



**Review of the implementation of the OSCE commitments in the field of
"Water governance in the OSCE area – increasing security and stability
through co-operation"**

23RD OSCE ECONOMIC AND ENVIRONMENTAL FORUM

**Water governance in the OSCE area – increasing security and stability
through co-operation**

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LIST OF ABBREVIATIONS

Aarhus Convention - Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters

BMO – Basin management organization

CAP – EU Common Agricultural Policy

CARDS – Community Assistance for Reconstruction, Development and Stabilisation

CAREC – Regional Environmental Centre for Central Asia

CC - Coordinating Committee Rhine

CLEW – Climate-Land-Energy-Water Use

CSCE – Conference on Security and Co-operation in Europe

DRPC – Danube River Protection Convention

DRR – Disaster risk reduction

ECE – see UNECE

ECENA – Environmental Compliance and Enforcement Network for Accession

EECCA – Eastern Europe, Caucasus and Central Asia

EEF – OSCE Economic and Environmental Forum

EIA – Environmental impact assessment

ENVSEC – Environment and Security Initiative

EPR – Environmental Performance Review

Espoo Convention - Convention on Environmental Impact Assessment in a Transboundary Context

EU – European Union

EUWI – European Union Water Initiative

FAO – Food and Agriculture Organization of the United Nations

FASRB – Framework Agreement on the Sava River Basin

GEF – Global Environment Facility

GHG – Greenhouse gas

GWP-Med – Global Water Partnership – Mediterranean

ICPDR – International Commission for the Protection of the Danube River

ICPR – International Commission for the Protection of the Rhine

ICWC – Interstate Commission for Water Coordination (Aral Sea Basin)

IFAS – International Fund for Saving the Aral Sea

IMPEL – EU Network for the Implementation and Enforcement of Environmental Law

INECE – International Network for Environmental Compliance and Enforcement

IPA – Instrument for Pre-Accession Assistance

IPPC – Integrated pollution prevention and control

IRBM – Integrated river basin management

ISBC – Interim Sava Basin Commission

ISRBC – International Sava River Basin Commission

IWRM – Integrated water resources management

LIFE – EU Financial Instrument for the Environment

MDG – Millennium Development Goal

MEA – Multilateral environmental agreement

MESP – Ministry of Environment and Spatial Planning (Slovenia)

MOP – Meeting of the Parties

MoU – Memorandum of Understanding

NGO – Non-governmental organization

NPD – National Policy Dialogue

NVZ – Nitrate Vulnerable Zone

OCEEA – Office of the Co-ordinator of OSCE Economic and Environmental Activities

OECD – Organisation for Economic Co-operation and Development

OSCE – Organization for Security and Co-operation in Europe

PA – Protected area

PES – Payment for Ecosystem Services

PHARE – Poland and Hungary: Assistance for Restructuring their Economies

RDA – Regional Development Agency

SDG – Sustainable Development Goal

SEA – Strategic environmental assessment

SRB – Sava River Basin

UBA – Umweltbundesamt (Federal Environmental Agency, Germany)

UNDP – United Nations Development Programme

UNECE – United Nations Economic Commission for Europe

UNEP – United Nations Environment Programme

UNESCO – United Nations Educational, Scientific and Cultural Organization

UNISDR – United Nations Office for Disaster Risk Reduction

UNOSD – United Nations Office of Sustainable Development

UNU – United Nations University

UWWT – Urban waste water treatment

Water Convention – Convention on the Protection and Use of Transboundary Watercourses and International Lakes

UN Watercourses Convention – Convention on the Law of the Non-Navigational Uses of International Watercourses

WFD – EU Water Framework Directive

WSS – Water supply and sanitation

WTO – World Trade Organization

WWDR – United Nations World Water Development Report

WWTP – Waste water treatment plant

EXECUTIVE SUMMARY

Water is a strategic resource and an essential element of national and regional security. Water scarcity, lack of access to water, and pollution can threaten socio-economic development and political stability and are potential triggers for tensions and conflicts. In crisis situations, water resources must be secured in order to protect populations. Climate change has added a new challenge; it stresses natural and man-made systems, affecting water quality and challenging distribution and accessibility regimes, and may lead to water scarcity. Where distribution and access systems fail, populations can be forced into migration, which can affect national, regional and international stability and security.

One of the main challenges facing the international community today is to increase effective governance of water resources. Water crises are recognized by academics, politicians and business leaders as one of the highest global risks, which can only be addressed through better governance in the management, distribution and accessibility of water resources. But water can also be a source of co-operation: good water governance and joint management of water resources can lead to improved relations among countries and communities, and enhance security, prosperity and the protection of the environment.

Good water governance requires legitimate, transparent, accountable, inclusive and adaptable institutions with adequate capacities and resources to develop and manage water resources and the delivery of water services, at local, national and transboundary levels. Effectiveness, efficiency, trust and engagement are also important criteria for good water governance. According to the concept of Integrated Water Resources Management, water resources should be managed at the basin level. Due to the fact that the vast majority of rivers in the OSCE area cross borders, water governance requires cooperation between riparian countries. Water security in the OSCE area is also connected to that of the adjacent regions, with which some participating States share water resources.

On the global and regional level, water governance is the subject of several multilateral environmental agreements, such as the UN Convention on the Law of Non-Navigational Uses of International Watercourses, which entered into force in 2014, the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, in force since 1996 (Water Convention), and its Protocol on Water and Health.

Water is crucial for, and closely linked to, several issues being addressed at global level, such as climate change, disaster risk reduction and sustainable development; which in turn also influence water policies and governance arrangements. The inclusion of a comprehensive Sustainable Development Goal on water in the 2030 Agenda for Sustainable Development, aimed to ensure availability and sustainable water management for all, including through transboundary co-

operation, as appropriate, is a major step forward and demonstrates the importance of good water governance for all aspects of life. The new approach of the water-energy-food-ecosystems nexus aims to address the complex interactions between water and related sectors, such as agriculture and energy, in order to identify possible synergies.

Within the OSCE area, there is a rich history related to water governance, which led to the development of diverse methodologies, standards, policy instruments and institutions for cooperation among states and across networks. The OSCE area is very advanced in transboundary water cooperation, with numerous bilateral and basin-level agreements, several pioneering river basin organizations, and common national legislation applying IWRM and IRBM standards. Participating States have engaged in regional or bilateral water agreements, dating from at least 1858, and established basin-level organizations for the Chu Talas, Rhine, Danube, Oder, Elbe, Meuse/Maas, Scheldt, Sava, Mosel-Saar and the Aral Sea Basin, among others. This progress was partly built upon the Water Convention, which currently counts forty OSCE participating States and the European Union among its Parties. Most OSCE participating States have also ratified other relevant environmental conventions, such as the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) or Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention).

Good water governance at the national level requires effective institutional frameworks, coherence and integration between sectoral policies, but also effective permitting mechanisms for water use and emissions, decentralization, enabling information and participation processes, adequate financing and ultimately cost recovery, while ensuring equitable access to water and sanitation for all. The review gives an overview on the respective institutional structures, legislation, policies and national strategies, decentralization, participation and permitting mechanisms established in the OSCE participating States. The water-related directives of the European Union, in particular the EU Water Framework Directive and Flood Directive set a joint framework for the EU member states as well as for accession states. Beyond that, most countries in Eastern Europe, South Caucasus and Central Asia participate in the European Union Water Initiative's (EUWI) National Policy Dialogues (NDPs) aimed at improving water governance through the development of tailored policy packages for applying IWRM principles.

The OSCE has been addressing the management of natural resources as an important aspect of security for decades, beginning with the Helsinki Final Act (1975), which called for harmonization of policies in relation to the environment, as well as joint research on specific scientific and technological problems related to the human environment, and specified, as an area of cooperation, the prevention and control of water pollution, in particular of transboundary rivers and international lakes. The 2003 Maastricht Strategy Document for the OSCE Economic and

Environmental Dimension referred to the need for co-operation for sustainable management of shared natural resources, including water.

The 1989 Sofia CSCE Meeting set forth the basic principles of the instrument that would eventually become the UNECE Water Convention, including the introduction of mechanisms such as environmental impact assessment and licensing schemes, improved monitoring and exchange of information, establishment of transboundary water commissions, application of liability rules and the polluter pays principle, harmonization of standards, and prior consultation, all of which play an important part in implementing good water governance today. The Tenth Economic Forum (2002) represented a milestone in the OSCE's work in this field with its focus on "cooperation for the sustainable use and the protection of the quality of water." The 2007 Madrid Declaration on Environment and Security and the subsequent Ministerial Decision on Water Management marked a renewed emphasis on cooperation with other organizations such as the UNECE and other partners of the Environment and Security Initiative (ENVSEC) for strengthening water management and called upon states to increase their adherence to relevant international agreements. The 2008 Economic and Environmental Forum focused on maritime and inland waterways co-operation, and in 2014, the Ministerial Decision on disaster risk reduction recognized that sustainable use and management of water, along with other natural resources, is essential for the prevention of disasters. The participating States also committed to further expand the OSCE's good practices gained particularly in the field of water management and flood risk management.

Based upon these political outcomes, the OSCE executive structures, including its Secretariat and the field operations, have supported the OSCE participating States in improving water governance both internationally and on the national and local level, often in cooperation with the UNECE. Activities, inter alia through the ENVSEC partnership, have supported the development of transboundary agreements and to the establishment of joint basin-level bodies for water cooperation. Progress has been substantial in several basins in the OSCE area, including the Dniester, Kura/Aras, and Chu-Talas basins. The transboundary Strategic Framework for Adaptation to Climate Change for the Dniester basin is among the few such strategies adopted in the world. The OSCE field operations advance good water governance, for example, through training courses on IWRM, support to water user associations and river basin councils, and promotion of civil society participation. The network of (as of today) 59 Aarhus Centres in 14 countries in the OSCE area (Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Montenegro, Serbia, Tajikistan, Turkmenistan and Ukraine) plays a key role in facilitating participation and access to information on water issues.

While substantial progress has been made in water governance in the OSCE area, the review identifies several gaps and remaining challenges in policy and technical areas. These include the failure to make full use of existing cooperative frameworks, mechanisms and resources; limited involvement of relevant stakeholders and

partners, including women and marginalized groups; weak inter-agency cooperation; incomplete adoption of IWRM and IRBM principles through policy and legislation; gaps in establishing basin boundaries and basin management organizations (BMOs_); limited experience in balancing water uses; institutional instability; poor information exchange and incomplete monitoring; inadequate attention to ecosystem needs; and limited adaptation to climate change and disasters. In some participating States, the policy gaps furthermore are exacerbated by technical limitations related to lack of infrastructure or inflexibility of existing infrastructure, inadequate resource base, technical inefficiencies, inadequate mapping and planning, and lack of financing.

The need to address these challenges has resulted in the following set of recommendations for areas in which the OSCE can play a role in improving water governance.

Good Water Governance

The OSCE should increase its support to its participating States in implementing the principles of good water governance, including but not limited to effective inter-sectoral co-ordination at local and national levels, transparent and accountable decision-making processes, stakeholder participation, data and information sharing, and sound regulatory frameworks. This support could be realized through project activities of the OSCE Secretariat as well as the OSCE field operations aiming at exchange of experiences and best practices, awareness-raising and capacity development on good water governance, and should be closely co-ordinated with other international actors active in this field.

Public participation and transparency

The OSCE should further strengthen its support for promoting broad public participation and transparency in water governance. The Aarhus Centres are well suited to be partners in such endeavours and could provide a platform for multi-sectorial and multi-stakeholder consultations on water issues at local and national levels, as well as at transboundary level through their Network. Therefore, the OSCE Secretariat and the OSCE field operations should continue to reinforce the capacities of Aarhus Centres related to good water governance at different levels. The OSCE should also increase its support for networking of Aarhus Centres within and across borders in shared river basins.

Water Diplomacy

Expand the role of the OSCE in water diplomacy. The OSCE, through its participating States and its executive structures, could engage actively in the global debate on concepts of water diplomacy by contributing to global and regional initiatives aimed at developing mechanisms for improved cooperation and better management of transboundary waters and contributing OSCE's approach to "water diplomacy". The OSCE could contribute to existing efforts by enabling a discussion platform among water, foreign and security policy communities in order to increase understanding

of water conflicts and develop strategic and practical solutions, as appropriate and needed, in cooperation with partners.

Water Co-operation

The OSCE should continue to promote the internationally acknowledged principles for transboundary water co-operation, namely not to cause significant transboundary harm, to ensure the reasonable and equitable use of water resources, and to foster the willingness to co-operate. The OSCE, together with UNECE, should strengthen its work to facilitate transboundary water cooperation in specific basins including through support for developing and implementing legal and institutional frameworks.

Confidence-building and conflict prevention

The OSCE should make increased use of environmental co-operation, including in the area of water, as a tool in diminishing tensions as part of a broader effort to prevent conflict, build mutual confidence and promote good neighbourly relations.

Support to implementation of MEAs

The OSCE should support its participating States in the ratification and implementation of relevant multilateral environmental agreements related to water governance, including the UNECE environmental conventions. The OSCE should further enhance its engagement in the implementation of the UNECE Water Convention and its work programme and products such as assessment of the benefits of water cooperation, adaptation to climate change, and the EU Water Initiative National Policy Dialogues, which also offer opportunities for co-ordination among international actors.

Implementation of water-related SDGs

The OSCE should support its participating States in the implementation of the Sustainable Development Goals in particular related to Goal 6 (Ensure availability and sustainable management of water and sanitation for all), the water-related targets and the role of water in reaching other goals. Significant effort should also be invested in ensuring that sustainable development principles are taken into account in relevant planning and decision-making in the area of water management.

Adaptation to Climate Change

The OSCE, in close co-operation with relevant international actors and building on the established partnership with UNECE, should increase its engagement in promoting transboundary cooperation in climate change adaptation, building on the

best practices such as the Strategic Framework for Adaptation to Climate Change for the Dniester basin.

Disaster Risk Reduction

The OSCE, through its participating States and executive structures, should support the implementation of the Sendai Framework for Disaster Risk Reduction, particularly in the area of water-related disasters.

Engaging Youth

The OSCE should invest more in educating young generations on how to govern water more wisely, and strengthen its collaboration with youth organizations to support their water-related activities and promote their interaction and networking within and across borders.

Gender mainstreaming

The OSCE should strive to promote a gender perspective in its activities related to water governance and water diplomacy given the gender-specific impacts of water policies and the vast potential of the inclusion of gender in this field for more equitable and effective water management.

Co-ordination and co-operation with partners

The OSCE should continue to co-ordinate its water-related activities with other international and regional organizations active in this field taking into account the added value of the OSCE's comprehensive approach to security and regional coverage as well as the available partnership arrangements including the Environment and Security Initiative (ENVSEC). The OSCE should further strengthen its engagement in the Environment and Security (ENVSEC) Initiative as a robust mechanism to support transboundary water co-operation throughout the OSCE region.

1. Introduction

This review of the implementation of the OSCE commitments in the field of water governance is prepared for the Concluding Meeting of the 23rd OSCE Economic and Environmental Forum “Water governance in the OSCE area – increasing security and stability through co-operation.” The review has several parts. Section 1 begins with a general introduction to water governance in the OSCE area at various levels and its relationship to security. Section 2 presents key concepts and definitions related to water governance, including integrated river basin management, integrated water and land resources management, and the nexus approach. It goes on to place these in the context of international policy development through several key global processes, including multilateral environmental agreement (MEA) regimes in the field of water and climate change, the development of the post-2015 development agenda, and developments in the field of disaster risk reduction.

Section 3 sets forth examples of water governance institutions, methods and practices within the OSCE area, on the national and transboundary levels. This analysis examines basin-level arrangements and where appropriate takes into account the relevance of regional principles, standards and legislation and the impact that these have on water governance. The challenges in implementing basin-level decisions in the national context are also discussed, with good practice examples set forth. In Section 4, the history and development of OSCE commitments in the field of water governance are recapped, with attention given to the evolution of the OSCE participating States’ appreciation of the relationship between water governance and security, and their frequent consideration of water, water management and water governance in their deliberations.

The implementation of these commitments is then reviewed in Section 5 in terms of actions taken through international cooperation involving other international organizations, actions taken by the OSCE Secretariat and the OSCE field operations, and means by which OSCE participating States can meet their commitments through taking action on the national level or in cooperation with neighboring states. Finally, the review presents several remaining policy gaps and challenges with respect to water governance in the OSCE area in Section 6, and gives recommendations on filling the gaps in Section 7 through actions that can be taken by the OSCE executive structures and participating States.

1.1 Water governance and security

Water is a strategic resource and an essential element of national and regional security. Water scarcity, lack of access to water, and pollution can threaten socio-economic development and political stability and are potential triggers for tensions and conflicts. In crisis situations, water resources must be secured in order to protect populations. The OECD has estimated that 40% of the world’s population currently lives in water-stressed river basins, and that water demand will rise by

55% by 2050.¹ In the OSCE area in particular, more than 150 rivers and lakes are shared by two or more of the 57 participating States (out of 276 transboundary river basins worldwide). Transboundary basins may pose a particular challenge in terms of governance and security. Water in such basins is not only a shared resource serving multiple users in different sectors within one country, but it also links users across borders in a system of hydrological interdependence, encompassing surface waters of different types and groundwaters, touches on sovereignty and has the potential to contribute to tensions and conflicts. Research in the area of the risks, that water crises can pose to development and peace, and the additional stress put on water resources by climate change, has helped to increase awareness among a broad range of stakeholders, including the business community and foreign policy makers, of the need to take water governance into account in planning and decision-making.

Water can also be a source of co-operation: jointly managing water can lead to improved relations among countries and communities, and enhance security, prosperity and the protection of the environment.² The OSCE provides an important platform for water diplomacy as an element of its comprehensive approach to security and cooperation.

Cooperation is needed on a global and regional level to address the effects of climate change and natural and man-made disasters, and to respond effectively to water crises arising from various causes, which represent major threats to sustainability, prosperity and security. The World Economic Forum in its yearly Global Risk Reports lists water crises constantly as one of the highest global risks. In the 2015 report, water crisis is identified as the top single global risk in terms of possible impacts and near the top in terms of likelihood.³

As early as 2006, the 2nd United Nations World Water Development Report (WWDR2) explicitly recognized that the current water crisis is largely a crisis of governance. Governance systems, it says, “determine who gets what water, when and how, and decide who has the right to water and related services.” Such systems are not limited to ‘government,’ but include local authorities, the private sector and civil society. They also cover a range of issues intimately connected to water, from health and food security, to economic development, land use and the preservation of the natural ecosystems on which our water resources depend. ⁴ Water governance and management including issues of accessibility has security implications. Climate change increases stresses on natural and man-made systems, which affects water quality and can challenge distribution and accessibility regimes leading to water

¹ OECD (2012), OECD Environmental Outlook to 2050 – The consequences of Inaction, OECD Publishing, Paris.

² See Wolf (2003).

³ World Economic Forum (2015). Global Risks 2015, 10th Edition.

⁴ United Nations World Water Development Report 2 (2006), <http://unesdoc.unesco.org/images/0014/001444/144409E.pdf>

scarcity. Where distribution and access systems and regimes fail, populations can be forced into migration, which can affect regional and international stability. For these reasons, good water governance is important for peace and sustainable development.

Understanding of water management has changed over time. Principles of integrated river basin management have evolved since the 1980s. Experience with the application and extension of the sustainable development paradigm has helped to shape water management principles and to develop specific measures for implementation. In recent years, there has been a major shift in the approach to water management and water governance, facilitated by huge increases in information flows, greater decentralization and improved capacities.⁵ From a technical standpoint, understanding of the interactions between various water uses has gradually increased, as well as the understanding of the potential and actual conflicts in competing water uses across sectors, across social groups, across levels of government, and between states on the international level. The “nexus approach” that takes into account the linkages among food, energy, water, ecosystems and climate change (as well as other uses such as navigation) has been one analytical framework that has served as a platform for policy- and decision-making relevant to these complex interactions and interrelationships.

Thus, one of the main challenges facing the international community today is to develop and implement effective ways of governing water resources. UN Secretary General Kofi Annan’s statement that good governance is perhaps the single most important factor in eradicating poverty and promoting development has been often repeated. Within the OSCE area, fortunately, there is a rich history and practice related to water governance, which has led to the establishment of methodologies, standards, policy instruments and institutions based upon a sound, fundamental scientific basis. Institutions for cooperation among states and across networks of institutions are also highly developed. Moreover, the OSCE area is quite diverse in terms of the countries’ water governance systems, including institutional capacities, levels of economic development and inclusiveness of policy-making.⁶ Water security in the OSCE area is also connected to that of the adjacent regions, where water often provides a direct link, through shared resources and river basins. The experience of the OSCE area can be a valuable contribution to joint security with the adjacent regions.⁷

Public and private investment may have an impact on water governance with respect to transboundary waters. Years of progress in water management can be easily undone by badly placed investments, particularly in sectors such as hazardous activities with potential adverse impacts on transboundary waters. Consequently, water governance is an important consideration in designing new

⁵ See OECD Principles on Water Governance, C(2015)71, 12 May 2015, para. 7.

⁶ See also Section 3, below.

⁷ See, e.g., pp. 36-37 of Helsinki Final Act, chapter on the Mediterranean.

investments and in the permitting and approval process. Investment decision-making remains one of the critical points where better awareness and better governance standards are needed. In the OSCE area, a major accident at a tailings facility in 2000 exposed many of the shortcomings related to the practice in designing and approving investments in potentially hazardous activities that could have a major transboundary impact on waters. The international community responded with several policy responses, including a protocol on civil liability,⁸ adjustments to the Seveso Directive in the EU, and a set of voluntary governance principles,⁹ but the problem remains, as shown by the fact that the Civil Liability Protocol¹⁰ has not progressed towards entry into force.

At the same time, as in any matter related to security, effective cooperation is dependent upon various factors and events often external to the matter at hand. Effective responses to such challenges require diligence, resourcefulness and flexibility.

2. Good water governance in perspective

2.1 Water governance

A general definition of governance is: “A system of responsibility and accountability involving formal and informal institutions that builds trust and capacity to cooperate in policymaking, decision-making and implementation of measures.”¹¹ The specific shape and form of governance changes depending on the objective and context. In a particular context, an analysis of the governance setting may have to take into account the nature of institutions, their inclusiveness and flexibility, the underlying norms and procedures in legislation and policy, the availability of resources, and capacities of various kinds.

In the sphere of public administration, the OECD has noted: “*Public governance* now refers broadly to power and authority and to how a country manages its affairs, and is taken to encompass all the mechanisms, processes, relationships and institutions citizens and groups use to articulate their interests and to exercise their rights and obligations.”¹²

⁸ UNECE Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Transboundary Waters (Kyiv, 2003).

⁹ Governance Principles for Foreign Direct Investment in Hazardous Activities.

¹⁰ The Protocol had 24 signatories and only one ratification as of August 2015.

¹¹ Central European University, Department of Environmental Policy and Management.

¹² OECD (2011), *Water Governance in OECD Countries: A Multi-Level Approach*, OECD Studies on Water.

Lockwood et al. (2008) have identified several elements relevant to water governance:

- *legitimacy* of the organisation's authority to govern;
- *transparency* in the decision-making process;
- *accountability* of actors and their responsibilities, including integrity concerns;
- *inclusiveness* of the different stakeholders;
- *fairness* in the service delivery or allocation of uses;
- *integration* of water policy making at horizontal and vertical levels;
- *capacity* of organisations and individuals managing water;
- *adaptability* to a changing environment.

Rogers and Hall (2003) have proposed a definition of water governance as a “range of political, social, economic and administrative systems that are in place to develop and manage water resources and the delivery of water services, at different levels of society.” This definition has been adopted by the Global Water Partnership, the World Bank and others. Underpinning the definition, according to the GWP, are principles of transparency, inclusiveness, equity, coherence and integration. Moreover, implementation and performance must be accountable, efficient, responsive and sustainable. The OECD emphasizes that water governance should be distinguished from water management, with water governance referring to “the set of administrative systems, with a core focus on formal institutions (laws, official policies) and informal institutions (power relations and practices) as well as organisational structures and their efficiency.”¹³ The OSCE Secretariat is a member of the OECD Water Governance Initiative,¹⁴ a multi-stakeholder platform that has developed joint principles on water governance.

For UNDP, water governance addresses:

Principles such as equity and efficiency in water resource and services allocation and distribution, water administration based on catchments, the need for integrated water management approaches and the need to balance water use between socio-economic activities and ecosystems.

The formulation, establishment and implementation of water policies, legislation and institutions.

¹³ OECD (2011).

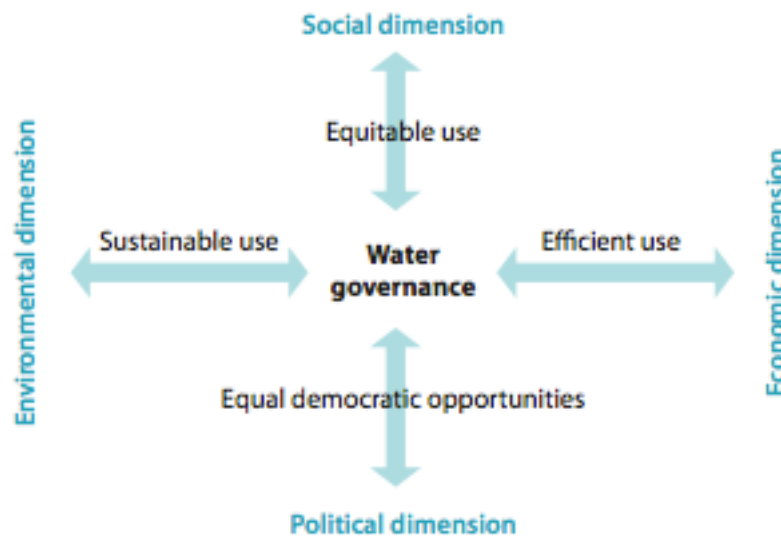
¹⁴ See <http://www.oecd.org/gov/regional-policy/water-governance-initiative.htm>

Clarification of the roles of government, civil society and the private sector and their responsibilities regarding ownership, management and administration of water resources and services.¹⁵

Tropp (2006) presents four basic dimensions of water governance: the social dimension, the political dimension, the economic dimension and the environmental dimension. These can be described as follows¹⁶:

1. The Social dimension focuses on equity of access to and use of water resources, including issues such as the equitable distribution of water resources and services among various social and economic groups and its effects on society.
2. The Economic dimension highlights efficiency in water allocation and use.
3. The Political dimension focuses on providing stakeholders with equal rights and opportunities to take part in various decision-making processes.
4. The Environmental dimension emphasizes sustainable use of water and related ecosystem services.

FIGURE 1: The Four Dimensions of Water Governance



Source: Tropp (2006), reproduced in UNDP (2013), at 3.

The above-mentioned OECD Water Governance Principles (2015) present 12 principles in three mutually reinforcing and complementary dimensions of water governance: effectiveness, efficiency, and trust and engagement.

¹⁵ OECD (2011), at 29.

¹⁶ UNDP (2013).

Effectiveness relates to the contribution of governance to define clear sustainable water policy goals and targets at different levels of government, to implement those policy goals, and to meet expected objectives or targets.

Efficiency relates to the contribution of governance to maximise the benefits of sustainable water management and welfare at the least cost to society.

Trust and Engagement relate to the contribution of governance to building public confidence and ensuring inclusiveness of stakeholders through democratic legitimacy and fairness for society at large.¹⁷

The OECD methodology aimed at bridging water governance implementation gaps addresses administrative, information, policy, capacity, funding, objective and accountability gaps.¹⁸

Due to the fact that the vast majority of river basins in the OSCE area lie within two or more countries, water governance there can only be made effective through cooperation between or among states. Actions for assessing and implementing water governance must deal with the complex variations in policy, strategies, legislation, institutions and administration. In a transboundary context, trust and engagement are critical in ensuring that disputes and conflicts are resolved in a legitimate way and that joint management of water resources can be carried out in the most beneficial and sustainable way. Dialogue towards effective water governance also helps to build trust, confidence and a sense of partnership and can play an important role in conflict reduction. International organizations are supporting countries in this regard, where needed and upon request. However, to provide the right kind of help, the international community has to take into account the specific characteristics of a basin in terms of geology, hydrology, social economy, sociopolitics, political culture, international relations, and legal and institutional frameworks including international law and policy.

2.2 Water management

Water management describes the operational activities for meeting specific targets, such as aligning water resources and water supply, consumption and recycling. Integrated management approaches have been developed to assess particular resources as a basis for planning and policy development. A highly developed set of practices and principles has been applied since at least the 1980s under the labels of “Integrated River Basin Management (IRBM)” and “Integrated Water Resources Management (IWRM).” Standards for IRBM and IWRM have been developed and elaborated by many international organizations. For example, the

¹⁷ OECD (2015) at 4-5, citing further OECD studies.

¹⁸ OECD (2011).

World Bank has developed online resources including briefing notes, while UNESCO has an online course on IRBM.¹⁹

Millington, for the World Bank, states: “Integrated river basin management aims to establish a framework for coordination whereby all administrations and stakeholders involved in river basin planning and management can come together to develop an agreed set of policies and strategies such that a balanced and acceptable approach to land, water, and natural resource management can be achieved.”²⁰ It can be seen from this description that IRBM and IWRM have traditionally focused on land and natural resources management. Other uses of water have been considered in this analysis, but attention was increasingly paid to the need to have better inclusion and cohesion and a more holistic approach to various potentially competing uses of water, including those related to energy and agriculture in particular, and in some cases navigation and commerce.

“Institutional and policy frameworks that foster transparency, accountability, and co-ordination are thus part of good water *governance*. Delivering water or installing improved water services [is] part of water *management*.”²¹

2.3 Water governance in global and regional processes

At the global and regional level, OSCE participating States have engaged in various mechanisms aimed at the implementation of important and relevant global standards, beginning with the concept of sustainable development as set forth in declarations and action plans adopted at global conferences in Rio (1992), Johannesburg (2002) and Rio (2012). One example is the adoption of national strategies on sustainable development. These strategies often establish platforms for consideration of environmental and social impacts of development plans, and often lead to adoption of national legislation on environmental impact assessment (EIA) and strategic environmental assessment (SEA). Other relevant regional regimes include the UNECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991), as well as its Protocol on Strategic Environmental Assessment (Kyiv, 2003). With respect to water specifically, the Convention on the Law of the Non-Navigational Uses of International Watercourses (New York, 1997, UN Watercourses Convention) came into force in August 2014, but some OSCE participating States are not yet parties. At the same time, the equitable

¹⁹ See <https://www.unesco-ihe.org/online-course-integrated-river-basin-management>.

²⁰ World Bank (2006). Millington, Peter. *Integrated river basin management: from concepts to good practice*. Integrated river basin management briefing note; no. 15. Washington, DC.
<http://documents.worldbank.org/curated/en/2006/02/9727476/integrated-river-basin-management-concepts-good-practice>

²¹ OECD (2011).

and reasonable use doctrine, which is enshrined in the New York Convention, is also reflected in the non-binding Berlin Rules adopted by the International Law Association in 2004 that are widely considered to reflect customary international law.

Perhaps the most significant global/regional framework for transboundary water governance in the OSCE area, is the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Helsinki, 1992), developed and adopted under the auspices of the UN Economic Commission for Europe (Water Convention). In 2013, the Water Convention turned into a global legal framework for transboundary water cooperation with the entry into force of the amendments to articles 25 and 26 of the Convention allowing accession by any UN member state.

The UN as well as the UNECE Convention set forth the two main internationally acknowledged principles for water co-operation: the obligation not to cause significant harm, and reasonable and equitable use of water resources. The UNECE Convention in addition obliges its Parties to co-operate by setting up agreements and joint institutions which is also recommended by the UN Watercourses Convention.

The Convention has several main goals: strengthening national and international actions aimed at the protection and ecologically sound management of transboundary waters, both surface waters and groundwaters, and related ecosystems; prevention, control, and reduction of transboundary pollution; and reasonable and equitable utilization of transboundary water resources.²² It achieves these goals through establishing a framework for cooperation that is implemented through bilateral and multilateral agreements on a basin or sub-basin level (Art. 9). To date there are at least 150 transboundary water agreements that have been adopted among states Parties.²³ Examples are given below in Section 3.

The Meetings of the Parties to the Water Convention adopt work programmes aimed at improving implementation of the Convention, covering issues including water governance. The Convention also develops and provides clear guidelines and facilitates long-term political and financial support for such efforts.²⁴ The neutral

²² See Wouters, P. and S. Vinogradov (2004), "Analysing the ECE Water Convention: What Lessons for the Regional Management of Transboundary Water Resources," *Yb. Intl. Coop'n and Dev.* 2003/04, 55, 56.

²³ UNECE (2009). River Basin Commissions and other institutions for transboundary water cooperation.

²⁴ Libert, Bo (2015). "The UNECE Water Convention and the Development of Transboundary Cooperation in the Chu-Talas, Kura, Drin and Dniester River Basins," *Water Intl*, 2015. Vol. 40, No. 1, 168-182.

platform of a UN regional body representing one of the cornerstones of international water law helps to facilitate transboundary cooperation .25

A major platform for developing instruments and guidance on water governance is the OECD's Water Governance Initiative, already introduced above. This initiative has been linked with the periodic World Water Forums, held every three years since 1997 under the leadership of the World Water Council. The 7th World Water Forum in 2015 included a Design Group on the theme of "Effective Governance" led by the OECD Water Governance Initiative in partnership with the Water Youth Network, FAO and the Asian Institute for Policy Studies. The 6th World Water Forum in 2012 included an OECD-led group on "Good Governance" that developed six "Good Governance Targets."

Another UNECE Convention – the Convention on the Transboundary Effects of Industrial Accidents – is relevant to water governance and is also closely related to the Water Convention. The Industrial Accidents Convention takes into account that in many instances the transboundary effects of a particular industrial accident are transmitted through the flow of water across borders. These two conventions were the parent conventions to a single protocol – the Civil Liability Protocol – which, although not yet in force, demonstrates the extent of the synergies and common subject matter between the conventions.

Access to information, public participation and stakeholder engagement are essential elements of successful water governance. Based upon Principle 10 of the 1992 Rio Declaration, the UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus, 1998) sets standards in the OSCE area for states to meet in order to facilitate involvement of the public and other stakeholders in water governance and governance more generally.

The Aarhus Convention is now open to accession by all UN member states. By establishing relevant obligations of public authorities and setting forth an enforceable legal framework for the exercise of rights aimed at environmental protection, it makes the link between human rights, environmental protection and good governance.

The UNECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) is also highly relevant in the context of water governance, and has contributed to strengthening transboundary water cooperation in the OSCE region and in specific transboundary basins. The Espoo Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of Parties to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries. Appendix I to the Convention includes the list of activities that

²⁵ Ibid., see pp. 177-78.

automatically require an application of the Convention if significant impacts may extend across the border. An agreement between Parties could include further activities, which would require transboundary environmental impact assessments (EIAs). Appendix III contains general criteria to assist in the determination of the environmental significance of activities not listed in appendix I. The Espoo Convention obliges Parties to take all appropriate and effective measures to prevent, reduce and control significant adverse transboundary environmental impact from proposed activities “either individually or jointly”, therefore requiring States to cooperate (article 2, para. 1).

The Protocol on Strategic Environmental Assessment to the Espoo Convention should also be mentioned as it sets out obligation for States to evaluate environmental, including health, effects of certain plans and programmes. These include plans and programmes for town planning and land use (article 4, para. 2). These plans and programmes often involve decision-making on such topics as location, technology and size of facilities and activities which can have impact on water quality. For these plans and programmes Parties have to carry out an SEA procedure, which means that effects on water quality will also be evaluated. The purpose of this procedure is to ensure that environmental considerations, in this case the impact on water quality, are integrated into decision-making at the start of development planning.

Under these instruments, the states have accepted a set of common standards and governance rules in areas related to international cooperation and river basin management. In the case of some regional instruments, States parties are also obliged to submit periodic reports on their implementation to the relevant convention and protocol bodies. See, e.g., the EU’s Reporting Obligations Database.²⁶

The Protocol on Water and Health to the Water Convention aims to protect human health and well-being by better water management, including the protection of water ecosystems, and by preventing, controlling and reducing water-related diseases. Parties are required to establish national and local targets for the quality of drinking water and the quality of discharges, as well as for the performance of water supply and waste-water treatment. They are also required to reduce the incidence of water-related diseases, to coordinate inter-sectorally, and to proactively involve stakeholders. Additional relevant provisions include equitable access, sustainability, water safety planning, and information and involvement of the public. While many of the provisions of the Protocol are similar to relevant EU rules (see below), the Protocol goes beyond EU legislation, for example as it applies to enclosed bathing waters (e.g., pools and spa waters) and addresses certain water-borne diseases that are absent from EU legislation, as well as equitable access.

²⁶ <http://rod.eionet.europa.eu/instruments/184>.

2.3.1 Climate change

Climate change has introduced an additional level of complexity that was not considered when IWRM and IRBM frameworks were first developed. Climate change is relevant to water governance in several ways. The effects of climate change can create severe disruptions in long-term patterns related to water cycles on local, national and regional levels, resulting in pressures from, e.g., desertification. As climate change increases extreme weather events, measures aimed at water management may need to be strengthened and additional adaptation measures are necessary. The response to climate change also affects water governance because flexible and adaptive institutions are needed. Climate change itself is largely driven by energy usage, so attempts to mitigate climate change often accelerate demand for and transition towards use of renewable energy such as hydropower. Adaptation to climate change can involve changes to land use, which again has a significant impact on water use. Climate change as a driver of migration represents another significant water governance challenge.²⁷

Recent years have seen attention being paid to reviewing principles and practices of IRBM and IWRM to take into account the increased variability due to the effects of climate change. In river basins where new institutions and mechanisms for cooperation are being developed, the need for taking into account climate change adaptation measures has affected methods and standards for IRBM and IWRM. Where river basin institutions, plans and programs already exist, it is necessary to review and, if necessary, revise these in the light of increased knowledge about climate change.

2.3.2 Sustainable Development Goals

Water is cross-cutting and essential to human development and environmental integrity. For this reason, water has been included prominently in the draft 2030 Agenda for Sustainable Development by the inclusion of Goal 6 as a draft comprehensive Sustainable Development Goal (SDG) to ensure availability and sustainable management of water and sanitation for all, but also through a number of water-related targets in other goals.²⁸ Water and sanitation were also key elements of the Millennium Development Goals (MDGs), comprising a key target in goal number seven, but the inclusion of a dedicated SDG on water represents a significant opportunity for increasing attention to water and water governance. Water and sanitation have been considered as high priorities for many countries throughout the negotiations. Several of the draft targets, including Targets 6.1 to

²⁷ See, e.g., UNEP, “Climate change and environmentally induced migration,” <http://www.unep.org/conflictsanddisasters/Policy/ClimateChangeAndMigration/tabid/282/language/en-US/Default.aspx>

²⁸ UNU and UNOSD. 2013.

6.6, substantially improve on the MDGs' commitments on drinking water and sanitation and deepen the objective to cover the whole water cycle, including wastewater management, water quality, integrated water resources management, water-use efficiency, and water-related ecosystems.

The final text of the SDGs as of August 1, 2015 also includes two sub-paragraphs (6.a and 6.b) under Goal 6 related to international cooperation and governance related to water. Goal 6 reads as follows:

Goal 6. Ensure availability and sustainable management of water and sanitation for all

6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally

6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity

6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate

6.6 By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.a By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.b Support and strengthen the participation of local communities in improving water and sanitation management

Apart from Goal 6, water is also relevant for several other goals:

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable:

11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

Goal 12. Ensure sustainable consumption and production patterns:

12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

With the adoption of the SDGs, much attention is expected to be paid to integrated approaches to water management and governance as essential aspects of the development agenda. The addition of new pressures and interests in the climate change context further highlights the need for better integration of security concepts across these sectors and scales. As states and regions are characterized by different relationships towards food, water and energy in terms of relative scarcity, and as international relations are defined to some extent by these differences, shifts with respect to any of them can have a significant impact. A new development agenda implies change and potential disruption; its implementation requires careful calibration to take security concerns into account.

Recent years have seen advances in international cooperation focused on specific issues that have clarified understanding of security with respect to those single issues. Thus, in the context of the FAO, food security has been defined and elaborated. Water security is being discussed in terms of human if not political security, and energy security has also been fully debated in the sessions of the International Energy Agency. There are as yet no international processes that fully integrate these various notions of security. The adoption of the SDGs with a goal to ensure availability and sustainable management of water and sanitation for all can only further build up pressure for fully integrated multi-use water governance processes.

2.3.3 Disaster Risk Reduction

Building upon the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, the United Nations General

Assembly Resolution 66/199 requested the UN Office for Disaster Risk Reduction (UNISDR) within the UN Secretariat to facilitate the development of a post-2015 framework for disaster risk reduction. The culmination of the work of the UNISDR was the Sendai Framework for Disaster Risk Reduction, adopted by UN Member States on 18 March 2015 at the Sendai Conference. This framework made specific reference to the need to promote the resilience of new and existing critical infrastructure, including water infrastructure, to ensure that it remains safe, effective and operational during and after disasters in order to provide life-saving and essential services. It also called for support to UN entities to strengthen and implement global mechanisms on hydrometeorological issues in order to raise awareness and improve understanding of water-related disaster risks and their impact on society, and advance strategies for disaster risk reduction upon the request of States.

2.4 The Nexus Approach

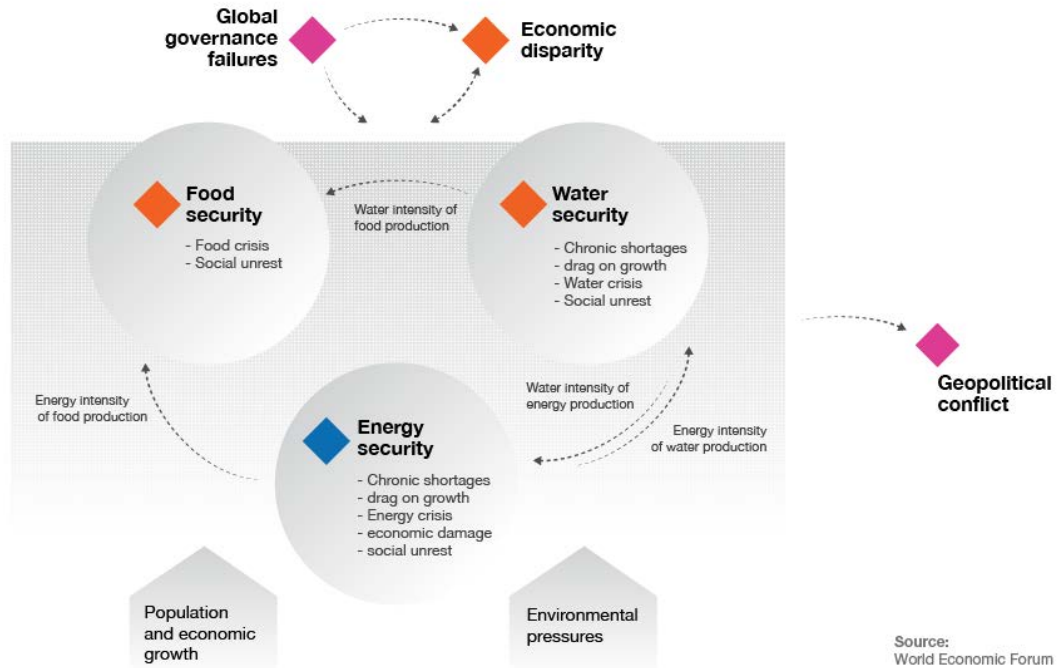
Aimed at improving food, energy and water security, recent years have seen the emergence of the “nexus approach.” At its simplest, the nexus describes the complex of connections and interactions among water, food, energy, ecosystems and other related systems (or sectors), and the “nexus approach” requires taking into account these complex interactions.²⁹ The idea behind nexus is to increase the integration of management and governance across sectors and scales, particularly in integrated water and land resources planning. The common medium for integration across sectors and scales with respect to these complex systems is often water. The nexus is also aimed at greater resource efficiency and policy coherence. While in principle it has much in common with integrated water and land resources planning, and incorporates many pre-existing concepts such as intersectoral coordination, sustainable development planning, internalization of costs, system efficiency, and greening the economy, nexus has arguably represented a step forward in terms of establishing a platform for better inclusion of various related uses of water. While IWRM is aimed at resolving conflicts among water uses, the nexus takes into account a greater degree of dynamism including various development scenarios. It allows for tradeoffs and considerations not only with respect to water, but also with respect to the related sectors including energy, food and ecosystems. Consequently it helps to assess and take into account potential conflicts in terms of the priorities and values of the different sectors, and can create synergies.

The nexus approach received high-level consideration at the 2011 World Economic Forum and the Bonn 2011 Conference: The Water, Energy and Food Security Nexus. The World Economic Forum discussed the nexus in terms of global

²⁹ Stockholm Environment Institute (2011), at 9 (describing “the nexus” in the context of a case study on Ethiopia).

risk and produced a diagram of the relationships between the nexus components and security.

FIGURE 2: Risk Diagram for the Water-Food-Energy Nexus



Source: World Economic Forum (2011). Global Risks 2011, 6th Edition.

Following these meetings, the UNECE Water Convention MOP established a Task Force on the Water-Food-Energy-Ecosystems Nexus, which met for the first time in April 2013. Subsequently, the Task Force is carrying out an assessment of the water-food-energy-ecosystems nexus in selected transboundary river basins as part of the programme of work for 2013–2015.

The nexus approach naturally entails a higher degree of complexity. One level of complexity is in regard to geographical scale. After many years of struggle, IWRM and IRBM finally established the value of assessment, planning and implementation on a river basin or catchment scale. Eventually, institutions and authorities were adapted to make decisions, take responsibility and implement activities at this scale. This is not always the logical or appropriate geographical distinction, however, for energy or food. It therefore becomes necessary to add relationship or conversion factors into the analytical methodology. Moreover, the additional level of abstraction and the diffusion of interests have posed a challenge to effective participation and full and effective representation of public and private interests, which is a concern for some stakeholders, particularly those promoting environmental interests. Finally, methodologies are reasonably well developed in

the IWRM field, whereas there are a variety of trial nexus methodologies currently under development. One of these is the Climate-Land-Energy-Water Use (CLEW) framework.³⁰

Attempts at reducing friction and resolving potential conflicts between uses require the taking into account of differences in governance frameworks for different sectors or uses. Agricultural practices, for example, are largely determined through relationships on a national level among farmers (often self-organized into cooperatives) and local authorities, with linkages to other interest groups such as environmental authorities, consumer groups and other NGOs. The support of good agricultural practices gives credence to the concerns of the other interest groups based on education, financial incentives and public pressure for sustainable agricultural practices.

2.5 Corporate accountability

The international framework for corporate accountability relies primarily upon voluntary standards and private international law for its effectiveness.³¹ In the field of water governance, one such voluntary instrument is the “Governance Principles on Foreign Direct Investment in Hazardous Activities,” developed in the early 2000s. These principles were circulated widely and had an impact on the development of standards such as the International Finance Corporation’s Safeguards Policy. Yet, the voluntary nature of corporate social responsibility standards means that they are easily avoided. However, the Rio+20 Conference outcome document, “The Future We Want,” brought attention to an emerging consensus for binding corporate sustainability reporting obligations for large multinational corporations.³²

The Industrial Accidents Convention establishes obligations among states to address the causes and effects of industrial accidents. Multilateral environmental agreements can impose obligations on private actors only indirectly through the measures taken by states to implement their obligations to other states parties. The approach is similar to that taken in the case of the OECD Convention on Combating Bribery of Public Officials in International Business Transactions.

³⁰ Howells et al. (2013).

³¹ See generally Antypas, Paszkiewicz and Stec (2015).

³² “The Future We Want: Outcome Document Adopted at Rio+20,” <http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf> [accessed 5 August 2015], para. 47. For analysis, see Stec, Paszkiewicz and Antypas (2016).

3. Water governance frameworks in the OSCE area on national as well as transboundary level, including best practice examples

The multi-level governance context related to waters in the OSCE area includes the global and regional levels, the basin level, and national and sub-national levels. At each level the opportunities and challenges for action, and the capacities of relevant actors including authorities, experts, stakeholders and others influence how governance issues can be addressed. As discussed in the previous section, there are numerous processes that relate to different aspects of water governance, which are integrated into governance frameworks to varying degrees. For example, climate change considerations are still incompletely taken into consideration. Therefore, good practice examples in relation to climate change and water governance may be at a less developed stage than good practice examples in relation to IWRM.

At the level of implementation there is a great variation among OSCE participating States, both in terms of capacities and resources, and in terms of the institutional structures, the level of decentralization and in the constitutional make-up of societies. The extent to which a particular country has mechanisms for intersectoral coordination as opposed to a continued “silo” approach is an important measure of the country’s preparedness for integrated decision-making. Intersectoral coordination bodies may already be established in connection with other processes such as sustainable development planning.

3.1 Transboundary basin level

In the OSCE area, bilateral or multilateral agreements on joint management of transboundary waters have been concluded since at least 1858, starting with the agreement between Austria and Bavaria on the regulation and management of the river Inn. The 1909 agreement between the United Kingdom and the United States concerning boundary waters between the US and Canada was the first such agreement to establish a joint body and to govern both water quality and quantity. After the Water Convention was adopted in 1992, the Secretariat of the Convention produced an inventory of 127 bilateral or multilateral agreements on transboundary waters in Europe and North America. The list was updated through 1996, and through questionnaires and other information gathering tools, it is today estimated that there are more than 150 such agreements in the OSCE area.³³

Basin-level institutional arrangements – in particular river basin commissions – should be established in accordance with cooperative frameworks representing political and legal commitments of states towards each other. First and foremost, they provide the means and mechanisms for practical implementation of such commitments, while also improving transboundary communication and

³³ <http://www.unece.org/fr/env/water/partnership/part621.html>

facilitating deliberate and effective consideration of matters of common concern. Such institutional arrangements additionally provide a platform for international cooperation on water governance, including through various forms of international assistance, and the adoption of joint projects and programmes.

An earlier practice is to appoint plenipotentiaries to handle bilateral relations with respect to the joint use and protection of all transboundary waters between two countries. Agreements providing for general cooperation on transboundary (often called “boundary” or “frontier”) waters with the appointment of plenipotentiaries can be found throughout the OSCE area.³⁴ There is a distinct trend, however, particularly since the adoption of the Water Convention in 1992, for cooperative arrangements on transboundary waters to move towards the basin-level approach, involving the establishment of joint bodies such as river basin commissions. The latter offer several advantages in terms of governance primarily due to the fact that such separate institutions can better serve as a focus for responsibility, accountability, and access by various stakeholders and the public, within a clearly delineated, scientifically-based geographical area. The basin approach is also in line with the eco-system approach that is reflected throughout global environmental policy.

Cooperative institutions such as river basin commissions provide a platform for setting targets and planning action to meet water management goals, and for the consideration of practical issues such as the financial aspects of water management at the basin level. While implementation of measures adopted in transboundary contexts usually remains the responsibility of the riparian states, river basin commissions can assist the states in communicating with relevant international institutions, in order to explore possibilities for funding priority projects. The process of transboundary dialogue and the determination of joint priorities that have the endorsement of all interested parties give additional weight to the actions, plans and projects adopted, and are more likely to receive attention from potential donors and partners. The quality of governance arrangements will also play a role in the evaluation of requests.

Other regimes may have an impact on the establishment of arrangements for cooperation. For example, Aarhus Convention Parties are obliged to promote the application of the Aarhus Convention in international processes. This obligation should apply to the process of developing and implementing bilateral and multilateral arrangements for the joint management of shared natural resources in the framework of the Water Convention.

³⁴ UNECE (2009). “There are three major types of institutional arrangements for inter-State agreements on transboundary waters: (a) without designation of an institution to implement the agreement; (b) the appointment of plenipotentiaries (governmental representatives); and (c) the establishment of a joint commission responsible for the implementation of the agreement.”

The OSCE area is fortunate to have several well-developed and pioneering basin-level organizations, including commissions, in place with long practice and highly elaborated sets of institutions and standards. Among the examples are international commissions pertaining to the following river basins: Rhine, Oder, Elbe, Meuse/Maas, Scheldt, Sava and Mosel-Saar. The largest river basin in the OSCE area is that of the Danube, which has its International Commission for the Protection of the Danube River (ICPDR) and well as a separate Danube Commission with a mandate related specifically to navigation. Some transboundary commissions have dealt with specific aspects of water management, such as fisheries (1994 agreement between the Russian Federation and Estonia on Chudskoye, Teoploye and Pskovskoye Lakes). Beginning in the late 1990s, more transboundary arrangements on a basin level have arisen, particularly in the EECCA region. Not all arrangements are described in this review, but a few important examples are mentioned below.

In 2011, UNECE prepared the Second Assessment of Transboundary Rivers, Lakes and Groundwaters,³⁵ which included the following maps providing an overview of cooperation on transboundary waters in Europe and Central Asia.

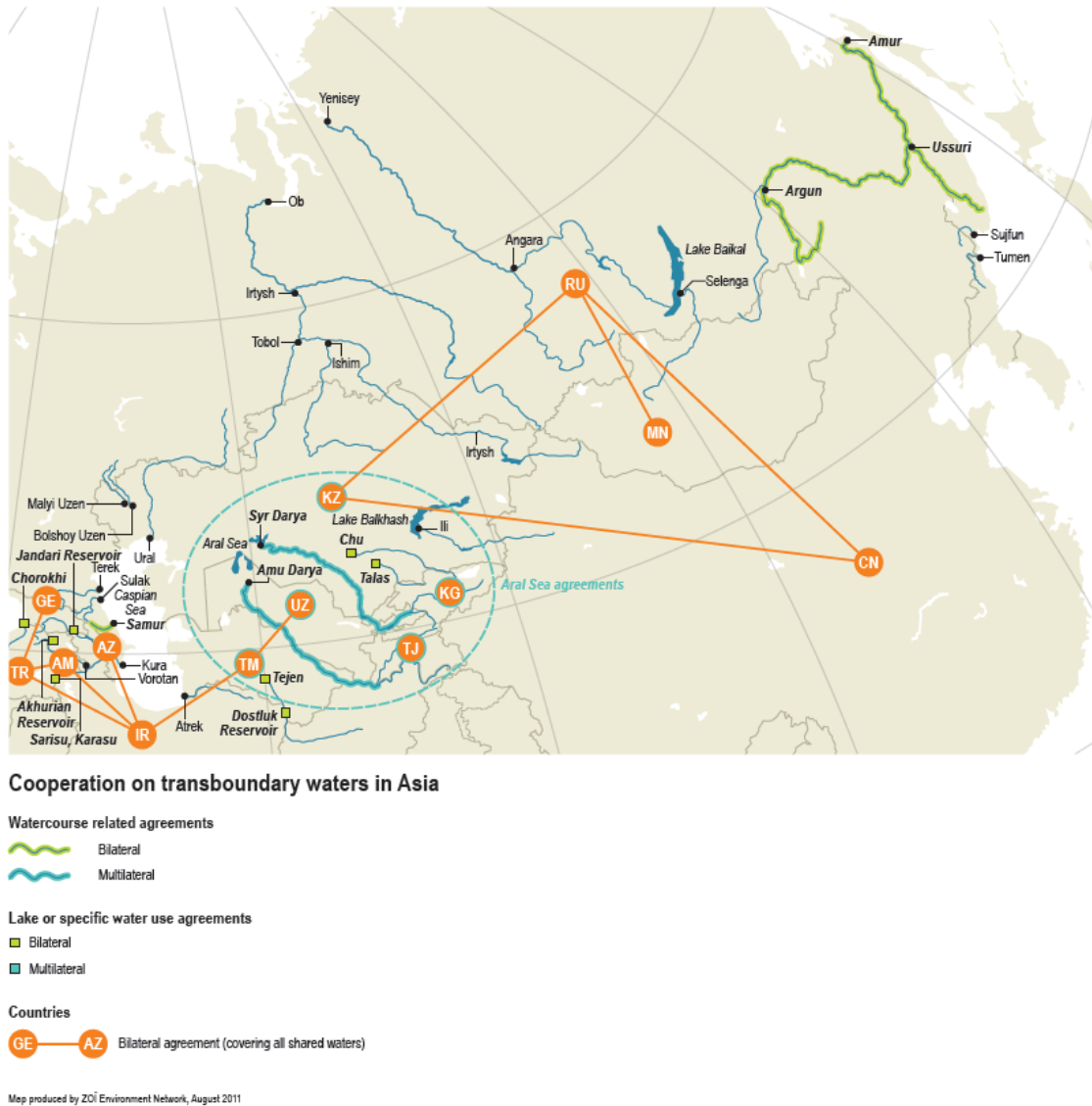
³⁵ UNECE (2011a).

FIGURE 3: Cooperation on Transboundary Waters in Europe



Source: UNECE 2011 a

FIGURE 4: Cooperation on Transboundary Waters in Central Asia



Source: UNECE 2011 a

Rhine

The Treaty of Bern adopted in 1963 was the first international agreement on protection of the Rhine River. Under this treaty several riparian states (France, Germany, Netherlands, Luxembourg and Switzerland) established the International Commission for the Protection of the Rhine against Pollution (ICPR). Due to the acute problems with chemical pollution in the Rhine, the Parties adopted an additional agreement on chemicals in 1976 and in 1987 the Parties adopted the Rhine Action Programme. Recognizing the need for further efforts, in 1999 the

same states adopted the Convention on the Protection of the Rhine, which superseded the Treaty of Bern. The Parties have also adopted financial regulations and rules of procedure to govern and facilitate their activities and joint decision-making. The contracting Parties have held regular conferences of ministers since 1972. The ICPR has an annual Plenary Assembly with a rotating Presidency, served by a Secretariat in Koblenz. It can establish Advisory Groups.

With the development of European Union law applicable to transboundary waters, such as the Water Framework Directive and the Flood Management Directive, the riparian states and regions (including besides those mentioned Italy, Austria, Liechtenstein and the Wallonia Region of Belgium) found it useful to establish an informal Coordinating Committee Rhine (CC) in 2001. The CC fulfils, inter alia, tasks related to coordination within the international Rhine River basin district required under the Water Framework Directive. Relations between the CC and the ICPR are governed by a separate set of Rules of Procedure and Financial Regulations. The latter agreement establishes a cost sharing formula.

The Rhine regime is an example of successful cooperation over many years that has evolved to take into account political and legal developments regionally and globally. The regime has involved multiple groupings of countries and established mechanisms for coordination and cooperation between them.

As in the case of the Danube, discussed further below, the Rhine also is the subject of a separate agreement and commission dealing specifically with navigation.

Danube

Regional cooperation on the Danube is governed in part by two conventions. The 1948 Convention Regarding the Regime of Navigation on the Danube (Belgrade Convention) established the Danube Commission, regulating free navigation. The Danube River Protection Convention (DRPC), under which the above-mentioned ICPDR is established, was adopted in 1994. One example of how these bodies cooperate is the process of implementation of the Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube River Basin, coordinated jointly by the ICPDR, Danube Commission and International Sava River Basin Commission (ISRBC), together with the European Commission. The 5th Meeting on implementation of the Joint Statement was held in Zagreb, February 4-5, 2014. The Sava River sub-basin level shows the complexity of the interactions between these two regimes. Cooperation between the ISRBC and the two Danube Commissions (ICPDR and Danube Commission) is formally based on memoranda of understanding signed with both commissions separately, which provide opportunities for close cooperation and coordination of

activities. By means of mutual participation at sessions, expert group meetings and other events of the commissions, coordination of the activities is enhanced.³⁶

The Danube setting provides an example of inter-sectoral integrated decision-making on the national/regional level through the application of purpose-built tools and mechanisms. In the Box is an example in the context of sustainable hydropower.

Box 1: Example - ICPDR Guiding Principles on Sustainable Hydropower Development in the Danube Basin

Under the ICPDR, these Guiding Principles have been adopted to create a common vision and understanding on the requirements, the policy framework and issues to be addressed to ensure sustainable use of hydropower in the Danube basin. The Principles are intended to support a coherent and coordinated implementation of relevant legislation, in particular for the EU Renewable Energy Directive, the EU Water Framework Directive and other relevant environmental and water management legislation.

The Guiding Principles have a broader focus than just hydropower production and conservation of the environment. In the first place, the relevant environment includes not just aquatic ecosystems, but also directly dependent terrestrial ecosystems as well as landscapes. Moreover, the Principles consider the following other aspects:

- Flood protection and water uses (e.g. water supply, irrigation, navigation, recreation, etc.) for people and communities,
- Other national or regional objectives and constraints (social, legal, economic, financial, human health),
- general environmental aspects including changes in freshwater ecosystems on surrounding ecosystems (e.g. forests) and objectives regarding climate protection or adaptation to climate change (e.g. ecosystem services),
- socio-economic aspects – allocation of revenues, decentralized approaches, employment, paradigm of society (sufficiency instead of efficiency and economic growth), and
- Regional development. (See ICPDR, Guiding Principles)

The Guiding Principles are aimed at the following goals. For new hydropower development, the application of a strategic planning approach is crucial for integrating water, environment, energy and other key policy objectives. Application of the Guiding Principles provides opportunities for involvement of stakeholders in priority setting and planning processes. Not least, good strategic planning can help streamline the authorization process on proposed new hydropower developments and improve transparency and predictability for hydropower developers.

Sava

In the Sava River Basin, a sub-basin of the Danube covering parts of Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro and Albania, the riparian countries except Albania (whose territory covers a negligible part of the basin) negotiated the Framework Agreement on the Sava River Basin (FASRB) in 2002,

³⁶ ISRBC (2014).

under which the ISRBC was established as its implementing body in 2005. The FASRB was the first development-oriented multilateral agreement in this region after the Dayton Peace Agreement. The first meeting of the Interim Sava Basin Commission (ISBC) took place at the OSCE premises in Vienna in April 2003. The FASRB bears a relationship to the UNECE Water Convention as a multilateral agreement for implementation of the Water Convention in a particular basin. As a sub-basin of the Danube, it bears a relationship to the Danube River Protection Convention. Dealing with navigation, it bears a relationship to the Belgrade Convention and the Budapest Commission for Navigation on the Danube as well.

The FASRB provides a context for further development of the framework regime through the adoption of protocols. The ISRBC is a forum for representation of diverse interests of the riparian countries, for example, recreation and tourism, industry, agriculture and navigation for coordination of activities of the countries in these issues and the resolution of issues of common concern. It is also a platform for regional, basin-wide progress on mostly navigation and water management but also other matters, including those related to EU legislation as mentioned below.

The above-mentioned obligation under the Aarhus Convention to promote its principles in the international context has certainly had an impact in the Sava River Basin, where activities related to public participation and stakeholder engagement in the framework of the FASRB have consequently increased. Information on FASRB implementation is communicated to the public via its website, www.savacommission.org, and through various publications and releases. More importantly, the ISRBC has organized direct consultations and meetings with stakeholders. The Public Participation Plan for the SRB, finished in 2014, presents a good basis for further activities on strengthening the public participation and stakeholder involvement in the process of implementation of the FASRB³⁷. A proposed Sava Water Council that would increase stakeholder involvement and give a greater voice to stakeholders is in the early planning stages.

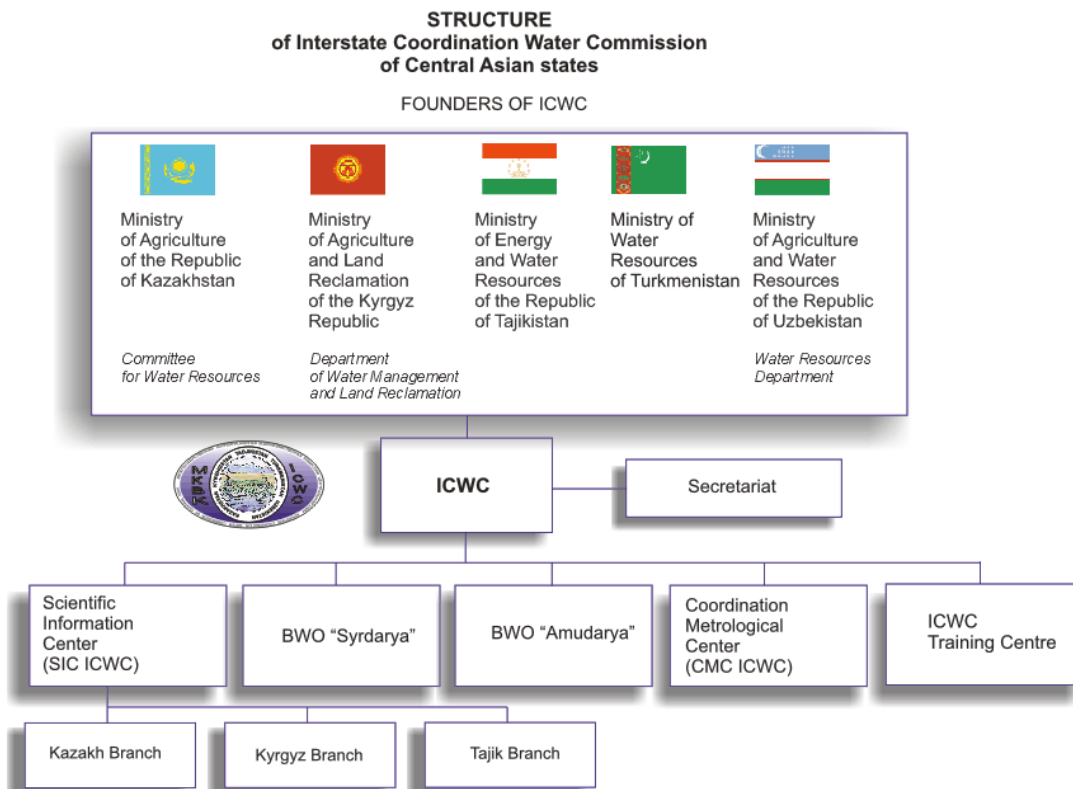
Amu Darya and Syr Darya (Aral Sea Basin)

For the Aral Sea basin in Central Asia, the five Central Asian states signed the Agreement on cooperation in joint management, use and protection of interstate sources of water resources in February 1992, only a few months after the dissolution of the Soviet Union, which established the Interstate Commission for Water Coordination (ICWC). The ICWC was the first regional institution set up after independence. Its main tasks are to control the regulation, efficient use and protection of the waters, to develop a regional common water management policy and to determine annual limits of water use for each state. Later it was integrated in the International Fund for Saving the Aral Sea (IFAS). The ICWC includes two river basin organizations for the Syrdarya and Amudarya basins.³⁸

³⁷ Importance of public participation was acknowledged by the ISRBC at its 34th session in February 2014.

³⁸ See Diebold and Sehring (2012)

FIGURE 5: The structure of the Interstate Commission for Water Coordination of Central Asia



Source: Dukhovny (2007)

3.2 EU context

For the 28 OSCE participating States which are members of the European Union and the six OSCE participating States aiming at EU accession, relevant EU policy and legislation are main guidelines for water governance on national as well as on transboundary level. In many regards, EU standards and legislation represent a highly elaborated, coherent and integrated manifestation of generally agreed principles. In some basins, the additional requirements of the applicable EU rules and regulations have led to the need for adjustments to pre-existing transboundary cooperative arrangements. For example, in the context of the existing Rhine Commission, a Coordination Committee was set up to coordinate the implementation of the Water Framework Directive (WFD) on a basin-wide level in the Rhine River basin district, coterminous with the river basin as defined under the original treaty.

The EU *acquis communautaire* in the field of water management has profound importance for furthering sustainable water use and pollution reduction and control. The WFD sets forth the main principles of water management policy in the European Union. It introduces the river basin management approach and requires authorities to achieve good status for all waters. The WFD sets forth detailed requirements with relevance to transboundary cooperation, aimed at the implementation of the river basin management approach, the establishment of river basin districts that may cross borders, and the development of river basin management plans. Its relevant provisions include inter alia transboundary river basin districts, river basin management planning, drinking water (quality standards, point of compliance, monitoring requirements, remedial actions, use restrictions), pricing for water usage (full environmental cost recovery principle), wastewater treatment (emission limits), extraction permitting, groundwater, public information, consultation and stakeholder engagement. Art. 6 of the WFD requires establishment of a register of protected areas (PA), including the details of related water bodies.

Another cornerstone of EU water policy is the Urban Waste Water Treatment (UWWT) Directive (91/271/EEC) regulating the collection and treatment of waste water in all agglomerations (e.g. it requires secondary treatment of all discharges from agglomerations of > 2000 population equivalents (p.e.), and more advanced treatment for agglomerations of >10,000 p.e. in designated sensitive areas and their catchments).

For countries that aim at accession to the EU, progress in the form of basic measures for harmonization with EU requirements should be achieved within a timeframe that is realistic and acceptable by the relevant countries given their specific situations, as follows:

- Specification of the number of wastewater collection systems (connected to respective waste water treatment plants (WWTPs)) planned to be constructed by 2015
- Specification of the number of municipal and industrial WWTPs planned to be constructed by 2015 including:
 - Specification of treatment level (secondary or tertiary treatment)
 - Specification of emission reduction targets
 - Development of river basin management plans.

Food Security, Agriculture, Forestry – The EU *acquis* includes control measures related to food safety. The EU's Common Agricultural Policy (CAP) is the overarching EU policy document in this area. It includes interventions in certain agricultural product markets in order to maintain price levels and production. It has evolved over the years, in particular to respond to WTO decisions related to specific subsidies, such as that for sugar beets. The CAP aims at integrating environmental concerns and reducing the risks of environmental degradation while enhancing the sustainability of agro-ecosystems. A potentially important aspect of EU policy in this field is the Rural Development Policy, aimed at stimulating

economic, social and environmentally sustainable development in the countryside. A part of this policy is aimed at forestry and combating climate change.

At the same time, the EU *acquis communautaire* in the water sector plays an important normative and strategic role with respect to agriculture. Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources aims to protect water quality across Europe by promoting the use of good farming practices. The implementation of the Nitrates Directive requires:

1. Identification of waters that are polluted, or at risk of pollution
2. Designation of "Nitrate Vulnerable Zones"(NVZs)
3. Establishment of Codes of Good Agricultural Practice to be implemented by farmers on a voluntary basis
4. Establishment of action programmes to be implemented by farmers within NVZs on a compulsory basis.
5. National monitoring and reporting.³⁹

Energy – Energy policies have a major impact on water governance through investments in hydropower. EU strategies in the energy sector are driven by global energy security considerations as well as constrained by climate change mitigation targets. Although the legal basis for a common EU energy strategy is well-established, progress has been slow. In 2009 new directives were issued for common markets in electricity and natural gas, which encourage development of renewable energy. The EU also has established several programs aimed at specific outcomes, such as achieving climate change related goals.

Ecosystems – The two pillars of EU nature protection policy are the Birds and Habitats Directives. These two directives recognize the importance of habitat protection for migratory and other species, and establish a protection regime for land and water areas that are needed for the conservation of species and habitats. Consequently these directives also affect water uses and governance regimes, in particular by restricting activities in protected areas.

Floods - Directive 2007/60/EC on the assessment and management of flood risks has the aim to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. EU Member States were required to identify river basins and associated coastal areas at risk of flooding by 2011, draw up flood risk maps for such zones by 2013, and establish flood risk management plans focused on prevention, protection and preparedness by 2015.

³⁹ EUR-Lex, Summaries of EU Legislation: Agricultural nitrates, <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV:l28013>.

Besides EU legislation *per se*, there are other mechanisms adopted at the EU level that are relevant to water governance in the OSCE area. The EU Strategy for the Danube Region⁴⁰ is a model for cooperation among riparian countries, for strategic planning and priority setting. At the Sava sub-basin level, ISRBC has played a role in the implementation of the Strategy. EU standards and legislation are practically universal in the context of the Danube River Basin, given that the riparian states are either EU Member States, accession countries, or have signed up by agreement to specific relevant EU standards. The Sava River Basin provides a specific example of transboundary water governance in a context in which EU legislation and standards apply. In the sub-basin of the Sava River, all Sava riparian countries have taken steps towards accession to the European Union, with Slovenia and Croatia already member states. Consequently, all Sava riparian countries have made commitments towards adoption of the relevant elements of the environmental *acquis communautaire* and other relevant rules found in European Union law. For Slovenia and Croatia, EU membership means that compliance with the *acquis* is a matter of treaty obligation, and is enforced by the European Commission as the guardian of the Treaties. For non-member states, commitments are a part of the closure of particular chapters in the accession process, and are subjected to progress monitoring, without specific sanctions other than delay in accession. The possibility of derogations for states upon accession should also be taken into account. For example, the deadline for implementation of Directive 91/271/EC (organic pollution) is 2017 for Slovenia and 2023 for Croatia.

The different status of the states vis-à-vis the European Union provides specific opportunities and challenges. Accession to the EU and membership following accession involve shifts in development policies that may require major infrastructure development. EU integration at national level with relevance to water governance is handled by a range of institutions in coordination with the state-level institutions responsible for international relations and EU integration. For example, in Serbia a Minister without portfolio is responsible for European Integration. Serbia has adopted a National Environmental Approximation Strategy (2011) that includes as a goal the establishment of institutional arrangements for full and effective approximation. The EU integration authorities potentially play an important role in encouraging cross-sectoral cooperation and coordination. The extent to which the institutions set up for EU integration take into account cross-sectoral or multi-sectoral governance issues, or whether they have specific powers and responsibilities to coordinate sectoral authorities with respect to EU integration priorities, is unclear at present.

In the Sava River Basin, for example, Slovenia and Croatia as member states have access to structural funding for infrastructure development. The pre-accession states will have access to European funding through pre-accession instruments, but at different levels and with different priorities. The latter also have access to other

⁴⁰ www.danube-region.eu

bilateral funding and international assistance mechanisms through UN agencies and other international organizations.

3.3 National level

On the national level, water governance depends upon a complex arrangement of policies, institutions, strategies, laws and programs adopted and implemented at multiple levels. As already mentioned, the global, regional and basin contexts affect the adoption of frameworks for national implementation measures, while the cross-sectoral nature of water governance poses immense challenges in terms of the differences across sectors in culture, scales, institutions, policies and values. Mechanisms aimed at increasing the capacity of states to improve decision-making, particularly through enhancing integrated decision-making, are therefore critical.

Basin management organizations (BMOs) can be set up for the territory of a country that falls within a particular river basin. Where the basin is transboundary in character, the national BMO serves as the counterpart for the corresponding BMOs or other institutions in the neighboring countries that share the river basin, and can also play a role in national implementation where the basin is covered by an international agreement and/or river basin commission. Within the European Union most aspects of water governance on the national level are carried out pursuant to the EU *acquis communautaire*.

This section examines some of the mechanisms available for enhanced water governance. Many of them, such as the Payment for Ecosystems Services scheme discussed below, have been specifically acknowledged in Water Convention bodies as contributing to the implementation of the Convention.

3.3.1 Effective institutional frameworks

Institutional frameworks for water governance vary from country to country. Water management as a multi-sectoral task falls under the competences of different ministries at the national level. In many countries the competencies over water are divided among several ministries. Sometimes, this affects the consistency as to which sector leads on water. For example, in Germany seven Ministries at federal level have competencies with regard to water, while the Ministry of Environment has the lead. In Montenegro, six ministries have competencies over water with the Ministry of Agriculture and Rural Development as the leading ministry.⁴¹ Arrangements are thus needed to enhance cooperation and ensure a systematic approach across sectors. Another recurring issue is the constant reconfiguration of ministries and the constant restructuring brought about by change in government.

⁴¹ See EPR, Montenegro (draft as of March 2015), UBA 2010.

States may establish horizontal multi-stakeholder coordination bodies, and these may vary in their effectiveness. Croatia, for example, according to the 2014 Environmental Performance Review, “has created several permanent advisory bodies comprising high-level representatives for the purpose of horizontal multi-stakeholder coordination. However, their activity has been weak or non-existent.” But a new advisory body – the Sustainable Development and Environmental Protection Council – has recently been formed to “provide opinions on proposals for documents to be adopted by the Government and Parliament in terms of harmonization ... in resolving issues related to environmental protection, economic development, climate change, etc.”⁴² Croatia also provides a good example of cooperation between its Ministry of Environment and Nature Protection and the Ministry of Agriculture. The two ministries jointly develop agro-environment measures, review and revise cross compliance conditions, and organize training programs to help farmers apply for incentives. In addition a “working group has been set up with the Payment Agency (the agency that provides payments to farmers), the Ministry of Agriculture and other relevant institutions in the agricultural sector to work on agro-environment measures.”⁴³

Intersectoral coordination presents a difficult challenge particularly where authorities and decision-making have been highly specialized, following the “silo” approach. The European Union Water Initiative (EUWI) National Policy Dialogues (NPD) process has provided immediate benefits in terms of coordination of institutional arrangements (see BOX). Under the EUWI NPDs, a key element is the establishment of National Steering Committees that can serve the function of intersectoral coordination.

BOX 2: European Union Water Initiative National Policy Dialogues

In 2002, the European Union launched the European Union Water Initiative National Policy Dialogues on IWRM and on Water Supply and Sanitation (WSS) at the World Summit on Sustainable Development in order to support water governance and sustainable development in different world regions. For the region of Eastern Europe, Caucasus and Central Asia (EECCA), the UNECE is the strategic partner for support to the policy dialogue processes on IWRM, whereas the OECD is the strategic partner for WSS and financial aspects of water resource management. In the context of the Water Convention in cooperation with OECD, NPDs on IWRM have been conducted since 2006 in the EECCA region.⁴⁴

NPDs involve the development of policy packages that are specific to the circumstances of an individual state. The contents of such packages also change over time based on developments in the field. They are based on multi-stakeholder consultations under the leadership of a high-level official, with the support of steering committees with the involvement of international organizations. As a result, the NPD process has become more than a process for policy development but also acts as a focal point for water-related projects carried out with the support of the international community. Specific results are reported for Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Republic of

⁴² UNECE (2014).

⁴³ UNECE (2014).

⁴⁴ See ECE/MP.WAT/WG.1/2015/3 (15 April 2015); UNECE and OECD (2014).

Moldova, Tajikistan, Turkmenistan and Ukraine, which are exchanged, inter alia, through the EUWI Working Group for Eastern Europe, the Caucasus and Central Asia. In these countries the EUWI has promoted changes to water policy, establishment of modern frameworks for water management on IRBM and IWRM principles, and development of strategies, legislation and planning priorities. Among the outcomes of the NPDs, Turkmenistan ratified the Water Convention and adopted a new water law. Several countries adopted water sector strategies. In Kyrgyzstan the River Basin Management Plan for the Chu Basin was developed and adopted. The Republic of Moldova adopted a wastewater strategy. Several countries established targets under the Water and Health Protocol, even some that are non-Parties.

The EUWI and other initiatives support countries in the adoption of policy tools and mechanisms for better water management and better water governance. These tools and mechanisms in turn operate on various levels. On the strategic level, relevant national strategies and actions plans pursuant to which laws and regulations are developed set the framework for good water governance. Inter-sectoral coordination plays a key role. At the level of implementation, processes for integrated decision-making ensure that strategic choices are respected and the maximum considerations are taken into account. For a system of governance to operate, institutions must be functional and well-resourced.

In connection with the EUWI NPDs, the UNECE and OECD have developed a set of five principles reflecting necessary conditions for application of IWRM on the national level, based partly upon the guiding principles of IWRM adopted by the 1992 International Conference on Water and Environment in Dublin.⁴⁵ These are the principles of: Basin management; Intersectoral and vertical coordination of water management; Transparency and public participation; Sustainability of water resources use, including protection of ecosystems; and Financial stability of water management and the use of economic instruments. In terms of reducing these five principles into measures on the national level, some of the most important policy instruments that states can implement relate to development of relevant national strategies and action plans, policies and legislation related to integrated decision-making, permitting, decentralization and water user associations, financing and cost recovery, effective institutional frameworks, and information and participation, each of which is discussed below.

Armenia established a National Water Council in 2002 under the Water Code as a central advisory body that makes policy recommendations. In Tajikistan the Water-Energy Council of the Government provides intersectoral coordination on issues linked to the use of water resources. The Council consists of heads and experts of various ministries and State agencies, but it can also invite outside experts, researchers and non-governmental organizations (NGOs) to its meetings.⁴⁶

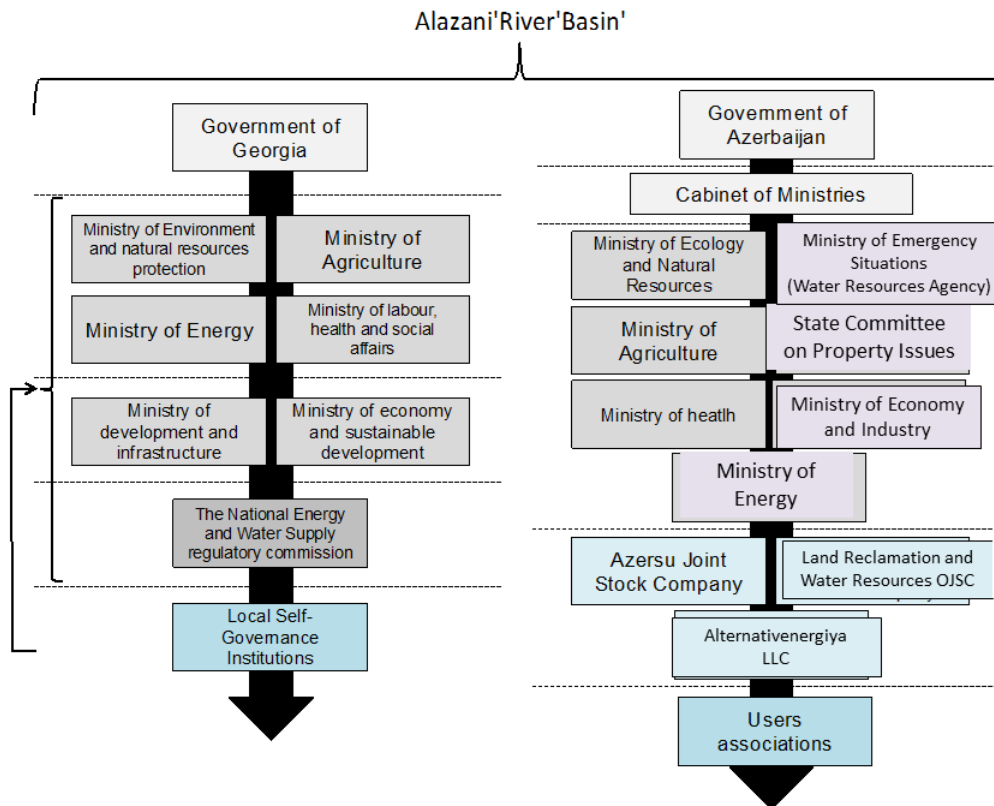
National institutional arrangements need to be taken into account in basin-level and in international cooperation on water governance. Figure 6 below, shows a relatively simple institutional arrangement for river basin cooperation involving two riparian states (Azerbaijan, Georgia) in the Alazani/Ganykh Basin. Figure 7 below, shows a partial mapping of relevant institutions in relation to agreements relevant to water governance in the Sava River Basin, a much more complex setup covering five countries. Typically, local governments play a key role in water supply, wastewater collection and sewerage services, and wastewater treatment,

⁴⁵ UNECE and OECD (2014); see also ICWC (2009).

⁴⁶ UNECE and OECD (2014).

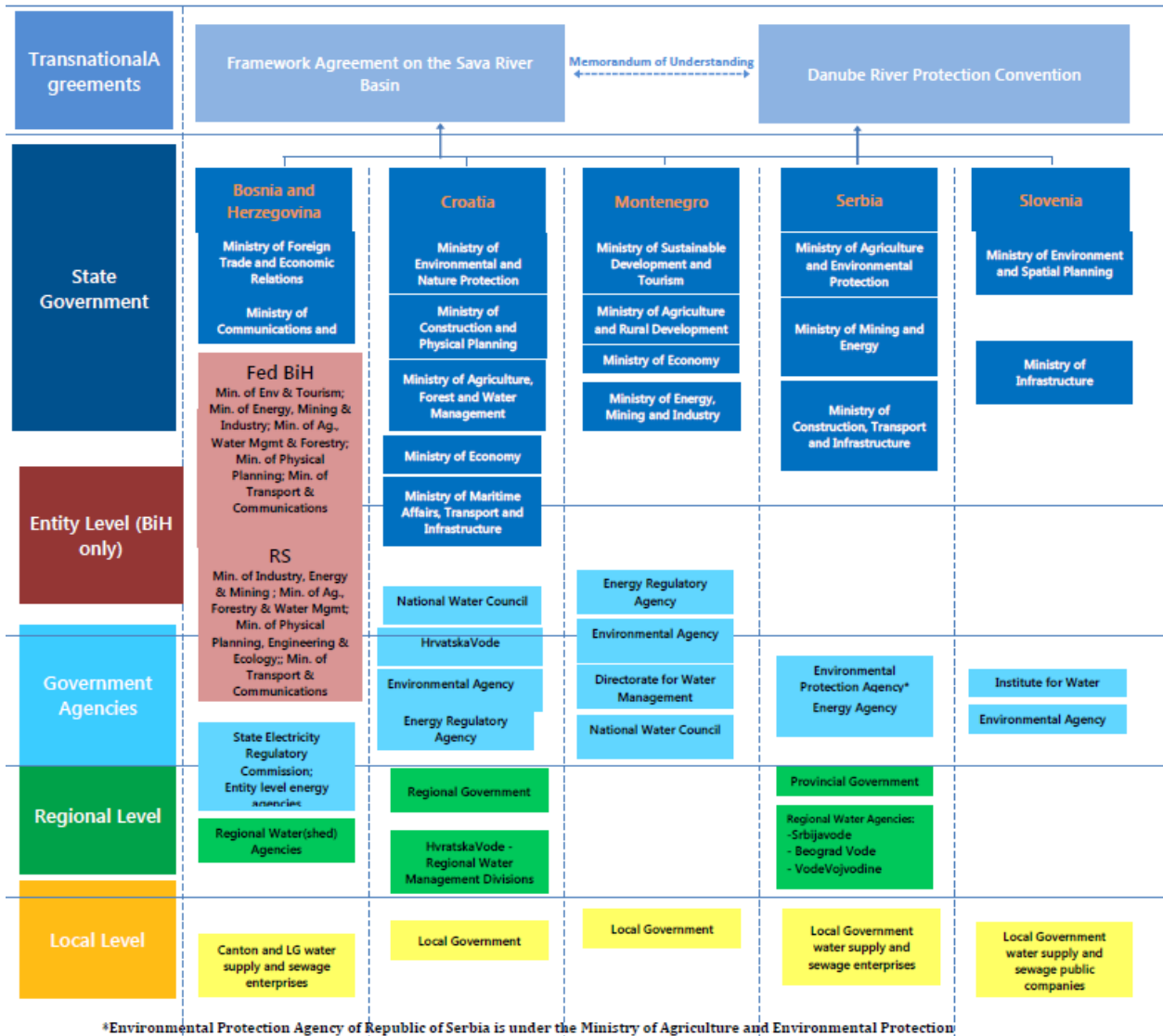
while water management enterprises perform operational activities in the field of water management.

FIGURE 6: Map of organizations related to resource management in Georgia and Azerbaijan relevant to the Alazani/Ganykh River Basin



Source: UNECE (2015a)

FIGURE 7: Institutional Mapping Relevant to Water Governance, Sava River Basin



Source: UNECE (2015a)

National inspection authorities play an important role in enforcement and in ensuring compliance with relevant regimes. While capacities of inspectorates have increased in recent years, understaffing is still a problem. Moreover there has been a movement in some countries towards establishing independent inspectorates that have broad, horizontal authority over many issues and matters.

3.3.2 National policies and legislation related to water and integrated decision-making

Coherence and integration between sectoral policies as well as other policies (e.g. climate change mitigation and adaptation) at an international, EU and national level are ongoing challenges. Responses such as the nexus approach, which has not developed to the extent that it is reflected directly in national or sub-national policies, highlight some of the challenges and opportunities. Agriculture, for example, is an important sector with relevance to water governance. At the national

level most countries have ministries of agriculture set up on their own or in combination with other policy domains. The ministries provide policy and institutional directions for farmers and other actors in the agricultural sector and at the same time cooperate with environmental authorities. Local farmers are also important self-regulating actors who may voluntarily apply good agricultural practices. Yet geographical scales for agriculture are related to, but not necessarily contiguous with, river basins. Institutions are organized differently from water, energy or ecosystem related institutions. As identified in the context of the Sava River Basin:

“Changes to farming practices will take time to deliver environmental benefits, so action on improving agricultural management via regulatory, voluntary and incentive schemes must begin now in order to meet WFD objectives. The WFD will have implications for farming practices and land management as well as water management. Farmers will need to manage their land carefully to meet the WFD requirements.”⁴⁷

Ukraine, Kazakhstan and Moldova already have more than a decade of experience with BMOs. Ukraine’s BMOs cover roughly 90% of its water resources. Meanwhile, reforms to water laws applying the principles of IWRM including the river basin approach have been instituted in several OSCE participating states in recent years, including Armenia (2005), Kazakhstan (2003), Kyrgyzstan (2005, for pilot basins), Moldova (2011) and Tajikistan (2012). River basin management planning is making steady progress throughout the EECCA region. For example, in Armenia plans have been developed for up to 8 out of 14 hydrological basins.⁴⁸ Meanwhile, plans are under development in several key basins, including Prut, Dniester, Lower Danube, Southern and Western Bug and Upper Dnieper, in the Republic of Moldova and Ukraine.⁴⁹

Water governance is particularly enhanced through decision-making tools such as EIA and strategic environmental assessment, or SEA. In general EIA and SEA, particularly in a transboundary context, could be effective tools to assess the impact of energy, water management and agricultural projects on ecosystems and to resolve competing objectives, as well as to ensure proper public participation. These policy tools are also aimed at internalization of externalities in order to implement the polluter pays principle, which is especially relevant in water policy. While laws on EIA and SEA have been introduced at the framework level throughout the region, in some OSCE countries implementation is not complete and practice is not well developed. The tools could support, for example, consideration of different alternatives for e.g. hydropower development projects, concentrating them outside zones of high conservation value. Successful development of multi-sector flow

⁴⁷ ISRBC (2013).

⁴⁸ Four were completed by 2013 with four more scheduled to be completed by the end of 2014. See UNECE and OECD (2014).

⁴⁹ UNECE and OECD (2014).

regulation projects requires sufficiently early consideration of different users' needs so that they can be taken into account in designs and budgets.

Most OSCE participating States are parties to international legal instruments on environmental assessments (e.g. Espoo Convention) and on public participation (Aarhus Convention). They have taken measures to implement these instruments through national legislation and policy documents like strategies and plans for implementation. All of these pieces of legislation and strategic documents play a vital role in enhancing good governance and integrated decision-making.

The SEA Protocol is increasing in applicability, although there are fewer Parties to the Protocol as compared to the Espoo Convention, and the lack of adherence to the SEA Protocol is especially acute in certain beneficiary regions. The relevance of SEA to water governance is demonstrated by the EU SEA Directive 2001/42/EC, which requires SEA for policy-level assessments with multi-sectoral impacts, for example in order to conduct assessments with relevance to the Habitats Directive.

Even without transboundary aspects, within an individual state national policies should be developed through SEA and other multi-sectoral assessment processes. Nevertheless, the transboundary level tends to drive national practice. If we look at the transboundary SEAs conducted in the Sava River Basin, for example, most of them are related to water management and energy, e.g. concerning the river basin management plan of Croatia (2007-2013), the national physical plan for the Mokrice hydroelectric power plant (Slovenia, completed in March 2013), the river basin management plan of Slovenia 2009-2015 (Slovenia, completed in January 2013), the National Energy Programme of Slovenia 2010-2030 (Slovenia, completed in October 2012), and the national physical plan for hydroelectric power plant Brežice (Slovenia, completed in March 2012). (Croatia, EPR, 2014). In 2010-2012, Serbia participated in a transboundary SEA for the Energy Development Strategy of Montenegro, and conducted one for Serbia's new Energy Sector Development Strategy for 2025-2030.

In some cases national policies have to be strengthened to resolve existing water allocation conflicts, e.g. regarding energy and nature conservation. In Montenegro any intended construction of hydropower plants is likely to raise conflicts, because locations with high energy potential also have excellent ecological quality, connectivity and hydromorphological conditions. Proposed hydropower installations to be constructed in the Tara River were abandoned due to environmental and other concerns (e.g. seismic instability).

3.3.3 Relevant national strategies and action plans

Strategic planning is at the heart of water management at national and local level. Relevant authorities adopt strategic documents in the field of environment as a whole and in the water management sector. Strategic planning takes into account

international obligations as well as policy choices that are driven by considerations of international relations and domestic priorities. Many strategies and action plans are driven at least in part by international financing that requires implementation of certain standards or obligations.

The development of relevant national strategies and action plans, such as sustainable development policies, strategies and action plans, ensure better cross-sectoral coordination and more integrated decision-making. A typical OSCE participating State may adopt various strategic documents on environmental aspects relevant to water governance issues, including an Environmental Protection Strategy, an Environmental Action Plan, the Strategy and Action Plan for the Protection of Biological and Landscape Diversity, the Waste Management Strategy, and the Waste Management Plan, among others. In recent years, states have embarked upon the adoption of adaptation strategies and plans to

3.3.4 Permitting

A fully integrated permitting system including inter alia permitting related to resource (including water) use and emissions into the environment provides a clear framework for decision-making related to water governance. Best practices in integrated permitting are promoted through various mechanisms, including OECD Guidelines such as the “Guiding Principles of Effective Environmental Permitting Systems,”⁵⁰ and permitting and enforcement networks such as INECE, IMPEL, and ECENA.

Standards for permitting, inspection and enforcement with regards to facilities covered under integrated permitting frameworks include methodologies for coordination with stakeholder agencies. “Depending upon the requirements of national legislation and institutional arrangements, the permitting authority needs to consult other authorities with related responsibilities or interests (the environmental inspectorate, water and health authorities, sectoral ministries, local authorities, etc.).”⁵¹

Nevertheless it is still typical for water permitting to be separate from other aspects of integrated permitting in some countries. This presents a level of difficulty in coordination. The water sector also tends towards a larger number of permits for various aspects of water use, including the manner, conditions and scope of water use, manner, conditions and scope of wastewater discharge, storage and release of hazardous and other substances that might pollute water, and conditions for other works influencing the water regime. A water permit for structures and works is

⁵⁰ OECD (2007).

⁵¹ Principle 5 of OECD’s Guiding Principles of Effective Permitting Systems, <http://www.oecd.org/environment/outreach/37311624.pdf>

issued by the body, usually at national level, that issues the water consent. The water permit is issued for a specific period of time.

In the EU context, Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control) (IPPC) sets environmental standards for permitting of industrial activities with a major pollution potential, defined in Annex I to the Directive (e.g., energy industries, production and processing of metals, mineral industry, chemical industry, waste management, rearing of animals; with special provisions related to energy production such as combustion plants (≥ 50 MW); waste incineration or co-incineration plants; installations producing titanium dioxide). Certain installations are regulated under the Seveso Directive due to the potential for major accident hazards.

Non-EU states have also adopted integrated permitting. According to Serbia's IPPC Law new installations must obtain permits immediately, before commencing operations, whilst existing installations must get permits by 2015. In Bosnia and Herzegovina IPPC is partly transposed but the legislation cannot be implemented because of a lack of regulations. Montenegro is near full transposition with only adjustments for existing installations lacking.

3.3.5 Decentralization and water user associations

The application of the subsidiarity principle has accelerated the trend towards shifting responsibility for financing of environmental and other infrastructure towards decentralized local government, particularly for wastewater collection and treatment infrastructure. The local level of governance (as addressed by national policies and by local decision-making and rules) is important for providing a balanced approach to protection and rational use of water and other natural resources by reducing the negative externalities arising from human settlements such as in urban wastewaters, household and municipal waste, and urban sprawl.

On the other hand, subsidiarity recognizes the appropriateness of decision-making at different levels depending on the level of the problem. In areas and sectors with water scarcity, conflicts may arise between water availability and water demand within and beyond national borders. Their resolution requires policy decisions with a degree of national coordination and international cooperation.

One tool of decentralized water governance at local level are water user associations, a self-governed body of water users, ideally financed by member payments, that takes care for operation and maintenance of local water management systems. Water user associations are natural stakeholders in the development of water policy and in reforms to relevant legislation, also playing an important role in stakeholder engagement through participation in BMOs. In some cases the water user associations occupy a substantial proportion of the seats

within BMOs. Several countries have specific laws related to water user associations, including Armenia, Kyrgyzstan and Tajikistan.⁵²

While public needs may be better identified at the local level, greater decentralisation has to be managed so as to avoid fragmentation of efforts and insufficient capacity and resources at the local level. International organizations and experts have helped countries address systemic problems due to inability to coordinate between levels of authorities. Slovenia has taken steps towards addressing imbalances between the central and municipal level by filling the gap in regional authority through innovations. As stated in the 2012 Environmental Performance Review⁵³:

“The adoption of the Balanced Regional Development Act in 2000 encouraged good co-operation among Regional Development Agencies (RDAs), councils of regions and associations of municipalities and towns. Greater co-operation among municipalities, and their co-operation with the Ministry of Environment and Spatial Planning (MESP), is needed to strengthen the effectiveness and efficiency of environmental services and spatial planning policies.”

This brings attention to the fact that local and national authorities sometimes have different priorities (e.g., local tourism vs. national energy strategy; or local agricultural interests vs. national biodiversity strategy). This is nowhere more apparent than in cases of transboundary river basins where permitting plays a role in the availability of water to downstream users. Permits related to large agricultural investments, for example, can create either scarcity or flooding downstream.

3.3.6 Financing and cost recovery

Cost recovery is an important element of water governance, and introducing the user pays principle is often seen as a means of encouraging conservation and rational use. While pricing schemes need to take into account considerations of equity and access and vary throughout the OSCE area, some kind of pricing for water services is widely applied, for example through the WFD. It is particularly useful in regions of water scarcity. Armenia, for example, has an effective pricing mechanism.⁵⁴ In other countries, the implementation faces still challenges and shows the need to take country-specific circumstances into account.

Payment for Ecosystem Services (PES) schemes can provide financing for the protection and enhancement of water related ecosystem services such as carbon sequestration, landscape beauty and biodiversity conservation. For PES schemes to be implemented effectively, it is important to create mechanisms for valuing (or at least measuring) services that are currently not valued by markets. A sustainably operating fishpond owner, for example, might contribute to nutrient retention,

⁵² UNECE and OECD (2014).

⁵³ OECD (2012a).

⁵⁴ UNECE and OECD (2014).

carbon sequestration and protection of rare birds. But without a PES scheme, society may not reward or recognize the owner's production of "public goods". PES schemes identify how services can be provided in a cost-effective way and determine types and amounts of compensation to land managers (e.g. farmers, aquaculturists) for providing services.

The EU integration process includes possibilities for financing activities aimed at reaching integration goals. These possibilities differ in forms and magnitude of funding depending on whether the applicants are EU Member States, EU candidate countries or potential candidate countries. The EU LIFE program provides funding for environment and nature conservation and biodiversity for Member States, whereas the Cohesion Fund supports projects related to environment, energy efficiency and renewable energy. For the non-EU countries the Instrument for Pre-Accession Assistance (IPA) has replaced earlier European Union programmes and financial instruments for candidate countries or potential candidates like ISPA, PHARE and CARDS. IPA provides support in areas such as cross-border cooperation, regional development and environment.

Implementation of the water-related directives, especially the UWWT Directive, requires substantial investments. In the case of EU Member States the investments may be backed by EU funds such as the Cohesion Fund for the period 2014-2020. An example of a Cohesion Fund project relevant to water management is the water supply and sewerage system for Slavonski Brod, Croatia. The objective of the investment from the EU's Cohesion Fund is to improve the water system in the Danube River Basin by improving the reliability of the water supply and ensuring more effective treatment of wastewater. The project will help protect the environment and ensure conformity to EU environmental standards.⁵⁵

The EU's Common Agricultural Policy provides direct payments to farmers. In return, farmers are obliged to carry out agricultural activities in conformity with standards including food safety, environmental protection, animal welfare and the maintenance of land in good environmental and agricultural condition. One of the aims under the 2014-2020 rural development policy is ensuring sustainable management of natural resources.

The principle of cost recovery is important to balance water use in many sectors like agriculture, industry, energy, and public services (households) to achieve cost-efficiency and even to establish cross-sectoral cooperation among providers and consumers of water services. As an example, in its attempts to apply the polluter pays principle, Slovenian legislation applies an environmental tax on all water users to aim at full recovery of environmental and resource costs.⁵⁶

⁵⁵ European Commission (n.d.).

⁵⁶ European Commission (2012).

3.3.7 Information and participation

Policy and decision-making need to be based upon comprehensive, complete and reliable information. Monitoring capacities vary widely throughout the OSCE area. It is rare to find transboundary, basin-level monitoring systems, but national monitoring systems are gradually becoming better integrated. Much of the OSCE area is still characterized by highly specialized bodies that possess specific information relevant to their responsibilities, with few mechanisms for sharing of information, accessibility of information (particularly by the public) and comparability of information. Some monitoring capacities have improved (e.g., water quality monitoring in the framework of the ICPDR), while others remain basic.

The Aarhus Convention has already been mentioned in the context of the role of participation in integrated decision-making. The Aarhus Convention provides an additional measure of support for coordination and cooperation across sectors. As shown by several cycles of national implementation reporting, many OSCE participating States have developed extensive practice in implementation of provisions related to access to environmental information and public participation in environmental decision-making. The scope and definitions in the Aarhus Convention are broad enough to encompass most kinds of activities that are relevant to water governance and public participation.

As specifically applied to water resources management, transparency and participation are among the most essential elements of good water governance on the national level. Procedures and institutional arrangements have been expanded in beneficiary regions in consequence. For example, BMOs usually operate with the involvement of stakeholders including representatives of water users and NGOs. In some countries, such as Ukraine, the BMOs are the main forum for the involvement of civil society in water governance and water management issues. Standards for active dissemination of information to the public on water related issues can be found in the legislation of many states, including Moldova within the EECCA region while similar legislation is under preparation in Azerbaijan, Kazakhstan and Turkmenistan. Specific notice requirements allowing for public participation can be found in legislation related to particular types of water-related decision making in Armenia. The law also provides possibilities of appeal of final decisions on water use permits by members of the public.⁵⁷

⁵⁷ UNECE and OECD (2014).

4. OSCE commitments in the field of water governance

The OSCE has been concerned with the management of natural resources as an aspect of security for decades. Economic and environmental matters have always been an integral part of the OSCE agenda, reflecting the Organization's comprehensive approach to security. Challenges and opportunities related to water remain high on the OSCE's agenda. The 2015 Serbian Chairmanship of the OSCE has made it a priority by dedicating this year's Economic and Environmental Forum - the organization's annual high-level event on select economic and environmental issues that can impact security - to water governance.

- 1975 Helsinki Final Act

The Helsinki Final Act (1975) called for harmonization of policies in relation to the environment, as well as joint research on specific scientific and technological problems related to the human environment.

Under Chapter 5 (Environment), the participating States included the following area of cooperation:

“Prevention and control of water pollution, in particular of transboundary rivers and international lakes; techniques for the improvement of the quality of water and further development of ways and means for industrial and municipal sewage effluent purification; methods of assessment of fresh water resources and the improvement of their utilization, in particular by developing methods of production which are less polluting and lead to less consumption of fresh water.”

Protection of the marine environment is another topic of cooperation.

The Helsinki Final Act also marked agreement on the methods of cooperation on environmental issues, including scientific and technical exchanges, organization of conferences and other events, joint implementation of programmes and projects, harmonization of standards and norms, consultations, promoting the progressive development of international law, supporting the implementation of relevant Conventions, active cooperation with UNECE, UNEP and other bodies, and improving access to information and to the services of international organizations.

- 1989 Sofia CSCE Meeting on the Protection of the Environment

At the meeting on the Protection of the Environment of the CSCE in Sofia in 1989, participating States recommended, inter alia, that the UNECE elaborate a framework convention on the protection and use of transboundary watercourses and international lakes. The report of the conclusions of the meeting set forth the basic principles of such an instrument, many of which are relevant to water governance. In particular, the introduction of mechanisms such as environmental impact assessment and licensing schemes, improved monitoring and exchange of

information, establishment of transboundary water commissions, application of liability rules and the polluter pays principle, harmonization of standards, and prior consultation all play an important part in implementing good water governance.

- 1990 Paris Second CSCE Summit of Heads of State or Government

The Paris Summit Document, “Charter of Paris for a New Europe,” included the following: “We recognize the urgent need to tackle the problems of the environment and the importance of individual and co-operative efforts in this area. We pledge to intensify our endeavours to protect and improve our environment in order to restore and maintain a sound ecological balance in air, water and soil. Therefore, we are determined to make full use of the CSCE as a framework for the formulation of common environmental commitments and objectives.”

- 1992 Helsinki Third CSCE Summit of Heads of State or Government

The Helsinki Summit Document, “The Challenges of Change,” included this paragraph within the summit decision on environment: “The participating States will intensify the existing and growing co-operation between them in order to restore and maintain a sound ecological balance in air, water and soil and they recognize their individual and common commitment towards achieving these goals.”

- 1999 Istanbul 6th OSCE Summit of Heads of State or Government

The 1999 Istanbul Summit included a paragraph in the declaration specifically directed towards the situation in Central Asia, which recognized “the importance of addressing economic and environmental risks in the region, such as issues related to water resources, energy and erosion.”

- 2001-2002 Tenth Economic Forum on “Co-operation for the sustainable use and the protection of the quality of water in the context of the OSCE”

Belgrade

As described in MC.DOC/1/02: “**The First Preparatory Seminar of the Tenth Economic Forum** took place in Belgrade on 5 and 6 November 2001 and was dedicated to the protection and use of watercourses and international lakes. The seminar highlighted, in particular, several ways to reinforce stability in the Balkans, developing regional co-operation mechanisms with a view to minimizing risks to security caused by environmental threats to water resources. The crucial role of the civil society in environmental protection awareness and information dissemination was also noted. A set of recommendations was presented by the participants calling on the OSCE to intensify transboundary and regional co-operation on shared water resources.”

Zamora

As described in MC.DOC/1/02: “During **the Second Preparatory Seminar**, held in Zamora on 11 and 12 February 2002, the debate focused on successful experiences in the context of transboundary co-operation over water resources in the OSCE area, such as the Portuguese-Spanish Agreement. In this context, the seminar was seen as an opportunity to exchange information, experiences and best practices. Special emphasis was given to the EU Water Framework Directive, particularly in the context of enlargement and integration processes, and the role of NGOs in the implementation of the Directive was stressed. The recommendations made by the participants reflected the role of the OSCE in co-ordinating and facilitating processes, as well as its potential in generating confidence-building measures among States.”

Baku

As described in MC.DOC/1/02: “**The Third Preparatory Seminar** was organized in Baku on 15 and 16 April 2002 and enabled consideration to be given to issues related to regional co-operation and technical assistance, specifically in the Caspian and Black Sea regions. The Baku Seminar represented in itself a confidence-building measure, stressing the importance of co-operation mechanisms related to the use and the protection of water resources in the above-mentioned regions. It was also considered to be a contribution to economic development, social cohesion and environmental protection. In the context of the recommendations and concrete proposals arising from the debates, the Portuguese Chairmanship suggested developing management plans through the twinning of river basins, in order to facilitate both the exchange of know-how and the tackling of concrete problems, and to enable joint capacity building.”

Prague

The Tenth Meeting of the OSCE Economic Forum took place in Prague, from 28 to 31 May 2002, and was devoted to the “Co-operation for the sustainable use and the protection of the quality of water in the context of the OSCE”. During the Forum, discussions focused on issues, actors and instruments for co-operation in the context of water. They confirmed that the sharing of information and experiences among the participating States represented an essential contribution to the identification of available instruments to prevent and solve conflicts. In addition, co-operative debate on issues related to the use and protection of water resources was seen as an extremely important element in defining and promoting economic and environmental policies in the OSCE area. Such policies were potential confidence-building tools and generators of good neighbourly relations, contributing to the implementation of the broad OSCE approach to security.

-2002 Porto 10th OSCE Ministerial Council

At the 10th Ministerial Council Meeting in Porto in 2002, the Portuguese Chairmanship reviewed the achievements, including those in the area of water resources in the concluding document – Porto Ministerial Declaration on

Responding to Change (MC.DOC/1/02). The Declaration highlighted that the Tenth Economic Forum's theme related to water resources, as a topical issue for security in the twenty-first century, and focused on "Co-operation for the sustainable use and protection of the quality of water in the context of the OSCE". The Portuguese Chairmanship considered that the OSCE, acting as a facilitator and a catalyst, could "add a very significant value to the international debate on water resources, taking into account the Organization's comprehensive approach to security and stability." Quoting from the document:

"Addressing the theme of water also contributed to enhancing the implementation of the Platform for Security Co-operation, by helping to create synergies and to avoid duplication. This was achieved through the active contribution of other international organizations, particularly in the Economic Forum and Preparatory Seminars, in respect of the definition and promotion of economic and environmental policies in the OSCE area. In the same way, the wide participation in these events gave impetus to the co-ordination and co-operation within the OSCE by the involvement of participating States. It also contributed to the development of dialogues with Mediterranean and Asian Partners, as well as with civil society, specifically NGOs and academics."

- 2003 Maastricht 11th OSCE Ministerial Council

The 2003 Maastricht Strategy Document for the OSCE Economic and Environmental Dimension referred to the need for co-operation for sustainable management of shared natural resources, including water.

- 2007 Madrid 15th OSCE Ministerial Council

In the 2007 Madrid Declaration on Environment and Security (MC.DOC/4/07), participating States reaffirmed their commitment to improve environmental governance by, inter alia, strengthening the sustainable management of water. They also adopted a Ministerial Decision on Water Management that emphasized closer collaboration with the UNECE and other international organizations in the sphere of water management, and called upon participating States to enhance co-operation on water management, inter alia through accession to the relevant conventions.

- 2008 16th Economic and Environmental Forum on "Maritime and inland waterways co-operation in the OSCE area: Increasing security and protecting the environment"

At the 16th Ministerial Council in Helsinki, in 2008, with the Ministerial Council Decision on the Follow-up to the Economic and Environmental Forum on Maritime and Inland Waterways Co-Operation (MC.DEC/9/08), participating States emphasized "that maritime and inland waterways co-operation is best enhanced through an integrated approach taking account of security, economic and environmental aspects," and the Ministerial Council Decision encouraged

participating States “to approach the issue of waterways co-operation in synergy with management of water resources.” Further, the Ministerial Council Decision urged participating States to “promote good governance and transparency and invite[d] them to include all stakeholders, including the business community, civil society and academia, in the policy debate on maritime and inland waterways co-operation where applicable, and to promote public-private partnership.” The Decision made specific mention of the work done under the ENVSEC Initiative.

- 2014 22nd Economic and Environmental Forum on “Responding to environmental challenges with a view to promoting co-operation and security in the OSCE area”

Disaster Risk Reduction (DRR) was a major focus of discussion in the 22nd Economic and Environmental Forum. In the Review Report written by UNDP, water and climate (hydro-meteorological origin) related disasters were included as one of the five key prevailing disasters in the OSCE area. Water played a key role in the identification of climate change and security scenarios in three regions: Western Balkans, Southern Caucasus and Central Asia. The identification of water governance as the topic for the 2015 EEf followed the joint Swiss-Serbian workplan for their consecutive chairmanships 2014-2015.

5. Implementation of the OSCE commitments in the field of water governance

5.1 Adherence to international legal instruments

Following the 2007 Madrid Declaration, OSCE participating States have increased their adherence to international legal instruments relevant to water governance. Selected relevant instruments and their ratification or acceptance by OSCE participating States **since 2007** are set forth as follows:

UN Watercourses Convention – out of 16 OSCE participating States that are parties to this Convention, nine (9) have ratified/accepted/acceded to it since 2007.

UNECE Water Convention – out of 41 OSCE participating States that are parties to the Convention, five (5) have ratified/accepted/acceded to it since 2007.

UNECE Industrial Accidents Convention – out of 42 OSCE participating States that are Parties to the Convention, four (4) have ratified/accepted/acceded to it since 2007.

Aarhus Convention – out of 48 OSCE participating States that are Parties to the Convention, six (6) have ratified/accepted/acceded to it since 2007.

Espoo Convention – out of 47 OSCE participating States that are Parties to the Convention, three (3) have ratified/accepted/acceded to it since 2007.

SEA Protocol – out of 37 OSCE participating States that are Parties to the Protocol, 18 have ratified/accepted/acceded to it since 2007.

Water and Health Protocol – out of 40 OSCE participating States that are Parties to the Protocol, five (5) have ratified/accepted/acceded to it since 2007.

Amendments to articles 25 and 26 of the UNECE Water Convention – Out of the 37 states accepting the amendments, 30 have done so since 2007.

5.2 Negotiation of agreements and establishment of joint bodies

The 1989 CSCE Meeting on the Protection of the Environment laid the groundwork for the adoption of the Water Convention and laid out many of the principles and requirements that would be elaborated in the Convention text. The OSCE and UNECE have been mutually supportive in promoting implementation of the Convention, including in particular through cooperation within the OSCE area on the establishment of joint bodies such as river basin commissions with authority to facilitate the implementation of bilateral or multilateral arrangements on the joint management of transboundary watercourses or international lakes.

OSCE participating States have steadily made progress in negotiating agreements applying the river basin approach. Developments in the EU mainly are driven by the requirements to implement relevant EU legislation including the WFD and the Floods Directive. EU legislation requires member states to establish international river basin districts applying the river basin approach.

In 2008, Portugal and Spain revised the 1998 Albufeira Convention on Cooperation for the Protection and Sustainable Use of the Waters of Portuguese-Spanish Hydrographic Basins to change water allocations on the basis of increasing flow variability, among others due to climate change.⁵⁸

An important recent development involving the United States of America is Minute 319, a decision pursuant to the 1944 agreement between the US and Mexico on the Colorado River. Minute 319 was signed in 2012 and allows Mexico to store some water in Lake Mead, the giant reservoir behind Hoover Dam, establishes new rules for sharing water in times of drought, and commits the two nations to return some flow to the delta as part of a five-year pilot project.

A 2009 study by the UNECE surveyed the 23 intergovernmental transboundary agreements adopted in the EECCA region from the beginning of the

⁵⁸ UNECE (2015).

1990s to that time.⁵⁹ Since that report was issued, there have been several developments both in EECCA and in South-Eastern Europe, as follows:

1. Dniester (Republic of Moldova, Ukraine) – an earlier agreement for transboundary cooperation between Ukraine and Moldova (1994) at the level of plenipotentiaries is being replaced by a new treaty, signed in 2012 but not yet ratified by Ukraine, that will result in the establishment of the bilateral Dniester Commission.

2. Dnieper/Dnipro (Belarus, Russian Federation, Ukraine) – A UNDP/GEF project has supported discussions on a new multilateral agreement that would replace earlier agreements involving plenipotentiaries. The new agreement would establish a river basin commission. Drafting is at an early stage. Belarus and the Russian Federation have a joint commission in place on frontier waters, but Ukraine is not a party to the agreement.

3. Zapadnaya Dvina/Daugava (Belarus, Russian Federation, Latvia) – the states cooperated in the negotiation of a draft agreement. Renewed efforts are needed to take the process forward.

4. Neman/Nemunas (Belarus, Russian Federation, Lithuania) – in the context of its transboundary pilot projects on climate change adaptation, the Water Convention (in cooperation with the ENVSEC Initiative and others) has conducted a series of workshops and conferences aimed at dialogue on enhancing cooperation on this river basin. While a tripartite agreement has been discussed, draft arrangements for bilateral cooperation between Lithuania and Belarus are under consideration.

5. Kura/Aras (Armenia, Azerbaijan, Georgia, Iran, Turkey) – In the Kura basin, initiatives to develop basin-level institutional arrangements are still at an early stage. The first steps taken in this direction have been negotiations on a draft agreement for bilateral cooperation between Georgia and Azerbaijan, which share the main channel of the Kura River. These negotiations have proceeded through several sessions. A very advanced version of a final agreement is currently (as of August 2015) with the Ministries of Foreign Affairs of both countries. The finalization and signing of the agreement are expected soon.

6. Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan) – Progress has been made in gradually bringing Afghanistan closer to water co-operation in the Aral Sea basin by first bilateral steps between Tajikistan and Afghanistan, which has been supported by UNECE and OSCE.

7. Drin Basin (Albania, Greece, the former Yugoslav Republic of Macedonia, Kosovo⁶⁰ and Montenegro) – The Drin Basin consists of several lake complexes and

⁵⁹ UNECE (2009).

river sub-basins in a mountainous region. On the basin level, coordinated action began with the signing of the Shared Vision for the sustainable management of the Basin and a related Memorandum of Understanding (MoU) (Tirana, Albania, 25 November 2011) by the Ministers of the water and environmental management competent ministries of the riparian states. This MoU contemplates the future negotiation of a multilateral agreement covering the whole basin based upon the Water Convention and the EU WFD. The Ministers established the Drin Core Group in 2012 with a mandate to coordinate actions for the implementation of the MoU. The Global Environmental Facility has supported transboundary cooperation efforts aimed at parts of the basin, e.g., Lake Prespa and Shkoder/Skadar Lake and through the project “Enabling Transboundary Cooperation and Integrated Water Resources Management in the Extended Drin River Basin” will facilitate sustainable management of the Drin Basin on the basis of the MoU. The UNECE and the Global Water Partnership – Mediterranean (GWP-Med) support MoU implementation in the framework of the Petersberg Phase II / Athens Declaration Process and ENVSEC.

The Shkoder/Skadar Lake is covered by a joint commission set up by Albania and Montenegro, while an agreement has been signed on Lake Prespa between Albania, the former Yugoslav Republic of Macedonia and Greece, but the prospective joint body has not yet been established.

The UNECE has recently developed principles for effective joint bodies for transboundary water cooperation proposed to be adopted by the Meeting of the Parties in Budapest in November 2015. See Box 3.

BOX 3 – Principles of effective joint bodies: Factors supporting intersectoral coordination

As institutional arrangements for transboundary water cooperation are very diverse and their practice has been established in specific contexts, making general conclusions or recommendations about their set up or operation is challenging.⁶¹ Even against this backdrop, certain principles of organization and activities that generally increase the efficiency of joint bodies and contribute to reaching an advanced level of cooperation between the riparian States have been identified. Some of these “principles of effective joint bodies,”⁶² elaborated as outcomes of two UNECE workshops on joint bodies in 2013 and 2014, touch directly upon scope of cooperation and intersectoral coordination, notably the following: Broad competence of a joint body, which allows for addressing in a complex way, on the basis of IWRM, the entire spectrum of issues related to the sustainable development, management, use (including infrastructure) and protection of transboundary waters;

- (a) A sufficiently broad and complete representation of national authorities in the joint body, implying participation beyond the water management authorities to include

⁶⁰ All references to Kosovo, whether to the territory, institutions or population, in this text should be understood in full compliance with United Nations Security Council Resolution 1244.

⁶¹ UNECE (2009)

⁶² http://www.unece.org/fileadmin/DAM/env/documents/2014/WAT/06Jun_25-26_Geneva/Informal_doc_2_Principles-of-joint-bodies_final.pdf

- representatives from environment, fishery, agriculture, transport, health, energy, hydrometeorology authorities, economy and finance ministries, as appropriate;
- (b) Certain flexibility of the agreement establishing the joint body, allowing to progressively develop cooperation, in terms of scope, mandate and riparian States involved;
 - (c) Regular exchange of information and consultation mechanisms;
 - (d) Facilitate the assessment of impacts (transboundary and inter-sectoral) from developments, and of looking for an agreement about them between the riparians. Providing a framework for monitoring the long-term impacts (e.g. infrastructure); and
 - (e) Mechanisms for public participation and stakeholder involvement.

Source: UNECE, WG.1/2015/INF.2

5.2.1 OSCE support to transboundary water co-operation

The OSCE has successfully implemented a series of projects aimed at improving water governance in cooperation with its partners in the Environment and Security Initiative (ENVSEC, see www.envsec.org). Such projects have been implemented in the Sava, Dniester, Kura and Chu-Talas basins. ENVSEC builds upon the common themes within the mandates of the organizations involved. In the case of the OSCE, the ENVSEC Initiative facilitates cooperation inter alia in an area where the organization has a long and successful track record, based upon a line of decisions and strategies recognizing the key role that water resources and water governance play in security and cooperation. Some examples across the sub-regions illustrate its successes:

In cooperation with the Water Convention Secretariat, the OSCE has been supporting its participating States in the development of bilateral water agreements and in the establishment or upgrading of several basin-level institutions such as river basin commissions. These basins and the countries involved include the Kura (bilateral cooperation between Azerbaijan and Georgia), Chu-Talas (Kazakhstan, Kyrgyzstan), Sava (Bosnia and Herzegovina, Croatia, Serbia, Slovenia and Montenegro) and Dniester (Republic of Moldova, Ukraine).

South-Eastern Europe

In the early 2000s, the OSCE joined other major donors under the auspices of the Stability Pact for South Eastern Europe in providing support to Slovenia, Croatia, Bosnia and Herzegovina, and Serbia and Montenegro in the development of the Sava Framework Agreement, an integral part of the reconciliation process. The first meeting of the Interim Sava Basin Commission (ISBC) took place at the OSCE premises in Vienna in April 2003. Further OSCE support focused on establishing networks among local actors from the Sava river basin and on encouraging the involvement of civil society sectors and the public in the environmental protection of the Sava River.

Eastern Europe

Since 2004, OSCE, UNECE and UNEP have implemented projects bringing together governmental agencies, non-governmental organizations and academia on both sides of the Dniester River to stimulate transboundary water co-operation. An earlier agreement for transboundary cooperation between Ukraine and the Republic of Moldova (1994) at the level of plenipotentiaries will be replaced with a new treaty.

On 29 November 2012 in Rome at the Meeting of the Parties to the UNECE Water Convention a bilateral Dniester River Basin Treaty was signed by Ukraine and the Republic of Moldova. The Treaty is a pioneering example of a bilateral instrument for integrated river basin management in post-Soviet countries, helping set up a joint river basin commission to steer activities in the fields of monitoring, fish conservation, pollution prevention, and emergency response. After the ratification by the Republic of Moldova in 2013, the Treaty's ratification by Ukraine is expected soon.

As part of an OSCE-led ENVSEC project focusing on Eastern Europe, Southern Caucasus and Central Asia in the area of climate change, financed by the Instrument for Stability of the European Commission and co-funded by the Austrian Development Agency, the Dniester river basin is a pilot case to develop and initiate implementation of a basin-wide climate change adaptation strategy in agreement with relevant authorities. This strategy entitled *Strategic Framework for Adaptation to Climate Change in the Dniester River Basin* was developed and endorsed by the Republic of Moldova and Ukraine in April 2015. In this context, key stakeholders will also be trained on security impacts of climate change as well as on conflict prevention measures related to climate change adaptation.

South Caucasus

In the framework of the ENVSEC Initiative, the OSCE in collaboration with UNECE has been facilitating since 2010 several rounds of bilateral consultations between Azerbaijan and Georgia for the development of an "Agreement between the Government of the Republic of Azerbaijan and the Government of Georgia on Co-operation in the Field of Protection and Sustainable Use of the Water Resources of the Kura River Basin" through two projects. A very advanced version of a final agreement is currently (as of August 2015) with the Ministries of Foreign Affairs of both countries. It is expected that the agreement can be finalized and signed in the near future.

Central Asia

In Central Asia, the OSCE together with UNECE has since 2003 supported the establishment and operation of a bilateral water commission, contributing to the co-operation between Kazakhstan and Kyrgyzstan in the basins of the Chu and Talas Rivers. The first project culminated with the inauguration of the Chu and Talas

Commission, in July 2006, and was followed by activities to foster stakeholder participation.

In July 2015, the OSCE Gender Section and the Office of the Co-ordinator of OSCE Economic and Environmental Activities (OCEEA) in co-operation with the Regional Environmental Centre for Central Asia (CAREC) organized a three-day regional training workshop on gender mainstreaming and conflict resolution in water governance, training more than 30 water professionals from state agencies, NGOs, research institutes, water users associations and donor organizations from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Afghanistan in gender-mainstreaming and gender-sensitive conflict resolution with a focus on water.

The OSCE Office in Tajikistan in cooperation with UNECE is actively fostering co-operation between Tajikistan and Afghanistan on water issues. As one activity, in January 2013, the OSCE Office in Tajikistan, in co-operation with the Ministry of Water Management and Land Reclamation of Tajikistan, organized a one-day workshop on common water management and environmental challenges in Afghanistan and Tajikistan. The workshop trained 70 participants from Tajikistan and Afghanistan representing foreign ministries, other relevant ministries and agencies dealing with water resources, agriculture, environmental protection and disaster management, as well as staff of embassies and international organizations active in water management and environment in Central Asia on water management, hydrological and ecological monitoring, disaster risk management, environmental degradation and climate change, with a special attention given to the upper Amu-Darya river basin. The initiative was part of the OSCE Office's efforts to facilitate transboundary water co-operation mechanisms between Tajikistan and Afghanistan along the Panj River, with the aim to contribute to the improvement of integrated water resources management in Tajikistan and address water management, environmental protection and energy security challenges at national and regional level, with a particular attention to Afghanistan.

Box 4: Transboundary cooperation in climate change adaptation

As 60% of rivers in the world cross national boundaries, transboundary cooperation is necessary to prevent negative impacts of unilateral activities and to support the coordination of adaptation measures at the river-basin or aquifer level and joint development of more cost-effective solutions. It is also useful to make sure they offer benefits to all riparian Parties, for example by sharing the costs and benefits of adaptation measures or by reducing uncertainty through the exchange of information. Transboundary cooperation can broaden the knowledge base and enlarge the range of measures available for prevention, preparedness and recovery. The need for cooperation in climate change adaptation can even be an incentive for general cooperation in transboundary basins. International legal frameworks such as the UNECE Water Convention and the UN Watercourses Convention help countries to jointly adapt to climate change.

Under the UNECE Water Convention, a *Guidance on Water and Adaptation to Climate Change* was developed by the Task Force on Water and Climate in 2007-2009. It provides step-by-step advice to decision makers and water managers, especially in transboundary basins on how to assess the impacts of climate change on water quantity and quality, how to perform risk assessment, how to gauge vulnerability and how to design and implement appropriate adaptation strategies. In 2015, a collection of lessons learned and good practices on climate change adaptation in transboundary basins was published.⁶³

The programme of *pilot projects* on adaptation to climate change in transboundary basins, implemented mostly in the framework of ENVSEC in cooperation with OSCE, UNDP etc. aims to strengthen the capacity to adapt to climate change of shared basins. The programme also creates positive examples demonstrating the benefits of transboundary cooperation in adaptation planning and implementation. The pilot projects usually include joint impact and vulnerability assessment and the development of a basin-wide adaptation strategy.

The collection and exchange of experience is ensured through a *platform for sharing experience* on adaptation to climate change in transboundary basins, which includes regular meetings and annual workshops as well as a web-based platform.

From 2013, this programme has been broadened to include additional basins from several regions of the world. Currently, the *global network of basins working on adaptation to climate change* includes the basins of Chu and Talas, Congo, Danube, Dniester, Drin, Mekong, Meuse, Neman, Niger, Rhine, Sava, Senegal, the Amur / Argun / Daurisky Biosphere Reserve and the Sahara and Sahel Observatory / Consultation Mechanism of the North Sahara Aquifer System.

The programme of pilot projects has had some remarkable achievements. For example, in the Dniester and Neman basins, transboundary adaptation strategies have been prepared and endorsed by the basin stakeholders. In the Dniester basin, adaptation measures beneficial from the transboundary perspective have been implemented. In the Neman basin, the project has led to a revival of transboundary cooperation between Lithuania and Belarus.

5.3 Enhancing water governance on the national level

5.3.1 Water governance related projects at national level implemented with the involvement of the OSCE

The OSCE has partnered with the Secretariat of the Water Convention in carrying out a number of projects related to water governance issues in the last several years.

The OSCE environmental activities on the regional level are carried out by the OCEEA. On the national level, OSCE field operations are in charge. Recent activities of the OSCE field operations to advance good water governance include, but are not restricted to, the following:

⁶³ UNECE (2015).

- Training courses on IWRM by the OSCE Programme Office in Astana
- Support to Water User Associations by the OSCE Centre in Bishkek
- Support to river basin councils and a national water forum of stakeholders from government, academia and private sector by the OSCE Programme Office in Astana
- Promotion of and training for community engagement on flood risk management by the OSCE Mission to Serbia
- A summer school and joint river expeditions for young students from both banks of the Dniestr/Nistru River by the OSCE Mission to Moldova

Knowing of the important role an active and well-informed civil society can play to reduce environment and security risks, the OSCE has over a decade supported the establishment of a network of currently 59 Aarhus Centres in 14 countries. Among their wide range of activities they play a key role in facilitating participation, and access to information, on water issues.”⁶⁴

- Public Participation in water governance

The Aarhus Convention provides a framework in international law for environmental governance, and thereby promotes good water governance. To support the implementation of the Convention, since 2002 the OSCE has supported the establishment of Aarhus Centres in various locations within the OSCE area. These Aarhus Centres provide practical tools that the public can use to make use of its rights to information, participation and justice. Support to the Aarhus Convention’s implementation is at the heart of OSCE’s mission to work for security through cooperation by linking human and environmental dimensions of security. The OSCE has recognized that civil society must be involved in order to strengthen cooperation among participating States on security issues, and the Aarhus Centres are aimed at building the capacity of civil society to take part in civic life. The Aarhus Centres themselves are venues where members of the public can meet to discuss matters of environmental concern, thus strengthening environmental governance.⁶⁵ As of 2015 there are 59 Aarhus Centres in 14 countries in the OSCE area: Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Republic of Moldova, Montenegro, Serbia, Tajikistan, Turkmenistan, Ukraine.

An example of the work of the Aarhus Centres relevant to water governance is the regional roundtable held 25-26 March 2015 in Tirana, Albania at which more than 40 representatives of central and local governments, Aarhus Centres and civil society from Albania, Bosnia and Herzegovina, Montenegro and Serbia discussed the challenges of public participation in trans-boundary water management and in trans-boundary Environmental Impact Assessment. The roundtable discussions,

⁶⁴ www.osce.org/water

⁶⁵ See OSCE, 2012.

which were organized by the OCEEA and the OSCE Presence in Albania, generated a set of practical recommendations for the Aarhus Centres to foster public participation in trans-boundary water management and EIA processes in the South Eastern Europe region. It also provided the opportunity for networking among Aarhus Centres and the exchange of information and experiences.⁶⁶

6. Policy gaps and challenges regarding water governance in the OSCE area

Substantial progress has been made in water governance in the OSCE area. Examination of the progress made in several river basins in the OSCE area can produce several observations:⁶⁷

1. The legal and institutional framework of the UNECE Water Convention and experience in its implementation are sometimes not fully used in specific negotiations.
2. Finding the right level of cooperation for each step is a challenge, even in the case of framework agreements.
3. It is challenging to involve the right international actors in the respective basins.
4. Sometimes the need to involve NGOs and other stakeholders from an early stage is not fully appreciated.
5. It may be challenging to identify financial resources for transboundary water cooperation, but co-funding from riparian countries is essential.
6. Weak inter-agency cooperation within countries is frequently a bottleneck.

Particularly in Eastern Europe, South Caucasus, Central Asia and South-Eastern Europe there are opportunities for improving water governance. The UNECE/OECD review of the EUWI NPDs in the EECCA region has identified several challenges. These are summarized as follows:

1. There are still major gaps in the extent to which the river basin management principle is applied in the EECCA region. Some countries have yet to include the principle in the relevant law, while most countries have not adopted implementing legislation, rules, guidance, etc. Establishing basin boundaries and BMOs is a work in progress.
2. There is very little experience in equitably balancing the needs and interests of the various users of water resources; consequently there is yet very little trust and capacity within the nascent water governance systems in place. More work is

⁶⁶ See <http://www.osce.org/node/147146>.

⁶⁷ See e.g. Libert (2015).

needed also in ensuring that all relevant stakeholders are represented in the processes.

3. Institutional stability is an important precondition for developing fruitful vertical and horizontal cooperation. Stable institutions can retain the outcomes of capacity-building assistance, while unstable institutions may lose the benefits. The scale of reforms presents a challenge in providing effective and targeted capacity-building for those expected to perform new tasks, as well as to ensure financial stability in water management.

4. In many countries the information exchange between different agencies dealing with water management is lacking or poor. Moreover, the overall quality of information, for example through monitoring systems, may be poor, while even the data generated are not effectively used.

5. A major challenge continues to be the involvement of all interested stakeholders in water resources management, including taking the interests of women and marginalized social groups into account.

6. In resolving conflicts among water users and in considerations of “rational use,” the needs of ecosystems are in danger of being ignored. Conservation and restoration of the ecological health of rivers for the benefit of both humans and ecosystems/biodiversity is rarely prioritized.

7. New innovations such as climate change adaptation plans are important tools but are not yet commonly used.

Significant technical challenges for water governance remain in some OSCE participating States. Policy responses need to address and take into account these challenges in order to reach an effective level of good water governance. Among the technical challenges are “inadequate institutional structures, inefficient operations, lack of infrastructure (water and sewage-treatment plants), outdated water pipelines and sewage systems, lack of capacity and reduced financial capacity.”⁶⁸ These problems are less acute where infrastructure development funding is available such as the Cohesion Fund within the EU.

As regards Water Supply and Sanitation, the main challenges are: (a) the low efficiency of water systems, characterized by high energy consumption, labour use and non-revenue water (due to leakage or low collection rate for water bills); (b) lack of incentives for efficient water use by end-users (e.g., pricing problems); and (c) unsustainable business models for WSS suppliers; this is particularly the case when systems are oversized and worn out, costly to operate and maintain, and when operators fail to access regular revenue flows.⁶⁹

⁶⁸ Colakhodzic et al. (2011). See also UNECE and OECD (2014) in relation to the EECCA region.

⁶⁹ UNECE and OECD (2014).

Other technical challenges can be identified through Nexus-type assessment, which is useful in identifying certain governance gaps and considerations in enhancing water governance from a more complex, multi-sectoral perspective. Among the technical challenges that need to be addressed are the following:

- Secure minimum flow requirements for key demands so that direct and indirect water needs are met under times of stress
- Detailed and quantified mapping of water governance relationships between sectors and between countries.
- Resource efficiency that looks beyond sectoral mandates.
- Time frames of management planning scenarios that might react to or inform national economic, social, environmental (GHG mitigation and adaptation), energy, agricultural and other long-term strategy documents.
- Flexible management systems that move across sectors and countries.
- Investment in flexible infrastructure, such as multi-purpose dams, in order to allow for increased flexibility in operating and planning. With consultation of different stakeholders, changes may be required and flexible infrastructure facilitates this.
- Management planning sufficiently detailed to support all sectors meeting the goals of basin-level commitments
- Lack of communication between actors in different sectors including, for example:
 - Agricultural extension services so that they are water, energy, pollution and ecosystem aware
 - Authorities that can intervene to stop illegal activities (for example, sediment control requires coordination with enforcement authorities to stop illegal quarrying).⁷⁰

Finally, the Nexus approach has brought renewed attention to certain problems encountered in stakeholder participation in relation to water governance. Cross-sectoral and multi-sectoral participation can present challenges for a particular NGO or group of individuals tends to be focused on a narrow range of issues within their core interests. The resolution of conflicts between uses requires new sets of skills and expertise that will take time to build. Moreover, NGOs that attempt to have a representative character at such a complex level may give rise to challenges to their legitimacy and representativeness. There is little experience in aggregating the outcomes of public participation at specific decision-making levels in order to take these into account at more strategic levels.

Furthermore, recognizing that public participation becomes more difficult as processes become more complex leads to the need for diligence to ensure that public participation can be made effective. Deficient public participation in specific-

⁷⁰ See, e.g., UNECE, Draft Sava Nexus Assessment.

level decisions that are highly relevant to water governance, such as in connection with climate change adaptation, entails certain costs.

7. Recommendations

Good Water Governance

The OSCE should increase its support to its participating States in implementing the principles of good water governance, including but not limited to effective inter-sectoral co-ordination at local and national levels, transparent and accountable decision-making processes, stakeholder participation, data and information sharing, and sound regulatory frameworks. This support could be realized through project activities of the OSCE Secretariat as well as the OSCE field operations aiming at exchange of experiences and best practices, awareness-raising and capacity development on good water governance, and should be closely co-ordinated with other international actors active in this field.

Public participation and transparency

The OSCE should further strengthen its support for promoting broad public participation and transparency in water governance. The Aarhus Centres are well suited to be partners in such endeavours and could provide a platform for multi-sectorial and multi-stakeholder consultations on water issues at local and national levels, as well as at transboundary level through their Network. Therefore, the OSCE Secretariat and the OSCE field operations should continue to reinforce the capacities of Aarhus Centres related to good water governance at different levels. The OSCE should also increase its support for networking of Aarhus Centres within and across borders in shared river basins..

Water Diplomacy

Expand the role of the OSCE in water diplomacy. The OSCE, through its participating States and its executive structures, could engage actively in the global debate on concepts of water diplomacy by contributing to global and regional initiatives aimed at developing mechanisms for improved cooperation and better management of transboundary waters and contributing OSCE's approach to "water diplomacy". The OSCE could contribute to existing efforts by enabling a discussion platform among water, foreign and security policy communities in order to increase understanding of water conflicts and develop strategic and practical solutions, as appropriate and needed, in cooperation with partners.

Water Co-operation

The OSCE should continue to promote the internationally acknowledged principles for transboundary water co-operation, namely not to cause significant transboundary harm, to ensure the reasonable and equitable use of water resources, and to foster the willingness to co-operate. The OSCE, together with UNECE, should

strengthen its work to facilitate transboundary water cooperation in specific basins including through support for developing and implementing legal and institutional frameworks.

Confidence-building and conflict prevention

The OSCE should make increased use of environmental co-operation, including in the area of water, as a tool in diminishing tensions as part of a broader effort to prevent conflict, build mutual confidence and promote good neighbourly relations.

Support to implementation of MEAs

The OSCE should support its participating States in the ratification and implementation of relevant multilateral environmental agreements related to water governance, including the UNECE environmental conventions. The OSCE should further enhance its engagement in the implementation of the UNECE Water Convention and its work programme and products such as assessment of the benefits of water cooperation, adaptation to climate change, and EU Water Initiative National Policy Dialogues, which also offer opportunities for co-ordination among international actors.

Implementation of water-related SDGs

The OSCE should support its participating States in the implementation of the Sustainable Development Goals in particular related to Goal 6 (Ensure availability and sustainable management of water and sanitation for all), the water-related targets and the role of water in reaching other goals. Significant effort should also be invested in ensuring that sustainable development principles are taken into account in relevant planning and decision-making in the area of water management.

Adaptation to Climate Change

The OSCE, in close co-operation with relevant international actors and building on the established partnership with UNECE, should increase its engagement in promoting transboundary cooperation in climate change adaptation, building on the best practices such as the Strategic Framework for Adaptation to Climate Change for the Dniester basin.

Disaster Risk Reduction

The OSCE, through its participating States and executive structures, should support the implementation of the Sendai Framework for Disaster Risk Reduction, particularly in the area of water-related disasters.

Engaging Youth

The OSCE should invest more in educating young generations on how to govern water more wisely, and strengthen its collaboration with youth organisations to support their water-related activities and promote their interaction and networking within and across borders.

Gender mainstreaming

The OSCE should strive to promote a gender perspective in its activities related to water governance and water diplomacy given the gender-specific impacts of water policies and the vast potential of the inclusion of gender in this field for more equitable and effective water management.

Co-ordination and co-operation with partners

The OSCE should continue to co-ordinate its water-related activities with other international and regional organizations active in this field taking into account the added value of the OSCE's comprehensive approach to security and regional coverage as well as the available partnership arrangements including the Environment and Security Initiative (ENVSEC). The OSCE should further strengthen its engagement in the Environment and Security (ENVSEC) Initiative as a robust mechanism to support transboundary water co-operation throughout the OSCE region.

References

- Antypas, A., M. Paszkiewicz and S. Stec (2015), "Corporate Social Responsibility and Corporate Accountability: An Historical Overview," in Rayman-Bacchus and Walsh, eds., Corporate Responsibility and Sustainable Development (Taylor, forthcoming)
- Colakhodzic et al. (2011). Čolakhodžić, A., M. Filipović, J. Kovandžić, and S. Stec, "The Sava River: Transitioning to Peace in the Former Yugoslavia," in Erika Weinthal, Jessica Troell, and Mikiyasu Nakayama, eds. WATER AND POST-CONFLICT PEACEBUILDING (Vol. 3 of Carl Bruch, David Jensen, Mikiyasu Nakayama and John Unruh, PEACEBUILDING AND NATURAL RESOURCES) (Taylor: 2014).
- Diebold, A., and J. Sehring (2012): From the Glaciers to the Aral Sea. Water Unites (Trescher, Berlin)
- Duchovny, V. A. (2007), Transboundary water collaboration in Central Asia (ICWC), INBO, 7 June 2007, Debrecen. Available at http://www.inbo-news.org/IMG/pdf/Dukhovny-June_2007-eng_Hungar_2_session.pdf
- European Commission (2012). Slovenia. Report on Implementation of Water Framework Directive
- European Commission (n.d.). EC factsheet, "Cohesion Policy and Croatia"

Howells, Mark, Hermann, Sebastian, Welsch, Manuel, Bazilian, Morgan, Segerström, R., Alfstad, Thomas, Gielen, Dolf, Rogner, H., Fischer, Guenther, van Velthuizen, H., Wiberg, D., Young, Charles, Roehrl, R.A., Mueller, A., Steduto, Pasquale, Ramma, Indoomatee (2013). Integrated analysis of climate change, land-use, energy and water strategies. *Nat. Clim. Change* 3, 621–626.

ICWC (2009). Dukhovny, V., V. Sokolov, and H. Manthrilake, eds., *Integrated Water Resources Management: Putting Good Theory into Real Practice*.

ISRBC (2013) Draft Sava River Basin Management Plan

ISRBC (2014). Report on Implementation of the Framework Agreement on the Sava River Basin and Work of the ISRBC for the Period April 1, 2013 – July 31, 2014

Libert, Bo (2015). “The UNECE Water Convention and the Development of Transboundary Cooperation in the Chu-Talas, Kura, Drin and Dniester River Basins,” *Water Intl*, 2015. Vol. 40, No. 1, 168-182.

Lockwood, M. *et al.* (2008), “Governance Principles for Natural Resource Management, Land and Water Australia”, Canberra.

OECD (2007), Guiding Principles of Effective Environmental Permitting Systems

OECD (2011), *Water Governance in OECD Countries: A Multi-Level Approach*, OECD Studies on Water

OECD (2012), *OECD Environmental Outlook to 2050 – The consequences of Inaction*, OECD Publishing, Paris.

OECD (2012a), Environmental Performance Review, Slovenia

OSCE (2012). The Aarhus Centres: A Brief Introduction

Rogers, P. and A. Hall (2003) "Effective Water Governance", Global Water Partnership Technical Committee, Background Paper no.7

Stec, S., M. Paszkiewicz, and A. Antypas (2016), “Is the Time Ripe for Global Binding Norms for Corporate Accountability?” (forthcoming).

Stockholm Environment Institute (2011), Understanding the Nexus.

Tropp, H., “Water Governance Challenges,” in *World Water Assessment Programme, The United Nations World Water Development Report 2: Water, a Shared Responsibility*. (UNESCO, 2006).

UBA (Umweltbundesamt) (2010): *Wasserwirtschaft in Deutschland. Teil 1: Grundlagen*.

UNDP (2013). Jacobsen, Maria et al., *User’s Guide on Assessing Water Governance*.

UNECE (2009). River Basin Commissions and other institutions for transboundary water cooperation.

UNECE (2009a). Guidance on Water and Adaptation to Climate Change.

UNECE (2011). Strengthening Water Management and Transboundary Water Cooperation in Central Asia: the Role of UNECE Environmental Conventions.

UNECE (2011a). Second Assessment of Transboundary Rivers, Lakes and Groundwaters.

UNECE (2013). The European Union Water Initiative National Policy Dialogues: Achievements and Lessons Learned, ECE/MP.WAT/38.

UNECE (2014), Croatia, Second Environmental Performance Review

UNECE (2015). Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices.

UNECE (2015a). Reconciling resource uses in transboundary basins: assessment of the water-food-energy-ecosystems nexus

UNECE and OECD (2014). Integrated Water Resources Management in Eastern Europe, the Caucasus and Central Asia: European Union Water Initiative National Policy Dialogues progress report 2013.

UNU and UNOSD. 2013. Water for Sustainability: Framing Water within the Post-2015 Development Agenda. United Nations University Institute for Water, Environment and Health, UN Office of Sustainable Development and Stockholm Environment Institute

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

World Bank (2006). Millington, Peter. *Integrated river basin management: from concepts to good practice*. Integrated river basin management briefing note; no. 15. Washington, DC.
<http://documents.worldbank.org/curated/en/2006/02/9727476/integrated-river-basin-management-concepts-good-practice>

World Economic Forum (2011). Global Risks 2011, 6th Edition

World Economic Forum (2015). Global Risks 2015, 10th Edition

Wouters, P. and S. Vinogradov (2004), "Analysing the ECE Water Convention: What Lessons for the Regional Management of Transboundary Water Resources," *Yb. Intl. Coop'n and Dev.* 2003/04, 55, 56.