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Please find attached the contribution by Ms. Francesca Bernardini, UNECE with regard to Plenary Session 1 - Fostering water co-operation: international and regional experiences, Second Preparatory Conference to the 15th OSCE Economic and Environmental Forum, Zaragoza, Spain, 12 - 13 March 2007.

THE UNECE WATER CONVENTION: A UNIQUE FRAMEWORK TO FOSTER TRANSBOUNDARY WATER COOPERATION AND SECURITY

Francesca Bernardini, United Nations Economic Commission for Europe

1. Shared waters and security aspects

Approximately 40 per cent of the world's population lives in river basins that cross the political boundaries of two or more countries and, perhaps even more significantly, over 90 percent of the world's population lives within the countries that share these basins. The existing 269 transboundary river basins cover nearly one-half of the earth's land surface and account for an estimated 60 per cent of global freshwater flow. These basins link populations of different countries, are a considerable source of income for millions of people in the world and create hydrological, social and economic interdependencies between countries.

Depleted and degraded freshwater supplies, caused by rapid population growth, poorly managed development and bad governance already cause tensions among major water-users - farmers, industry and urban consumers - within many countries. Individual countries, within their area of political control, have therefore good reasons to implement integrated water resources management so as to protect and sustainably use water and related ecosystems, and reconcile priorities and concerns of different users.

Water that crosses national borders takes on an even more complex and strategic importance. The mismatch between political boundaries and natural river basins and aquifer systems becomes a focal point for the difficulties of joint planning, allocation of costs and benefits, advantages of scale and other aspects of integrated management on the basis of the river basin. Furthermore differences between riparian countries – whether in economic development, infrastructural capacity, political orientation, and institutional and legal setup – add further complications.

A growing number of States are experiencing permanent water stress. Competition over this precious resource could increasingly become a source of tension - and even conflict. An assessment of past water-related conflicts shows that water scarcity, construction of dams, diversion of water, water pollution by industry, both chronic and accidental, and neglect or non-acceptance of existing treaty provisions are at the root of water tensions.

But history has often shown that the vital nature of freshwater can also be a powerful incentive for cooperation; it can compel stakeholders to reconcile their diverging views, rather than allow opposing interests to escalate into harmful confrontations which could jeopardize water supplies. Water increasingly appears to be a catalyst for cooperation and, thus, not only divides, but also unites peoples and societies. And this is because, when coupled with reasonable and equitable utilization of the resource, cooperation allows for more effective approaches to allocating and sharing water, thus generating benefits that far exceed those that attempt to maximize individual and national self-interests.

There are nevertheless still many uncertainties for the future. Because as many as 7 billion people, more than currently alive in the world today, may live under conditions of water scarcity and stress in 2050, the future may not resemble the past when it comes to violent conflict linked to water.

Therefore policymakers must act fast to avoid missing opportunities to prevent conflicts. Instead of merely reacting to the symptoms of environment- conflict linkages, they should proactively extinguish hotspots by bolstering confidence and building cooperation.

2. Our region specificities

In our region, an estimated 120 million people do not have access to safe drinking water and adequate sanitation. As a result, they are more vulnerable to serious water-related diseases, such as cholera, bacillary dysentery, coli infections, viral hepatitis A and typhoid. WHO estimates that unsafe water, sanitation and hygiene results in 18 000 premature deaths each year in Europe, mostly in EECCA and SEE, and mostly children. Cleaner water and better sanitation could prevent over 30 million cases of water-related disease each year in the region.

At present approximately a third of the UNECE population lives in countries suffering from water stress.

At the same time some UNECE countries are suffering from more floods than ever before. During the last five years Europe suffered over 100 major damaging floods with severe economic and social impact (e.g. catastrophic floods along the Danube and Elbe rivers in summer 2002, in northern Caucasus in July and August 2002, in the Alps in summer 2005 and along the Danube in the spring 2006). Since 2000 floods in Europe have caused at least 700 deaths, the displacement of about half a million people and at least EUR 25 billion in insured economic losses

Many countries depend on groundwater to meet the demand for drinking water, and are quickly depleting precious aquifers, especially around cities. Today, the water supply of some 140 million European city dwellers comes from overexploited groundwater resources. The needs of irrigation agriculture, too, make excessive demands on the freshwater available. These processes are inflicting irreversible damage on our environment, lowering groundwater tables and threatening natural wetlands as well as causing salt-water intrusion into coastal aquifers. In Spain, for instance, more than half of the abstracted groundwater volume is obtained from areas facing overexploitation problems.

Despite this critical situation, water is still being wasted through inappropriate irrigation practices and huge water losses in the distribution systems. Most countries lose an astounding 30% of clean drinking water in their supply networks, a figure that in some cases can soar to 60% or more.

Attempts at solving these complex problems in Europe are further complicated by the essentially transboundary nature of water resources. The region has several hundred transboundary water bodies, including 200 transboundary rivers, 40 lakes and around 120 transboundary aquifers. Twenty European countries depend for more than 10% of their water resources on neighbouring countries and five countries draw 75% of their resources from upstream countries. Hungary and Romania, for example, receive between 50 and 75 percent of their total water resources from neighbouring countries.

3. UNECE response: from non-binding to binding instruments

In the late 1970s and the 1980s, the response of UNECE and its member Governments to prevent the degradation and overuse of water resources focused on non-binding international instruments: declarations, strategies, and policy recommendations. Examples include the 1982 Decision on international cooperation on shared water resources, the 1987 Decision on principles regarding cooperation in the field of transboundary waters and the 1989 Charter on groundwater management.

Altogether, these soft-law instruments are excellent compilations of experience, best practice and recommendations on integrated water management both in national and transboundary contexts. Nevertheless, these soft-law instruments gave rise to piecemeal solutions for many transboundary catchment areas. Cooperation was still based on differing underlying principles as there was a

tendency to choose a sub-set of recommendations, out of the comprehensive package, which riparian countries regarded as most appropriate for their specific agreements. It was not the specifics of a catchment area which required - and still requires - tailor-made approaches to water management problems, but rather the tendency to agree on solutions of a political, economic and administrative nature which were compatible with existing national law or did not require major adjustments.

In the 1990s, the process of changes in Europe posed new and compelling challenges to regional cooperation, in general, and cooperation on environment and security, in particular. With the emergence of new countries, new frontiers cut through Europe. One example is the Danube river basin, the largest European transboundary river basin, which is now shared by 19 countries. Other examples include the rivers Daugava, Dnepr, Kura, Syr Darja and Amu Darja as well as Lake Peipsi, which became transboundary waters after the break up of the Soviet Union.

The Concluding Documents of the Madrid and Vienna Meetings of Representatives of the Participating States of the Conference on Security and Cooperation in Europe (CSCE) (now OSCE), and most prominently, the Meeting on the Protection of the Environment (Sofia, 1989) were at the root of a new development: the drawing up of legally binding conventions under the auspices of UNECE. At the beginning of the 1990's, three environmental conventions were negotiated at the same time and this process has continued in the last years. Today the region is the only region where a unique regional environmental legal framework has been put in place to address the most important issues of transboundary cooperation: five regional environmental conventions¹ and twelve related protocols focus on the protection and use of transboundary watercourses and international lakes; water-related diseases, civil liability for damage caused to transboundary waters by industrial accidents; prevention of, and response to industrial accidents; air pollution control; environmental impact assessment of proposed activities; and access to information and public participation in decision making.

4. The UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes

The UNECE Water Convention was adopted in Helsinki in 1992 shortly before the Rio Conference and entered into force in 1996. To date it has been ratified by 34 UNECE countries and the European Community.

The Convention provides a legal framework for regional cooperation on shared water resources (rivers, lakes and groundwaters). Several bilateral or multilateral agreements between European countries are based on its principles and provisions. A first example was the Danube River Protection Convention in 1994, which develops the Convention's provisions in a more specific subregional context. Other examples are the agreements on the rivers Bug, Meuse, and Scheldt, on Lake Peipsi, as well as on Kazakh-Russian and Russian-Ukrainian transboundary waters. The most recent examples include the 1999 Rhine Convention and the European Union's Water Framework Directive.

¹ These are the *Convention on the Protection and Use of Transboundary Watercourses and International Lakes*, the *Convention on the Transboundary Effects of Industrial Accidents*, the *Convention on Long-range Transboundary Air Pollution*, the *Convention on Environmental Impact Assessment in a Transboundary Context* and the *Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters* (Aarhus Convention).

Integrated water resources management

The Convention's primary purpose is to strengthen local, national and regional measures to protect and ensure the ecologically sustainable use of transboundary surface waters and groundwaters.

The management of transboundary waters, however, cannot be divorced from the management of national water resources. Consequently, the Convention requires its Parties to apply its principles when developing and implementing local and national policies, action plans, programmes and practices as well as transboundary ones.

It is widely recognized that the traditional fragmented sectoral approach to water management is inappropriate. So the Convention promotes a holistic approach taking into account the complex interrelationship between the hydrological cycle, land, flora and fauna, based on the understanding that water resources are an integral part of the ecosystem, a natural resource and a social and economic good.

Integrated water resources management is a necessary departure from the earlier focus on localized pollution and the isolated management of separate components of the ecosystem, and from planning provisions, which often ignore the profound influences of land use on water quality. This new approach forms a framework for decision-making that compels managers and planners to cooperate in devising integrated strategies for action.

To this end, the Convention envisages two major categories of obligations. The first, more general, obligations apply to all Parties. The second are more specific and must be implemented by Parties sharing transboundary waters.

General obligations of the Convention

Parties are obliged to prevent, control and reduce transboundary impacts, i.e. adverse effects on the environment. These can be effects on human health and safety, flora, fauna, soil, air, water, climate, landscape and historical monuments and other physical structures, and the interaction among these factors. They also include harm to the cultural heritage or socio-economic conditions resulting from alterations to those factors.

The Parties must ensure that transboundary waters are managed in a way that is ecologically sound and rational, that they are preserved and protected, and that their use is reasonable and equitable. They must also preserve and, where necessary, restore ecosystems. The Convention also stresses that measures to prevent, control and reduce water pollution should preferably be taken at source.

The precautionary principle and the polluter-pays principle should guide the application of such measures, and all water management should meet the needs of the present generation without compromising the ability of future generations to meet their own needs.

To prevent, control and reduce transboundary impacts, the Parties must license and monitor wastewater discharges. Emission limits for discharges from point sources should be based on the best available technology, and biological treatment at least must be applied to municipal waste water. The Parties must also develop and apply best environmental practices to reduce inputs of nutrients and hazardous substances from agriculture and other diffuse sources.

The Parties are also required to effect environmental impact assessment and sustainable water resources management, taking into account the ecosystem approach. The Convention expects its

Parties to draw up contingency plans, set water-quality objectives and minimize the risk of accidental water pollution.

Obligations on Parties sharing transboundary waters

Water management needs to be tailored to the specific conditions of the many transboundary catchment areas in the region. Therefore, the Convention gives a framework for action specific to these individual transboundary basins and requests its Parties to enter into river basin agreements appropriate to its provisions.

The Convention also lays the responsibility for setting up joint bodies on the Parties that are riparian to the same transboundary waters. Such bodies can be bilateral or multilateral river or lake commissions. This is the case, for example, for the rivers Elbe, Danube, Meuse, Moselle, Oder, Saar and Scheldt and for the lakes Geneva, Ohrid, Peipsi and the Great Lakes in North America. There can also be other institutional arrangements for cooperation, such as meetings of plenipotentiaries, as is the case with some transboundary water agreements in Eastern Europe.

It is up to these joint bodies to:

- Identify, draw up inventory and exchange information on the pollution sources;
- Elaborate joint monitoring programmes;
- Set emission limits for waste water;
- Elaborate joint water quality objectives;
- Develop concerted action plans for the reduction of pollution loads;
- Establish warning and alarm procedures;
- Represent a forum for the exchange of information;
- Cooperate with other joint bodies in the same basin, and with coastal States that could be affected.

Joint bodies also help to develop integrated water resources management and water efficiency plans in a transboundary context as stipulated in the Johannesburg Plan of Implementation adopted at the World Summit on Sustainable Development in September 2003.

A particular challenge for joint bodies is to provide a forum for sharing information on best available technology and on existing and planned uses of water and related installations. Joint bodies are responsible, in particular, for establishing warning and alarm systems and for mutual assistance. They also participate in environmental impact assessments following, for example, the provisions of the UNECE Convention on Environmental Impact Assessment in a Transboundary Context.

5. Lessons learned from the Convention's implementation

The lessons learned below are built on 15 year-experience of cooperation under the UNECE Water Convention that pointed out a number of peculiarities of transboundary water management as well as possible approaches to improve transboundary cooperation. These patterns, typical of transboundary cooperation, can be very relevant to improve integrated water management also at the national and local level. Achieving transboundary cooperation is always a long and complex journey, for which there is no single path and few short cuts. Instead, there are many routes that can be followed and each cooperation arrangement has to be tailored to the basin's characteristics and reflect a wide range of environmental, hydrological, political, economic, and cultural circumstances.

Law for good water governance

The role of law is fundamental for good water governance and a sound legal framework is essential for stable and reliable cooperation. Transboundary waters agreements need to be concrete, setting out enforcement measures, incorporating dispute resolution mechanisms, identifying clear yet flexible water allocations and water-quality standards, providing for mutual assistance in case of extreme events, taking into account hydrological events, changing basin dynamics and societal values. Finally, they should also consider arrangements for encouraging water-related economic activities, for cost-sharing arrangements and for other aspects of broader economic activity.

The Convention provides a comprehensive and continuously self-maturing framework for transboundary water management. In the relatively short period since it came into force, great strides have been taken towards the Convention's principal objectives. Several basin-specific agreements have been concluded under the Convention's auspices. The Convention's influence has been particularly useful since the break-up of the former Soviet Union in helping countries in Eastern Europe, the Caucasus and Central Asia to draw up agreements regulating the waters which the creation of new international boundaries have made transboundary.

Another major contribution to the creation of a water management regime has been the adoption of non-binding instruments, such as guidelines and recommendations. These make it easier to apply the Convention by giving its Parties clear and precise parameters for action. They respond to the varying needs of Parties for guidance on several issues, such as the ecosystem approach in water management, the prevention and control of water pollution from fertilizers and pesticides in agriculture, the prevention of water pollution from hazardous substances, the monitoring and assessment of transboundary rivers, groundwaters and lakes, sustainable flood prevention and public participation.

The progress achieved by Ukraine and Moldova under the joint UNECE-OSCE project on the Dniester River Basin in defining a framework for transboundary cooperation and joint integrated water resources management is certainly exemplary for the region and teaches many lessons and good practices on how such a framework should be developed.

Institutional arrangements

Suitable institutional arrangements at the national and transboundary levels are a precondition for sustainable management of transboundary waters. The setting up of joint bodies among riparian States, such as river or lake commissions, with strong enforcement capacity is fundamental to ensure cooperation among various governmental entities and management of shared resources. Apart from riparian States, a variety of actors – local institutions, NGOs, research institutions, private sector participants, and donors – are involved in the cooperation on transboundary waters. Vertical and horizontal integration in water resources management is a necessity. The joint bodies are the framework where such integration takes place.

For the Convention, one of the main challenges is the undefined, shared responsibilities within national authorities and the lack of coordination between them. In EECCA, the ongoing reform of ministerial environmental departments and water agencies is an opportunity to harmonize responsibilities for water management and improve cooperation among involved entities and to designate appropriate institutions. On the other hand, a never-ending reform of institutions and their responsibilities and assignments could seriously hamper the continuity and sustainability of cooperation and the implementation of the Water Convention.

Capacity of staff of joint bodies is also crucial. Staff should have a broad competence and skills that reach across disciplines. The capacity of managers of transboundary waters, especially at the local level, should be strengthened to raise understanding of the complexity of managing shared water resources and to strengthen their negotiation, hydro-diplomacy and conflict resolution skills.

The establishment in July 2006 of the Chu Talas Commission between Kyrgyzstan and Kazakhstan, with the support of UNECE, OSCE and UNESCAP, is a remarkable example of mutually beneficial way of sharing responsibilities and promotion of constructive cooperation.

Exchange of information and joint monitoring and assessment

Information based on well-organized monitoring programmes is the key prerequisite for accurate assessments of the status of water resources and the magnitude of water problems. These assessments are essential for preparing proper policy actions at the local, national and transboundary levels. Moreover, management of transboundary basins shared by two or more countries calls for comparable information. There is a need for a common basis for decision-making, which requires harmonized and comparable assessment methods and data management systems as well as uniform reporting procedures.

Exchange of information, including information on pollution caused by accidents and on infrastructure projects that could affect downstream countries, is key to building trust and shared vision among riparian countries.

In many EECCA and SEE countries there was a significant decline in water quality monitoring in the 1990s. Since then improvements have been observed but in several countries water monitoring is still inadequate to obtain a clear picture of the status and trend in water resources.

Integration: a major challenge requiring to act in partnership

One of the main challenges for making the management of water resources sustainable is improving the integration of environmental aspects in sectoral policies. It is a difficult task as it involves many actors with different “weights”, different agendas and priorities, e.g. Ministries of environmental protection, physical planning, agriculture, forestry, health, public works, economy, tourism and finance.

The result of integrated water management should be the maximization of the resultant economic, social and environmental benefits. It takes time and deep understanding of the problems of the different stakeholders to reach an agreement on:

- A shared vision: a general political recognition of the problem and an agreed scientific description of it.
- Clearly defined long-term and medium-term goals which are both challenging and attractive.

This requires a new culture of water management calling for opening up of cooperative processes to all main stakeholders as partners: governments, local authorities, business and industry, banking institutions, non-governmental organisations and the public at large.

The common will to cooperate and to resolve existing is a prerequisite for a successful participatory approach. Only negotiations can foster confidence and mutual understanding. Negotiations build reciprocity: participants realize that they are interdependent on each other and cannot effectively exercise unilateral control. Reciprocity means that each participant considers the interests of the

other participants, gives in on points that are more important for the others than for themselves and trust that the others do the same.

The shift of conflicts from the interstate to intrastate and local levels also highlights the importance of involving local stakeholders in the efforts to build cooperation and of investing in building local capacity, by strengthening local water user associations and civil society groups, for example.

Moreover, to build sustainable cooperation and to avoid conflicts at the interstate and intrastate levels, the broader social and political context must be understood.

Benefits and costs sharing

Riparian countries should focus on generating basin-wide benefits, and secondly on sharing those benefits in a manner that is agreed as fair. A focus on sharing the benefits derived from the use of water, rather than the allocation of water itself, provides far greater scope for identifying mutually beneficial cooperative actions.

A perception by all riparian countries that a cooperative basin management plan which maximizes overall benefits is “fair” is essential to motivate and sustain cooperation. Payments for benefits (or compensation for costs) might be made in the context of cooperative arrangements. Riparian countries can be compensated, for example, for land flooding as a consequence of water impoundment by another riparian. In some instances, it might be appropriate to make payments to an upstream country for management practices of the basin that bring benefits downstream (e.g. reduced flooding and sediment loads, improved water quality). This solidarity in the basin might entitle upstream countries to share some portion of the downstream benefits that their practices generate, and thus share the costs of these practices.

Step-by-step approach

The development of cooperation and joint management of shared water resources is a long process and the wish to obtain immediate results can be misleading and ruinous. At the same time action should not be postponed. A sustainable solution is to adopt a step-by-step approach. It requires agreeing on a prioritization of issues and efforts, and a progressive and rational widening of the scope of water management in accordance with the resources available.

Another crucial requirement is the assessment of the effectiveness of implemented programmes, often a weak point in water management. More efforts should be devoted to set priority objectives and identify indicators of progress.

Capability to adapt to changing conditions and redesign priorities and policies

Water problems are neither homogeneous nor constant or consistent in time. They vary very significantly from one region to another, even within a single country, from one season to another, and from one year to another. They also depend on many changing factors such as prevailing socio-political conditions, availability of investment funds, transparency, corruption, quality and relevance of research being conducted on the national, subnational and local water problems. Therefore planning shall be a continuously adapting process. Flexibility is needed to deal with newly emerging problems and to incorporate new knowledge.

Flexibility is also crucial to take advantage of all opportunities. Progress in water management, as in transboundary cooperation, is often not a continuous process; great steps forward can be

triggered by unpredictable outside events such as accidents raising public and political attention to the issues, political process such as the enlargement of the European Union, etc.

6. Future challenges

Transboundary groundwaters: an untackled issue

If cooperation regarding the management of transboundary rivers has taken place for many years, the same cannot be stated about transboundary aquifers. Joint management of such aquifers is still in its infancy. It suffers from both a general lack of scientific information and of legal and institutional frameworks.

A positive development is, for instance, the inclusion of shared groundwaters under new agreements, such as the Framework Agreement on the Sava River Basin; nevertheless real joint management is still rare in the region.

Climate change

The world is currently in the process of undisputed climate change, a fact that has recently been reaffirmed by the findings of the fourth report from the UN Intergovernmental Panel on Climate Change. While scientific insights on the process are becoming clearer, how it will impact upon water resources and even more on security remains still unclear.

The recent conference on the security implications of climate change organized by Royal United Services Institute for Defence and Security Studies (RUSI) on 24th January 2007 concluded that a fundamental security objective for the next century should be to reinforce the four mutually connected “pillars” of security, climate security, water security, food security and energy security. Due to globalisation and the interdependence between states the response should be multilateral as state-centric views could ultimately be self-defeating in policy making in this area.

The recent decision of the Parties to the UNECE Water Convention to develop a regional Guidance on Water and Climate Adaptation is therefore a positive development. The Guidance, which should be presented for adoption at the fifth meeting of the Parties in 2009, will support cooperation and decision making in transboundary basins on issues resulting from climate change, such as the possible impacts on flood and drought occurrences, health related aspects, as well as practical ways to cope with the transboundary impacts through adaptation, integrated management of surface and groundwater. Land use, regional and spatial planning, and their role in reducing flood and drought risks and damage potential, in particular in the transboundary context, will also be considered.

6. The way ahead and the role of UNECE, OSCE and other international institutions

Focus on implementation

After the establishment of the legal and institutional framework for transboundary cooperation, the main focus for the future will be on the implementation of the Water Convention and deriving bilateral and multilateral agreements.

Full implementation faces many obstacles, especially in EECCA and SEE. Lack of experience, resources, institutional capacity and national coordination to implement effective management procedures is a barrier.

Failure to ratify and/or enforce the Convention and other relevant international standards and policy guidelines are other important obstacles.

Inadequate domestic funding is a major barrier and requires efforts to prioritize issues and actions in strategies and programmes, to set clear (and when possible, quantified) targets and deadlines for implementation, and to attract international donors.

Integration of environmental policies into other policy areas and their financing, such as health, transport, trade, is also a challenge that entails enhanced interagency structures and arrangements for coordination and cooperation and an increased consideration of environmental issues as priorities in government agenda.

Political will

But above all building political will and commitment are fundamental preconditions for successful cooperation in all aspects of transboundary water management. Putting water resource management into the broader context of foreign and security policy will increase policy relevance and help to mobilize financial resources. It also opens new windows of opportunity for environmental and development policy by indicating broader negotiation arenas and issue linkages as well as new stakeholder configurations.

OSCE in particular, as well as UNECE and other international organizations, have a critical role to play in promoting strategies and initiatives at the international level.

Activities should include assistance in the negotiation and implementation of international environmental treaties, such as the Water Convention, and the promotion of regional environmental cooperation.

UNECE/OSCE cooperation on transboundary waters has proven successful and mutually beneficial. In the future the two organizations should continue to build on their specificities, comparative advantages and synergies.

Information on the Convention and related activities can be found at
<http://www.unece.org/env/water/>