

TOWARDS NEW INTEGRATED MANAGEMENT OF TRANSBOUNDARY RIVER BASINS OVER THE WORLD.

Draft working document – v3

Business as usual cannot continue: making the case for change

Climate change, floods, droughts, pollution, wastage, water-related diseases, food shortage, and destruction of ecosystems pose serious threats on the situation of many countries and require that comprehensive, integrated and consistent management of water resources, of aquatic ecosystems and of the lands, which are their supply area, be implemented to prepare the future and meet the quickly increasing needs and adapt to global changes.

Global warming now seems to be unavoidable: freshwater resources will quickly be directly affected, with for announced consequences, in particular:

- increase of the extreme hydrological phenomena, such as droughts and floods, with the risk of huge human losses, displacement of populations, destruction and catastrophic economic damage,
- reduction of the snow cover and glaciers melting in mountains, which thus will not be able to play their part of “water towers of the planet”, by regulating the flows of the large rivers which are born there,
- decrease of rivers average annual runoff in many parts of the world, especially in arid areas,
- modification of the vegetable species and soil cover, which will result in increased erosion, and more evapotranspiration.
- rise of the ocean water level modifying the flow of rivers at their coastal mouth and increasing the salinity of aquifers.

Also, freshwater will be indirectly affected : such as more cooling which entails use of water and increase the temperature of rivers, more evaporation conducts to pollution concentration in water bodies...

At the level of large river basins, it is then necessary to develop or increase the means for observing evolutions and for modelling their probable effects, for assessing the resources available in the long term, for more effective management of the reserves, wetlands, soil cover, existing or planned hydraulic works, for controlling water demand and the various uses, for protecting agglomerations, collective infrastructures, areas of activity and arable lands against the damage caused by water, ...

The basin of rivers, lakes and aquifers, which are a sole natural water system leading to the same mouth in the sea, are indeed the relevant natural geographical territories in which to organize this integrated freshwater resources management and the inevitable adaptation to the consequences of climate change.

Commentaire [AA1] : you should go for a more proactive title, the fact that the water crisis is largely a governance crisis is now acknowledged by the international community. What we need is to go beyond the observation and make the case for change.

It is, indeed, on this geographical scale that physical, economic and political interdependence is found and expressed in resource sharing to meet the various uses or in the effects of anthropogenic pollution from upstream to downstream, and the effect of floods and droughts, hydropower production, cooling of electricity thermic or nuclear plants or continuity of waterways navigation....

True common cause between upstream and downstream areas must be created in these basins to prevent natural or accidental risks, to control pollution, to optimize the uses of the available resources and reduce their consequences on economy and development, to protect the ecosystems, to organize navigation, and thus avoid conflicts and share the benefits of coordinated joint management.

Water cuts across (local and national) administrative and political boundaries!

It is especially necessary to take into account the specific situation of the 276 rivers or lakes and several hundreds of aquifers (274), whose basins are shared by at least two riparian countries or sometimes much more, up to 18 in the case of the Danube...

In the world, 15% of the countries depend, at more than 50%, on the water resources of other upstream countries: some countries are particularly concerned: Botswana, Bulgaria, Congo, Egypt, Gambia, Hungary, Iraq, Luxembourg, Mauritania, Niger, Paraguay, the Netherlands, Romania, Sudan, Syria, Uzbekistan... they exceed the threshold of 2/3 of their water resources coming from outside their borders.

After Europe and Central Asia, Africa, in particular, is characterized by very large hydrological systems, which are born in wet tropical areas and run in arid or semi-arid areas, bringing them big water volumes and conditioning their development.

There are, indeed, 59 transboundary basins in Africa, including 28 in West Africa, covering 80% of all the territory of the area. Except for Cape Verde and Madagascar, all the African States share at least a river with a neighbour, and there are also several tens of large transboundary aquifers.

In Africa, transboundary water resources account for 80% of surface water. This results in a very strong sub-regional interdependence. Thus, Niger, Gambia, Botswana, Mauritania, Sudan, Chad, Egypt have a very significant share (exceeding 75%, and even up to 98%) of their resources coming from other countries. The Congo, Nile, Zambezi, Niger, Volta and Lake Chad basins concern between six and ten countries. The Gambia, Senegal, Limpopo, Orange and Okavango Rivers concern three or four States for each of them.

This interdependence also exists for groundwater resources: the large aquifer of Northern Sahara ("continental terminal" essentially formed by fossil groundwater) is shared by Algeria, Libya and Tunisia.

On all the continents, it is then essential that cooperation agreements be initiated or consolidated between the riparian countries of these transboundary resources, to create an indispensable common cause in the basin and to develop a common vision of the future.

Transboundary cooperation should be strengthened.

However, although many agreements have certainly been signed for several centuries by riparian countries mainly on freedom of navigation or sometimes on the sharing of flows or the prevention of floods, as well as, since the end of the 19th century, on the building of hydropower dams, today, there are still few agreements, conventions or treaties on pollution control, environmental protection and integrated management of these shared basins.

So the existing agreements are in general not embracing all issues of water management, very few of them are really dealing with a surface and groundwater joint management at transboundary scale.

Very few official agreements exist for transboundary aquifers!

Commentaire [AA2] : rather than a pure "damage control" perspective, aiming to reduce nuisances on the environment and economic development, i think we need further research and policy oriented reflexion on the economic benefits of river basin management. At some point, this requires going beyond the water box and showing how river basin management (including cross-border) can sustain economic development at large (including regional economic integration in cross-border areas) through integrated management of natural resources (not just water) for example, including the link to freshwater services, to land use and spatial planning, etc.

Commentaire [AA3] : here i would be more nuanced. I'm not sure that "agreements" are the sole instrument to foster cooperation, i even think that the over-emphasis over the past years on contracts/conventions (at the expense of more voluntary schemes and incentives for cooperation) explains why success has not been optimal :) I would rather have a sentence here that provides for a "menu of options" when dealing with cross-border water, including but not only, agreements and legal frameworks.

Commentaire [AA4] : yes, precisely because OTHER instruments can address these issues, such as economic instruments for incentivising water efficiency etc.

The existing agreements are very disparate: some only organize quantitative water sharing in the dry season (it is the case, for example, of the Joint Commission created by India and Bangladesh for the Ganges), while others have already fortunately created water management and planning bodies on the scale of the concerned basin (Mekong River Commission, Organization for the Development of the Senegal River...).

At the multilateral level, awareness only advances rather slowly.

Europe appears to be in advance: the UNECE Convention, called Helsinki Convention of 17 March 1992, lays down a framework for cooperation in this field in Europe and applies in a positive way. It is now open to the ratification of all interested countries in the World, not only in the European region.

The European Water Framework Directive, and its "Daughter" or related Directives, on their side, lay down an objective of good ecological status in the 110 River Basin Districts, of which 40 are transboundary ones, of the 28 current Member States and the Countries applying for accession to the European Union, and Norway and Switzerland: For the first time in history, 30 Countries are committed to jointly managing all their freshwater resources on a basin scale, even national or transboundary.

Resolution A/RES/63/124, adopted in December 2008 by the General Assembly of the United Nations, offers to the States a legal framework for transboundary aquifers management.

Elsewhere efforts must still be made:

There are elements for the definition of the concept of integrated water resources management (IWRM), which aims to be applied to national and transboundary water resources, in Chapter 18, devoted to freshwaters, of Agenda 21, adopted in Rio in June 1992.

But, above all, the Convention adopted by the United Nations General Assembly on 21 May 1997, on the uses other than navigation on international rivers, has not yet come into effect 16 years later, and only 32 countries have officially ratified it today out of the 36 necessary ones!...maybe the goal will be reached before the end of 2014?

The G8 Heads of State and Government, gathered in Evian in 2003, retained the stakes of better governance of transboundary basins among the priorities of their actions to come in the field of water, firstly in Africa.

Various factors, indeed, have already initiated and could in the future worsen tensions between States of the same basin. They come from strong hydrological interdependence, problems linked to access to water, a general reduction of the availability of surface waters, a decrease in groundwater level, an increase in the number of projects for infrastructures, such as large dams, irrigation canals and transfers between basins...

Nigeria, to take only one example, is concerned by the building of the Kandadji dam in Niger and the Tossave dam in Mali, which could reduce the flows of the Niger River and affect the huge energy and hydro-agricultural investments downstream of this basin.

These last years, the risk of conflicts between the riparian States of a transboundary river became much more obvious, with the increase in the water demand in the area and with the additional pressure of climate change. Before 2025, it is expected that African water consumption will increase five times as compared to the current levels.

The planned dams will worsen the pressures on river ecosystems. This requires better coordination between riparian States and the establishment of suitable mechanisms for conflict resolution and prevention for all the African transboundary basins, especially through a vision on sharing the benefits drawn from the increase in hydropower production.

Commentaire [AA5] : this would clearly involve a discussion on policy coherence between water, energy across borders. there is an angle here for the OECD to contribute if you wish, let's discuss. That requires a closer look at the economic benefits of cross-border cooperation in water management, which can set the incentives to manage trade-offs and prevent conflicts ex ante due to specific "win win" mutual dependencies

Since most of the African surface or ground water resources are located in transboundary basins, an approach at this level is indeed essential for this continent, in particular.

During the World Water Forum of Istanbul in March 2009, issues such as the « international » statute or not of transboundary waters, the methods for financing and implementing common infrastructures, the ratification of the United Nations Convention of 1997 or the management of transboundary aquifers saw divergent positions clashing, sometimes vehemently expressed, showing that it is still difficult to achieve real consensus, although most of the participants converged on the interest of the basin approaches, either national or transboundary, to face the great world challenges of water resources management..

The ministerial declaration of the Istanbul Forum supports « *the implementation of Integrated Water Resources Management (IWRM) at the level of river basins and groundwater systems, within each country, and, where appropriate, through international cooperation, to equitably meet economic, social and environmental demands and, inter alia, to address the impact of global change* ».

The ministers also declared *that they were resolved to develop, implement and further strengthen transnational, national or/and local plans and programmes to anticipate and address the possible impacts of global changes,... that they will strive to improve water related monitoring systems and ensure that useful information is made freely available to all concerned populations, including neighbouring countries* ».

Finally, they also declared « *that they will take, as appropriate, tangible and concrete steps to improve and promote cooperation on sustainable use and protection of transboundary water resources through coordinated actions of riparian States, in conformity with existing agreements and/or other relevant arrangements, taking into account the interests of all riparian countries concerned. They will work to strengthen existing institutions and develop new ones, as appropriate and if needed, and implement instruments for improved management of transboundary waters* ».

Of course, some people will point out that these formulations can be subject to interpretation and obviously all the problems will not be miraculously solved, as some positions still remain too different, but unmistakably basin management and transboundary cooperation have scored during the World Water Forum of Istanbul!

As from 2009, even if visible progresses happen mainly in Eastern Europe and in Africa with the creation or the strengthening of Transboundary River Basin Authorities, the multilateral situation has not moved so rapidly.

Even if many thematic sessions of the 6th World Water Forum tackled basin management and transboundary issues, mainly within “cooperation and peace” and “good governance” Priorities for action and Conditions for success and Europe Region processes, and if a ministerial round table was also organized on this issue, the final ministerial declaration was very weak and has no reference to the word “basin”, either national or transboundary.

The same occurred in the RIO+20 final declaration, where the UN Member States avoided the word “basin”....under the pressure of some countries which are reluctant to any multilateral commitment on this point.

Hopefully, on the other hand, **on 22 July 2013, the EU Foreign Affairs Council agreed on the following concerning EU water diplomacy:**

“The Council recognises that a distinct challenge for water diplomacy is linked to the fact that aquifer systems, lakes, rivers and river basins do not necessarily follow state borders. A concrete objective of EU water diplomacy is to proactively engage in transboundary water security challenges with the aim of promoting collaborative and sustainable water management arrangements and to encourage and support regional and international cooperation in the context of agreed policies and programmes.”

The Council emphasizes that an EU policy promoting water cooperation across the world can be built on the long tradition of cooperation and vast experience and knowledge of the management of transboundary waters in Europe.

In line with the results of the EU Water Security Mapping initiative, the Council expresses concern about the water security situation in many parts of the world. The Council also draws particular attention to the situation around the Nile Basin and in Central Asia, and it invites the High Representative and the Commission, in cooperation with Member States, to continue working closely with the countries concerned in these areas to further facilitate sustainable and collaborative solutions taking into account existing initiatives. EU water diplomacy should also follow closely the developments in other parts of the world, concerning cross-border water security, such as in the Middle East, the Mekong River or the Sahel region. The EU should also stay engaged on transboundary challenges and actively promote water cooperation initiatives with countries in the EU Neighbourhood and in other regions already identified in the EU water security mapping..."

There have been very practical progresses in the field that have been achieved in the last decade.

Basin management is essential everywhere in the world.

It is thus now widely recognized that water resources management should be organized:

- 1) on the scale of local, national or transboundary basins of rivers, lakes and aquifers;
- 2) on the basis of integrated information systems, allowing knowledge on resources and their uses, polluting pressures, ecosystems and their functioning, the follow-up of their evolutions and risk assessment. These information systems will have to be used as an objective basis for dialogue, negotiation, decision-making and evaluation of undertaken actions, as well as coordination of financing from the various donors;
- 3) with the approval of management plans or master plans that define the medium and long-term objectives to be achieved; "The common shared vision".
- 4) achieved through the development of Programmes of Measures and successive multiyear priority investments;
- 5) with the mobilization of specific financial resources, based as possible, on the "polluter-pays" principle and "user-pays" systems;
- 6) with the participation in decision-making of the concerned Governmental Administrations and local Authorities, the representatives of different categories of users and associations for environmental protection or of public interest. It should be noted that at present the decision-making processes in water management suffer, in most countries of the world, from a strong deficit in democracy.

Legal and institutional frameworks should allow the application of these six principles.

Moreover the basin management is the best approach for developing the water management in strong relation with the territory / land particularly for taking into account the impact of land management on water and the impact of water management on land use.

It seems especially necessary to support the creation of International Commissions or similar organizations, such as Basin Authorities, and to reinforce those already existing.

Such international commissions or authorities allow better dialogue, the exchange of useful information, the solving of potential conflicts and the sharing of the benefits of better joint management and the reinforcement of transboundary cooperation.

Depending on the needs, local situations and history, various formulas were adopted to organize water management at the level of basins and there is a great diversity in the mandates and selected options.

One can quote:

- **“Administrative” Commissions, with or without a permanent secretariat**, in which mainly participate representatives of the “ministries” concerned, in each riparian country involved, to coordinate their various projects on the same river or aquifer, to exchange information or data, formalized or not, in particular on emergency situations, to define common rules (navigation, etc.), and whenever necessary, to allocate the available resources between the Countries, the categories of uses, especially in periods of crisis or when regulation structures do exist for the joint management of a dam or a chain of dams, etc..
- **“International Commissions”, or basin Authorities, with a permanent secretariat or full permanent staff**, which can be advisers to Ministerial Councils or to other decision-makers, especially as regards collecting data, assessing new projects, general planning, the fixing of taxes, the allocation of available resources, etc.

Now they more and more associate to their works **“Basin Committees or Councils”, or “specific or thematic working groups”** which gather, at the side of the administrations, representatives of the local authorities, economic sectors, water users, the civil society, etc., to prepare or discuss the decisions to be made,

- **Arbitration bodies** to which the interested “parties” refer for decision-making on the conflicts which arise; this is the case of the **International Joint Commission** (IJC) between the USA and Canada, for example.
- **Organizations in charge of contracting large structures or combined installations**; this is the case for navigation, flood control, water transfers, the building of reservoirs, in particular for irrigation, hydropower production, etc.
These organizations, sometime created as public or private “companies”, have usually the concession of community infrastructures for which they are responsible as regards their construction and long-term management, generally by providing services, electricity, raw water, inland navigation and they may levy specific taxes, on waterways transport in particular, such as the “OMVS” (Organization for the Development of the Senegal River).
- **“Projects”**, which are usually temporary and initiated by such and such bi or multilateral donor for specifically implementing an action plan with specific financing.

It is especially recommended to support the **creation of tools necessary for coordination between** their bordering countries:

- Water monitoring, information and observation systems,
- Prevention and control of floods and droughts, through better information exchange, flood mapping and harmonization of action plans between the upstream and downstream parts of the basins,
- Systems for warning against floods, droughts and pollution and prevention and action mechanisms for facing the natural disasters caused by water and for protecting human lives and properties,
- Practices of long-term planning and programming of priority investments,
- Adapted financing mechanisms,
- Adequate **measures to prevent the introduction and dissemination of invasive aquatic species**, which cause considerable ecological and economic damage and of which new specimens are continuously found,
- Methods and means for consultation and mobilization of the populations concerned,

Commentaire [AA6] : this is very much in line with my concerns expressed above, in the so-called menu of option you should list these tools as well, that way you don't overemphasize the role of legal frameworks and commissions or specific organisations as well.

Commentaire [AA7] : of which kind?

The signing of transboundary agreements for aquifer management should be looked for, in particular, taking into account their fragile nature, especially fossil groundwater, and the time needed for restoring degraded situations, from a quantitative and qualitative viewpoint.

It is also recommended to promote **practical experience sharing** and the comparison of approaches and methods between the managers and technicians concerned, in particular by supporting the action of specialized cooperation networks in this field.

This is why the International Network of Basin Organizations (INBO), whose secretariat is taken care of by the International Office for Water in Paris, has undertaken, for 20 years, to strengthen and develop effective basin organizations over the world, for transboundary rivers, lakes and aquifers in particular.

The European Union is a pioneer.

Europe is the continent where there is the greatest number of transboundary basins shared between at least two countries or more.

The 2000 European Water Framework Directive strengthens transboundary basin management: It introduces the concept of « **International Basin Districts** » for which the riparian Member States will have to comply with the same obligations as for the strictly national basins

The existing international commissions will be reinforced, new ones will be created. In Europe, most of these International Commissions have a similar organization which is based:

- on the plenary assembly of the international commission itself, made up of official representatives of the States, which makes the decisions committing the Member States,
- on its permanent secretariat,
- on many official geographical, sectoral or technical Working Groups which are the places of associations between economic partners, local authorities and the civil society of the basin and where the decisions are prepared, the plans and programmes developed or the common tools designed for observation, monitoring or warning in particular.

In each of these International River Basin Districts, the Framework Directive imposes a common characterization, the drafting of a master plan of the basin data, of an overall Management Plan and a Programme of Measures to achieve the objectives of good ecological status for water and the ecosystems of the basin, before 2015, 2021 and 2027.

These "Management Plans", defining the objectives to be achieved, and these "Programmes of Measures", defining the necessary actions, started being implemented in the first 2010 – 2015 period and the next ones are being drafted for the second 2016 – 2021 period under preparation.

The results obtained will be subject to an evaluation which will be made public and the European Commission will be able to prosecute the failing Member States in the European Court of Justice for non-respect of the Directive obligations and possibly to have them condemned to heavy financial penalties.

The European experiment shows that suitable and constraining integrated management of the resources of basins of rivers, lakes or aquifers, shared by several bordering countries, is today necessary and can be considered with real ambitions. The first results obtained are positive and encouraging.

Implementing Integrated transboundary Water Resources Management requires political will and long-term commitments.

Water is a possible cause of tensions but also, and that is more important, a powerful source of cooperation and mutual benefits. The management of these resources, essential but shared, is crucial in poverty alleviation strategies, economic and social development and environmental conservation worldwide.

Transboundary cooperation is essential to effectively face the effects of climate change on the freshwater cycle.

The creation of transboundary basin organizations is a success in many cases, but many institutions of transboundary basins have not yet sufficient power, capacities or resources.

Worse still, there is no inter-state institution to manage water in most transboundary river basins and joint management of shared aquifers has hardly started to be considered!

There is thus still an enormous need for reinforcing governance in this field.

In particular, it would be appropriate that

- the bi or multilateral donors condition their assistance to large projects for hydropower, navigation, irrigation or any other project implying the abstraction or diversion of significant water flows in transboundary rivers, lakes or aquifers, to prior agreements on a vision of a common future between all the riparian Countries of the same basin
- such agreements be formalized in a Basin Management Plan,
- the bi or multilateral donors assess the long term effects of these projects and proven their feasibility by different development scenarios

The creation of coordinated observation systems allowing the exchange of information between riparian countries, not only on the flows, but also on pollution, abstractions, quality of the ecosystems and more generally on the economy of the water sector in the basin concerned, should also be a prerequisite to the implementation of any large project: information transparency is the key to trust!

Finally, the existence of **mechanisms for involving the concerned populations** in decision-making is a real need. Remarkable progress has already been made since the 1990s thanks to the reforms undertaken in many areas and countries over the World.

Commentaire [AA8] : could be more specific here

The gained experience allows saying that integrated water resources management organized in the basins of rivers and aquifers has real advantages.

This experience allows guiding the Countries which wish to implement effective water resources management and to strengthen their international cooperation.

From now on, it is possible to progress towards better basin management over the world:

Yes, we can, if we have the will to do it!
