower operation. Other innovative mechanisms may be considered within a transboundary context, such as facilitating private sector financing through basin revolving trust funds and exploring political insurance for companies' investment within transboundary basins.

Key conclusion:

With the emerging recognition of private sector risk around water, there is an opportunity to strengthen the engagement between global corporate representatives and the international architecture for water resources (including transboundary water management), through the shared risk paradigm.

3.8 UN Convention: “Instrument or Principles”

The remaining critical issue for transboundary water management relates to the UN Convention and whether the entire international architecture is fundamentally supported by it being in force. The legal implications and rationale for the UN Convention coming into force or not were outlined in the previous Chapter. This position has been well articulated elsewhere and provides context to the discussion, but needs to be woven into an analysis of the institutional and policy considerations for transboundary management, as a coherent perspective on the international architecture.

The challenges and opportunities around the international architecture that have been outlined in this report must be brought into the discussion, and particularly the way in which the UN Convention provides a legal instrument to support or strengthen the international architecture at a global, regional, transboundary and/or national level. Finally, it should be recognised that the process of ensuring that the required number of countries accede to the UN Convention will take significant diplomatic and lobbying resources, particularly if this needs to build legitimacy through accidence by a representative group of countries from the different continents. The potential benefits of strengthening the international architecture need to be viewed against this resources commitment. For the purposes of this paper, this may be viewed from two perspectives, namely:

- ❑ Firstly, are the benefits to the international architecture of the UN Convention being in force worth the effort required to ensure accession by enough countries?
- ❑ Secondly, given this, what are the considerations around acceding for a country that originally endorsed the UN Convention in the General Assembly¹⁹?

While the focus of the analysis should be on the role of the UN Convention in strengthening the international architecture, the converse and related consideration relates to the implications for the UN Convention coming into force and requirements from the international architecture. Both of these are reflected in the following discussion.

3.8.1 Role of the UN Convention in the International Architecture

Referring back to the architecture analogy, the UN Convention provides rules for the entire building. An assessment of the need for such rules must consider both the internal structure and arrangement of the building and the external environment within which it operates. For the international architecture, this relates to the institutional arrangements (including other legal instruments) at the global, regional, transboundary and national levels, as well as the characteristics of the transboundary water resources management environment within which the international architecture will be required to operate within the next couple of decades.

As outlined in the first part of this paper, water stress is likely to increase (albeit uncertainly) in a number of hydrologically highly variable transboundary water resources over the next 10 to 20 years, due to demographic, economic and climatic change. This is likely to be accompanied by a tightening of water allocation regimes and increase in infrastructure development, to meet and balance increasing energy, food, industrial and domestic water supply requirements at a national and regional scale, as well as to sustain environmental requirements for biodiversity and/or ecosystem services. These converging processes, the potential risks they pose and the opportunities for shared benefit they provide, imply the need to foster cooperation at a transboundary and even regional scale. National interest and unilateral action will not be adequate to optimise resource utilisation and avoid significant negative impacts on local livelihoods and ecosystems.

Returning now to the existing structure and opportunities for the international architecture, the challenges and opportunities identified in the preceding discussion have differing requirements from the UN Convention at global, regional, transboundary and national levels.

Global functional asymmetry

Key opportunities to engage the challenges at the global level relate to reframing the dialogue, mandating a global facility and recognising corporate engagement. Of these, only the global facility has any real bearing on the UN Convention, particularly in terms of its mandate and credibility. It is argued above, that due to the increasing challenges facing transboundary waters over the next couple of decades, a single global point of focus is needed to improve coordination and facilitation of transboundary water initiatives (at regional, transboundary and national levels). While this has been legitimately argued to be a regional public good with international characteristics, it is important to

¹⁹ An alternative framing of this question may be whether there are compelling reasons that such a country should not accede to the UN Convention.

recognise the increasing inter-dependence of the world economy and society related to trade, food, energy and increasingly embedded water. This implies that the management of transboundary waters is of increasing global interest, thereby motivating for a global response. While any number of institutions could be appointed/agreed globally to take on this role, for any institution to be effective it would require some level of mandate to strengthen its legitimacy. The UN Convention in force clearly provides this mandate, including for monitoring which is critical for coordination and promotion of cooperation. In the absence of this legal mandate, the facilitating mechanisms may be viewed as just another of the plethora of institutions with an interest in water resources and transboundary cooperation.

Regional geographic asymmetries

While there are opportunities to strengthen regional institutions and even create regional legal instruments, as well as to convene regional strategic dialogues around transboundary water and related sector initiatives, these do not depend upon a UN Convention in force. Nevertheless, an overarching global level instrument may support these initiatives, as long as it is used sensitively and not as a polarising mechanism.

Transboundary hydrological asymmetries

The opportunity at a transboundary level is to foster cooperation between riparians and where necessary (due to stress or threat) to develop appropriate transboundary agreements. Ironically, transboundary cooperation is seldom prompted by international legal requirements, but rather by political and economic considerations, so the UN Convention is unlikely to be a primary reason for transboundary cooperation. Furthermore, many of the key cooperative provisions in the UN Convention are already recognised and enabled through international customary law, including reasonable and equitable, prior notification and the dispute resolution mechanisms. On the other hand, whether the UN Convention is in force or not, it is widely recognised as capturing key principles that should be included in transboundary agreements. Specifically, the UN Convention only facilitates the development of appropriate transboundary agreements and associated institutions, recognising the need for flexibility and for these to be relevant and appropriate for the local circumstances. Nevertheless, if it is used sensitively and judiciously, the UN Convention being in force would provide a valuable framework for cooperation at a transboundary (and transbasinal) level and would build the case for adoption of good practice in the development of transboundary agreements and institutions, where needed.

National capacity asymmetries

The two key dimensions of national capacity are the ability for countries to engage in transboundary management (due to policy alignment, institutional capacity and awareness), and for weaker countries to articulate their interests against those of stronger riparians. In terms of the latter, the UN Convention in force should strengthen the weaker voices in a catchment by giving legal and moral (political) stature to their interests, with regard to the actions of other riparians and their obligations under international law. These weaker voices would include countries with less capacity and political-economic power, as well as marginal groups (and their representatives) within countries that are dependent upon transboundary waters and their management, i.e. typically livelihoods for communities and aquatic ecosystem functioning. While the UN Convention coming

into force would not immediately level the playing field and would not be binding on non-signatories, it opens the door for these weaker voices to articulate their interests on a specific basin through transboundary, regional and even global dialogue around the obligations of other countries and the need for cooperation. Again, the UN Convention would need to be used as a scalpel not a sledgehammer, in order to avoid polarisation and exiting by the stronger parties. Furthermore, with the UN Convention in force and supported by a globally mandated body, there is increasing likelihood of countries engaging transboundary issues due to opportunities for creating political awareness, through alignment of policy and legislation and with national institutional engagement (as has happened in SADC with the Protocol).

From this assessment, there are two central arguments in favour of bringing the UN Convention into force, against the backdrop of expected changes and increasing stress in transboundary waters over the next couple of decades, namely:

- The UN Convention provides a clear institutional mandate for a global facilitator to promote, coordinate, facilitate and monitor appropriate transboundary cooperation, through regional dialogue and institutions.
- The UN Convention strengthens the weaker voices of countries (and marginalised groups) against stronger riparians for cooperation (and achieve water management obligations), particularly when supported by a global institutional framework²⁰.

A series of related legal and political benefits arise from this rationale, which interestingly focuses at strengthening the overarching global support and underlying national engagement, representing the two opposite elements of the international architecture.

3.8.2 Implications of the UN Convention coming into force

Effective management of transboundary water resources requires a strengthening of institutional cooperative and management capacity, but this is often occurring in situations of relatively low institutional capability at a national level and almost non-existent capacity at a transboundary level. In this context, relatively clear rules of engagement and cooperation around shared resources is an important (but not sufficient) pillar to foster institutional development. Variants of these arguments have been articulated in a number of papers²¹ and it has been a common theme throughout this paper, but the critical issue then is what else needs to be in place to ensure that the UN Convention as part of the international architecture supports these ambitious outcomes.

Learning from the experience of SADC and UN ECE (amongst other treaties), successful implementation of the treaty regime is largely contingent on supporting institutional structures at a global and/or regional level, together with negotiation of appropriate agreements at a transboundary level. From the legal perspective then, the minimum institutional requirement for effective implementation of the UN Convention is for a global mandated UN associated body to promote, coordinate, facilitate and monitor transboundary initiatives. These would need to be

²⁰ In the architectural analogy, building rules are needed to strengthen the body corporate and to strengthen the voice of the company at the end of the passage that may be ignored by others.

²¹ Grey, David and Claudia Sadoff (2007) *Sink or Swim? Water security for growth and development*. Water Policy 9: 545-571

focused through regional “strategic conventions” to determine common understanding of the national and regional priorities, approaches and specific conditions for transboundary water management in the context of broader economic, energy and food security initiatives/imperatives. All of this needs to be established in the context of a reframing of the global discourse to reflect a more nuanced and flexible approach to transboundary water management and the understanding of transboundary water processes as being embedded in national and regional political-economies.

There is an important practical implication of the UN Convention in that it places an implied obligation on signatories to ensure effective water management within their areas of jurisdiction for transboundary watercourses, related to ecosystem protection, pollution and alien species control, disaster mitigation and information sharing. While these are aspirational obligations, it must be recognised that countries have varying levels of institutional capacity to ensure all these functions at a national or sub-national level, without even considering the transboundary impacts. The implementation of the UN Convention by a country therefore should be understood as a gradual process, with adherence to clauses that have specific priority between countries, within the transboundary basin or regionally, particularly where these are translated into bilateral or multi-lateral agreements.

It should also be recognised that the UN Convention does not imply the proliferation of multilateral agreements and transboundary basin organisations, but rather should be focused on those transboundary water resources that are already at risk, are threatened or are fundamental to the engagement of regional trade, energy or food security and which are not already covered by appropriate agreements.

Finally, for a framework convention such as the UN Convention to be effective, its perceived legitimacy must be compelling. This depends upon an adequate and representative number of countries ratifying and acceding, which impacts on the strategy for bringing the UN Convention into force (currently requiring 19 more accession instruments). Even representivity is not achieved up until ratification (which would be the situation if all European countries acceded), the diplomatic and lobbying process would need to continue, but this could be under the auspices of the mandated facilitator, supported by the critically important monitoring requirement of effective international treaties.

3.8.3 Should an endorser of the UN Convention accede?

In 1997, 106 countries voted for the UN Convention, but less than 20% of these have ratified or acceded since then. An important question is then given the conclusions of the preceding institutionally based assessment of the UN Convention, whether there has been any material change in customary law or the context of transboundary management to make these countries’ initial endorsement invalid and therefore support the position of not acceding.

On the one hand, the interdependencies of global trade, food and energy resources which are directly dependent on water resources (and increasingly transboundary waters) imply that all countries have an increasing interest in the management of these resources. Furthermore, aquatic ecosystems and marginal communities dependent upon them for their livelihoods will become increasingly vulnerable to upstream decisions on transboundary waters, so those countries with an interest in global poverty, livelihoods, biodiversity and sustainability should be concerned about

improved cooperation and strengthening of these voices. It may therefore be argued that the preceding conclusion that the UN Convention in force will importantly strengthen the international architecture for transboundary management should be supported by countries with these interests.

On the other hand, following the review and interview process conducted as part of this project, there appears to be widespread support for the principles enshrined in the UN Convention and recognition that the UN Convention largely reflects customary international law around shared watercourses. While apathy may mitigate against mobilising the internal resources for acceding, this does not seem to be an adequate defence against the imperative for the UN Convention coming into force. Not acceding is relevant for those countries that do not wish to be bound to these principles and obligations, but this does implicitly position the country outside of broadly accepted norms of international transboundary cooperation, noting that they are bound by many of these provisions through international customary law.

Key conclusion:

The UN Convention in force importantly provides both a mandate for the global transboundary facilitator and strengthens weaker voices for transboundary cooperation, which are key elements of the international architecture and increasingly necessary for stressed basins. Those countries with an interest in promoting cooperative management of transboundary basins and engaging sustainability and livelihoods associated with these basins should accede as a contribution to this outcome.

4 MAKING SENSE OF THE OPPORTUNITIES

4.1 Recommendations for the International Architecture

An important underlying conclusion of this paper is that the existing international architecture around transboundary water resources management is generally sound. However, there are some adaptations to this architecture required to meet the challenges of an increasingly stressed and uncertain future and the imperative to mainstream (align) water into regional political-economic initiatives. This requires simultaneously improved coordination/coherence at a global and regional level with greater flexibility/prioritisation at a national and transboundary level. The opportunities to adapt the architecture can be broadly related to the asymmetries found at the different levels:

□ Global level

There is a *functional* asymmetry at the global level, with inadequate mandate and resources provided for coherent and consistent coordination and facilitation of transboundary water management, and a predominance of “northern voices”. Greater coherence and alignment is required globally, particularly around the support to and coordination of policies, strategies and programmes supporting transboundary initiatives. Areas of particular focus should be:

- Reframing of the global discourse around transboundary water resources management to ensure that strategies and initiatives are more regionally relevant, politically sensitive and resource effective, and are embedded in the political realities of transboundary management. The need within basins is for flexibility and latitude through recognition that transboundary priorities should guide interventions, that the basin footprint may be greater than the basin itself, that political, economic and social linkages must be recognised for transboundary water management and that the institutional model for transboundary cooperation should reflect the local needs. This would be assisted by a global coalition of relevant role-players (key institutions with influence / interest in transboundary matters, as well as representatives of developing regions) convened with the aim of facilitating this reframing and the adjustment of the international architecture, where necessary.
- A global group/body should be recognised and mandated internationally to promote and coordinate global and regional dialogue and strategic processes around transboundary water management, supported by monitoring and reporting of progress with transboundary cooperation. This would include the promotion and facilitation of transboundary cooperation and institutional development processes, possibly supported by funding and resources, in partnership with other key global and regional institutions. The pressure for this level of coordination is likely to increase as global transboundary water resources becoming increasingly stressed and the risks to riparians of non-cooperation increase. The appetite and need for independent facilitation of cooperation processes is also likely to increase with these pressures. It is however critical that this group has the credibility globally to play this role. This group therefore needs to be clearly mandated as the lead on international water management (with strong institutional relationships with other institutions), rather being just another policy and technical body and should build on or be hosted by a relevant existing organisation, rather than be another independent entity.

- Following this global need, it is institutionally important for the UN Convention to come into force in order to provide the mandate for this global transboundary facilitator, as well as to strengthen the weaker voices for transboundary cooperation. These two dimensions are critical to promote cooperative management of transboundary water resources, building on the increasing challenge of national risks related to non-cooperation under change and water stress, as well as the share benefits of regional cooperation in an increasingly resource scarce environment. They also relate directly to the interests of third-party countries that are indirectly dependent upon these water resources through trade, have an interest in global energy and food production, and support sustainable use of resources and poverty reduction through sustained livelihoods.
- A further opportunity at the global level relates to recognition of the increasing engagement by global corporate representative bodies (such as WEF, CEO Mandate and WCSBD) around shared risk and trade in the transboundary context, linked to the realisation and appetite to engage emerging corporate physical, reputational, regulatory and financial risks around water. This is particularly critical given the magnitude of embedded water in commodities associated with these risks in transboundary basins.

□ *Regional level*

There is a *geographic* asymmetry between regions, with significant unevenness in the imperatives, legal mechanisms and institutional capacity to support transboundary water resources management. While strong mandated regional institutions and legal instruments clearly support transboundary cooperation, these tend to emerge organically and be dependent upon political and economic integration at a regional level, which makes them less replicable. However, greater regional engagement and common understanding about transboundary priorities and opportunities, reflecting regional context would support transboundary cooperation where relevant. Particular areas of focus (possibly facilitated by a globally mandated group) may be:

- Convening regional “strategic conventions” around transboundary water resources linked to emerging regional economic/trade, energy and food blocks/pools, to prioritise and understand the transboundary issues and cooperation from a risk and benefits perspective.
- Supporting regional initiatives to recognise and strengthen existing regional institutions to coordinate transboundary initiatives, through the strategic convention process.

□ *Transboundary level*

Hydrological asymmetry characterises the transboundary level, with each basin having distinct water resources priorities and requiring appropriate infrastructural and institutional management responses. Transboundary agreements need only be developed where there is a clear imperative for cooperation, due to existing or threatened risk/stress, joint infrastructure development, trans-basinal (energy) benefits, or regional economic integration. This implies the need to focus on priority basins, while promoting some degree of cooperation (at least at a bilateral level) on other basins. These agreements should:

- Be focused on transboundary issues of concern, rather than necessarily all aspects of water resources management.

- Enable flexibility and adaptation to changing circumstances, recognising possible evolution.
- Only create institutions that are necessary to perform the required functions.

□ *National level*

There is a pervasive *capacity* asymmetry at the national level, with countries having varying imperatives, enabling institutions and resources to perform national and transboundary water management. However, national water management capacity is the basic building block on which all transboundary water management (and the associated international architecture) depends. This may be exacerbated by unevenness in political, economic and military power between riparians, which further marginalises the weaker parties. Asymmetries in the capacity of riparians pose a significant impediment to effective cooperation, from stronger hegemonies and from weaker riparians. Particular area of focus should be:

- Processes to facilitate cooperation between riparians in stressed or threatened basins should therefore involve targeted national institutional capacity building initiatives to “level the playing field” and ensure national alignment with the pre-requisites for effective transboundary cooperation (such as policy, legislation and institutional arrangements).

Together these opportunities provide an inter-dependent suite of interventions in response to the challenges to the international architecture and implemented together in a coordinated manner, they should significantly strengthen the architecture to support transboundary water management where and when required.

4.2 Implications for International Cooperating Partners

Cooperating partners have a significant and possibly disproportionate impact on the global discourse and international architecture related to transboundary water resources, as well as on the scope of projects to support transboundary initiatives. With this influence comes responsibility to guide the international architecture in a direction that will meet the challenges of the next 20 years. For the purposes of this paper, the following interventions are particularly relevant to DfID and are based on the clear areas of focus that have been identified above.

DfID has an opportunity to promote the development of a coalition around the international architecture, particularly as there seems to be an appetite in some quarters internationally to engage this important debate. Issues that would need to be engaged are the global discourse, the recognition and mandating of a global facilitating body, the facilitation of “regional conventions” and the engagement of corporate bodies.

DfID also needs to reconsider its position on accidence to the UN Convention in the light of the conclusions of this paper, both in terms of UK accidence (i.e. engagement with UK government) and in terms of the imperative for the UN Convention to come into force (i.e. engagement of other countries).

Any DfID support to transboundary initiatives should consider the conclusions of this paper around the nature of transboundary agreements and institutions, particularly in terms of relevance, flexibility and evolution.

4.3 Implications for Environmental NGOs

Environmental NGOs have some influence on the global discourse, through national engagement and in local transboundary programme initiatives. Obviously, environmental NGOs have a mandate to raise issues on behalf of sustainability, ecosystems and local communities dependent upon transboundary water resources, typically the weaker marginalised local voices. This is likely to become more important as development pressures and climate change place additional stress on transboundary water resources. For the purposes of this paper, the following interventions are targeted specifically at WWF based on the conclusions of this paper.

WWF is well positioned to participate in the coalition around a global discourse and facilitator. It should continue to articulate positions that balance ecosystem protection with sustainable utilisation of transboundary water resources, as well as a nuanced position on transboundary agreements and institutions.

WWF should continue its advocacy work around the UN Convention, but should shift from a predominantly legal argument to one that includes institutional, policy and developmental dimensions, as outline in this paper. The importance of representivity in this process must be considered, with a balance in focus on developed and developing countries.

WWF should focus its national advocacy process on countries that have transboundary water resources that are particularly stressed or under threat, rather than a more blanket approach.

WWF programmes and projects on transboundary water resources should recognise the need for locally relevant, flexible and evolutionary mechanisms and institutions. The one-size-fits-all approach, based on an ideal IWRM paradigm, is not appropriate and should be refocused according to the lessons and challenges highlighted through this paper.