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The Water Convention:

30 Years of Impact and Achievements on the Ground

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The Water Convention:
30 Years of Impact and Achievements on the Ground

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FOREWORD
THE SPIRIT OF HELSINKI CONTINUES TO INSPIRE WATER COOPERATION

Olga Algayerova
United Nations Under-Secretary-General
Executive Secretary of the
United Nations Economic Commission for Europe

In March 1992, governments gathered in Helsinki, Finland, with a vision in mind: to manage shared waters in the pan-European region collaboratively and sustainably. By the end of the meeting, the Water Convention was born. It is both a holistic legal framework and an intergovernmental platform on how to better manage shared watercourses. Looking back, it was a crucial moment. At the dawn of the twenty-first century, the text adopted and signed in Helsinki remains more relevant than ever and the spirit ignited in Helsinki continues to live on as the Water Convention celebrates its 30th anniversary. Today, the Water Convention is an effective framework for advancing transboundary water cooperation at the global level.

This publication showcases the many success stories that are owed to the Water Convention over the past three decades. The impact of the agreement that was put on paper in Helsinki continues to resonate around the world. Indeed, the Convention's ability to bring together riparian States to manage their common water resources in a spirit of collaboration has attracted States beyond the pan-European region, which led to the opening of the Convention for accession to all UN Member States in 2016. Chad, Ghana, Guinea-Bissau, Senegal and Togo were the first countries to accede, joining the 41 Parties to the Convention in Europe and Central Asia, with many other countries currently undergoing the accession process.

These stories vibrantly illustrate how the Water Convention has been successful in fostering cooperation among riparian States at both political and technical levels, with many proven results from these cooperative efforts: improved water quality, better human health, the mitigation of impacts from floods and droughts, the prevention of conflicts, regional integration, and the conservation and restoration of riverine ecosystems.

This publication not only showcases examples of cooperation; it also reflects the spirit of collaboration with many people around the globe contributing their success stories and agreeing to be interviewed, shining a light on the power of the Water Convention to positively change lives. Behind every success story are important actors, both government and non-government stakeholders, who are dedicated to sustainably managing shared water resources through cooperation.

I invite you to explore these stories and to learn about the many tools and agreements that have the potential to prevent conflict, sustain peace and ensure a sustainable basis for human life in harmony with nature. The 30th anniversary of the Water Convention is also a stark reminder that many of the world's transboundary rivers, lakes and aquifers do not yet benefit from an operational arrangement for transboundary water cooperation. A significant increase in transboundary water cooperation is urgently needed and would constitute a crucial contribution to the global Decade of Action to deliver the Sustainable Development Goals by 2030.

This publication is not only a rich collection of success stories, it is also a source for guidance and inspiration, and a call to step up our action for transboundary water cooperation. Water is a powerful medium for international cooperation, so let us find inspiration in the following stories to champion transboundary water cooperation everywhere.

ACKNOWLEDGEMENTS

The impact and achievements described in this publication would not have been possible without the commitment of numerous country representatives, such as ministers, delegates, focal points, chairs and Bureau members, but also partners, donors and many more who have worked hard over three decades to achieve practical results and to make the Water Convention what it is today.

This publication is based on success stories submitted by governments and stakeholders in early 2022 in response to an open call issued by the Convention secretariat for success stories on the impact of the Water Convention on the ground. It also incorporates information provided additionally through interviews conducted between March and April 2022.

The secretariat would like to gratefully acknowledge the success stories submitted by the following experts and organizations.

1. Danube Sturgeon Task Force (by Miklós Marton, Hungary)
2. Transboundary water cooperation as a means to advance protection and sustainable development of the Dniester River Basin shared by the Republic of Moldova and Ukraine (by Dana Bogdan and André Thomas Confiado, Organization for Security and Cooperation in Europe)
3. 25 years of the ICPDR: From Convention to Action (by Hélène Masliah-Gilkarov, International Commission for the Protection of the Danube River)
4. Hungarian water expertise serving Ghana's benefit (by Patrícia Marity, Hungary)
5. Danube River Basin Enhanced Flood Forecasting Cooperation (by Viktor Oroszi, Hungary)
6. Enabling transboundary cooperation and integrated water resources management in the extended Drin River Basin (by Gerta Lubonja, Albania)
7. Niger Basin Authority: a tool for development and harmonious integration for nine countries (by Kone Soungalo, Niger Basin Authority)
8. Romania in bilateral negotiations under the Water Convention (Helsinki 1992) (by Carmen Neagu, Romania)
9. Women, water and climate change (by Ruth A. Richardson, International Network of Liberal Women)
10. Volta Basin Water Charter: a tool for a concerted, equitable and sustainable use of the shared water resources of the Volta Basin (by Robert Yaovi Dessouassi, Volta Basin Authority)
11. Mutually beneficial cooperation in the Chu and Talas transboundary river basins (by Indira Akbozova, Secretariat of the Chu Talas Water Management Commission)
12. Development and approval of the Dnieper River Basin Management Plan (by Viktoria Voronova and Vladimir Korneev, Belarus)
13. Blue and green. Sustainable, integrated and climate change adapted water management (by György Rátfai, Hungary)
14. Water Convention – legal and inspirational backbone (by Heide Jekel, Germany)
15. Transboundary cooperation in the Sava River Basin (by Dragan Zeljko, International Sava River Basin Commission)
16. EU Water Framework Directive (by Hans Stielstra, European Commission)
17. Supporting transition to healthy waters, as part of the European Union Water Initiative Plus (by Michaela Hauf, European Commission)
18. Advancing peace and security through water diplomacy – a success story from the Stockholm International Water Institute and the International Centre for Water Cooperation (by Martina Klimes, SIWI/ICWC)
19. Capacity-building for improved governance on transboundary water (by Yumiko Yasuda, Global Water Partnership)
20. Rhine 2040 – an international success story to be continued (by Marc Daniel Heintz, International Commission for the Protection of the Rhine)
21. Signed agreements and successful cooperation on transboundary waters around Polish borders (by Katarzyna Delis-Szeląg, Poland)
22. Tisza River Basin cooperation: strengthening cooperation towards the implementation of the updated Integrated River Basin Management Plan for the Tisza River Basin supporting the sustainable development of the region (by Péter Kovács and György Rátfai, Hungary)
23. Transboundary cooperation is key to reaching the Sustainable Development Goals (by Nelao Haimbodi, Permanent Okavango River Basin Water Commission)
24. Drin Coordinated Action: from sharing waters to the sharing of benefits (by Katharina Davis, United Nations Development Programme)
25. Project on cooperation in the Senegalo-Mauritanian Aquifer Basin (by Hilario Sanha, Guinea-Bissau)
26. Ecuador and Peru consolidate binational cooperation for transboundary watercourses management (by Sebastián Izquierdo, United Nations Development Programme)
27. Implementation of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes in the Republic of Uzbekistan (by Askar Mirsaidov, Uzbekistan)
28. Albufeira Convention: A necessary cooperation tool to address the management of Iberia's transboundary basins (by Concepción Marcuello Olona, Spain)

All quotes used in this publication were extracted from the statements made at the ninth session of the Meeting of the Parties to the Water Convention (Geneva, 29 September – 1 October 2021), except for the quote from the statement of Serik Kozhaniyazov (Kazakhstan) made at the Pan-European Regional Preparatory Meeting for the United Nations 2023 Water Conference (Geneva, 12–13 April 2022).

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- Patrícia Marity, Hungary
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- Jos Timmerman, Waterframes, the Netherlands
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The publication was edited by Cathy Lee. It was designed by Christophe Nutoni.

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NIGERIA
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LUXEMBOURG

KEY FACTS
THE WATER CONVENTION IN BRIEF

The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) is an international legal instrument and intergovernmental platform which aims to ensure the sustainable use of transboundary water resources. Initially negotiated as a regional instrument, it was opened up globally for accession to all UN Member States in 2016. Membership to the Water Convention is growing steadily, with five Parties from outside the UNECE region joining this global instrument in the period 2016–2021. Furthermore, a growing number of countries are in the process of accession and numerous activities under the Convention are implemented worldwide.

The Water Convention requires Parties to prevent, control and reduce transboundary impact, to use transboundary waters in a reasonable and equitable way, and to ensure their sustainable management through cooperation. Parties bordering the same transboundary waters are obliged to cooperate by concluding specific agreements and establishing joint bodies. The Convention has a sustainable development perspective in that it takes into account all the sectors involved in the protection and use of water.

> **"The Water Convention clearly demonstrates the advantages and practical benefits of multilateralism."**
> **Kersti Kaljulaid, President of the Republic of Estonia (2016-2021)**

The Water Convention establishes an institutional framework to support implementation. The Meeting of the Parties and the various working groups and task forces are effective platforms for sharing experiences and for implementing a jointly agreed programme of work.

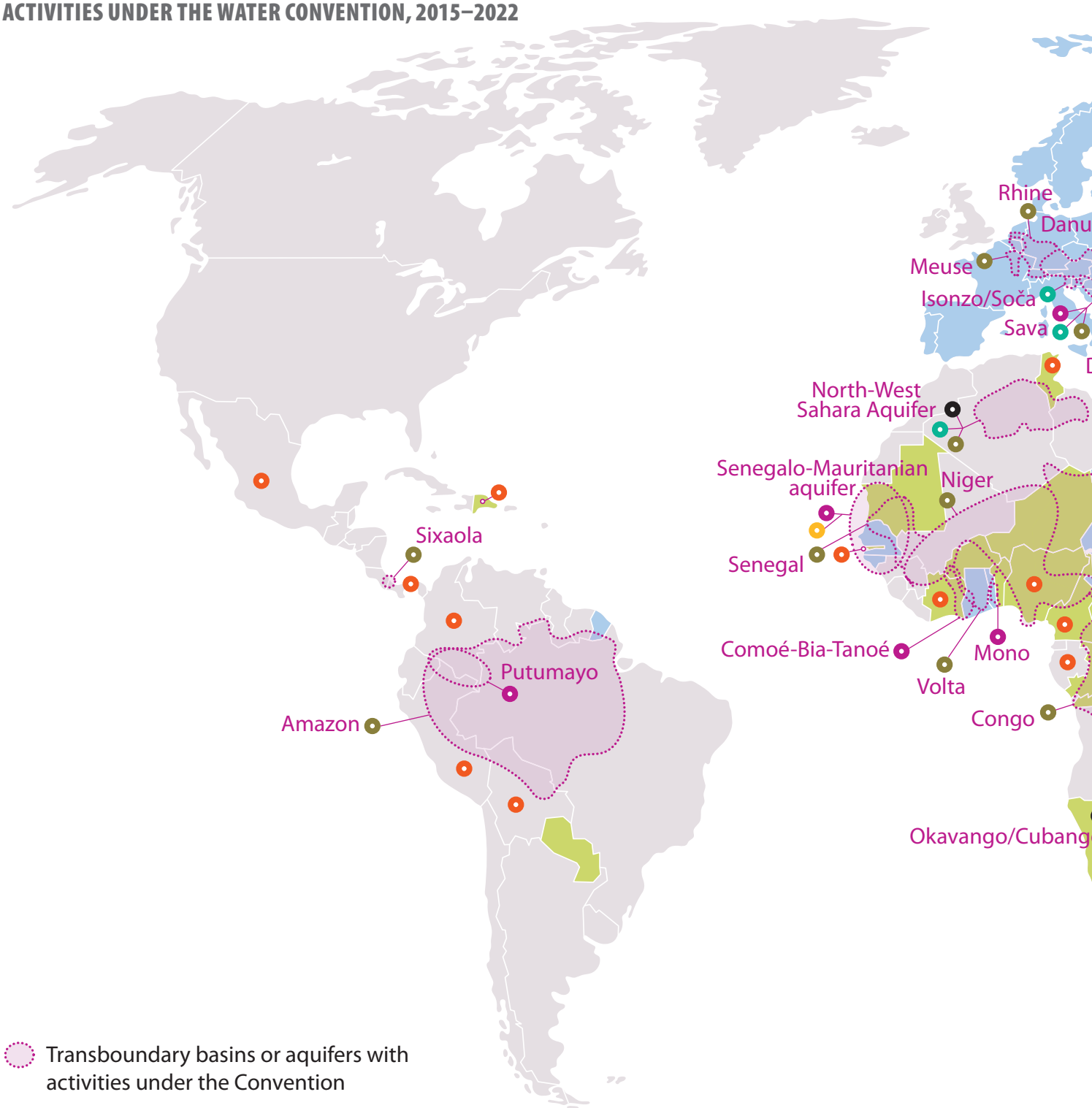
The Water Convention is a widely accepted legal framework. Many important water agreements, e.g. the Danube River Protection Convention from 1994, the Convention on the Protection of the Rhine from 1999, or the Convention for the Prevention of Conflicts Related to the Management of Shared Water Resources in Central Africa from 2017 mention the Water Convention as a core reference for the cooperation of their Parties. New agreements and arrangements, such as the 2018 Water Charter for the Volta River Basin, are increasingly making reference to the Water Convention.

The Water Convention is a powerful tool to promote and achieve the objectives of the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs). It plays a key role in accelerating progress towards SDG 6 (clean water and sanitation) and its target 6.5, which calls upon all States to implement integrated water resources management at all levels by 2030, including through transboundary cooperation. The Convention and its programme of work also contributes to several other SDGs such as SDGs 2 (zero hunger), 3 (good health and well-being), 7 (affordable and clean energy), 13 (climate action), 15 (life on land), 16 (peace, justice and strong institutions) and 17 (partnership for the Goals).

> **"The 1992 Water Convention is a powerful tool to advance cooperation, prevent conflicts and build resilience. I welcome its growing membership and call on all Member States to join both the 1992 Water Convention and the 1997 Watercourses Convention and ensure their full implementation."**
> **António Guterres, United Nations Secretary-General**

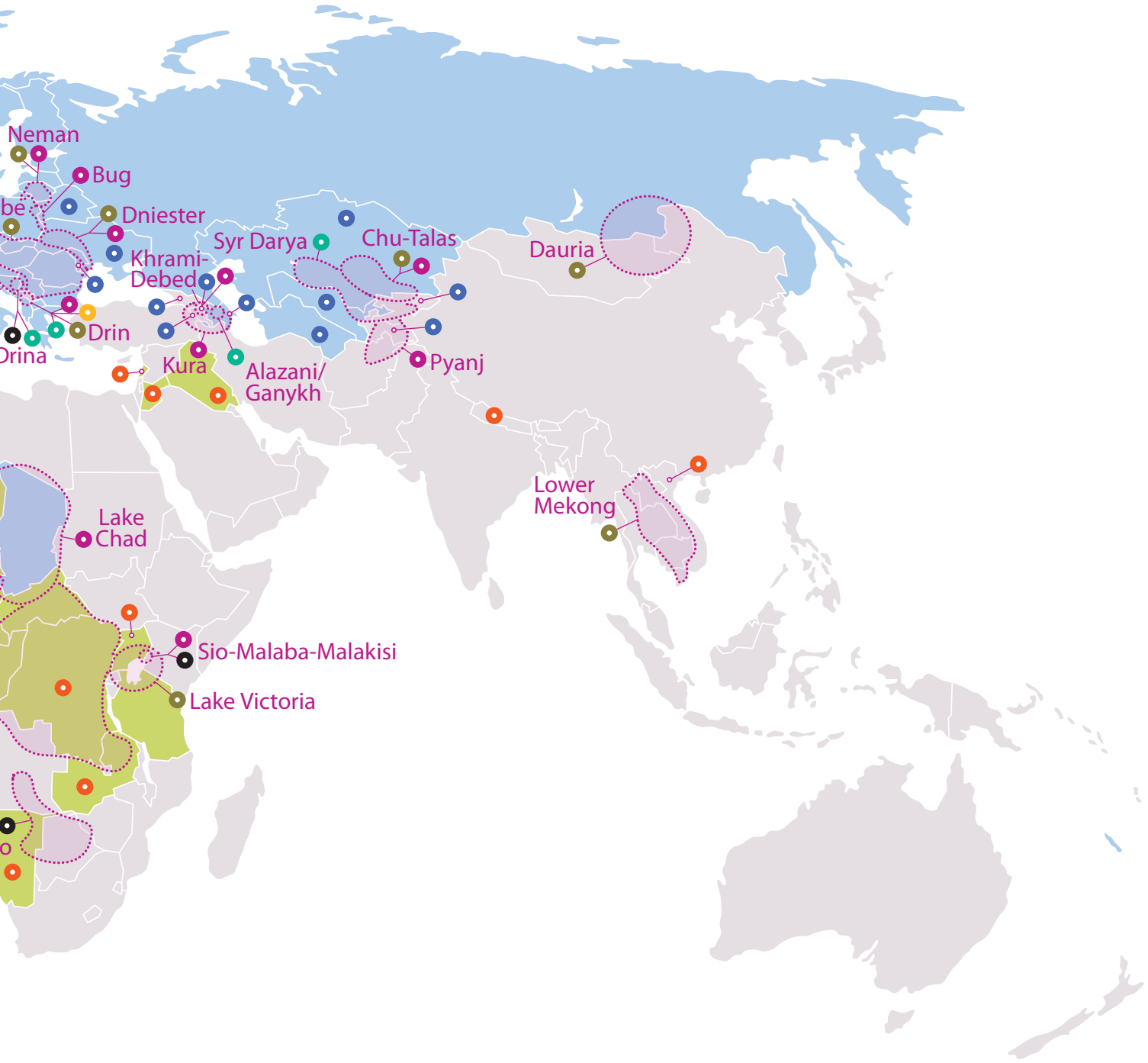
Map 1

ACTIVITIES UNDER THE WATER CONVENTION, 2015–2022



Areas of work

- Support the development of agreements and the establishment of joint bodies
- Identify, assess and communicate the benefits of transboundary water cooperation
- Assess and promote the water-food-energy-ecosystems nexus in transboundary basins
- Adapt to c
- Increase k
- Monitor, a
- National P
  Union Wat



limate change in transboundary basins

nowledge of and accession to the Water Convention

ssess and share information in transboundary basins

olicy Dialogues on IWRM under the European
ter Initiative

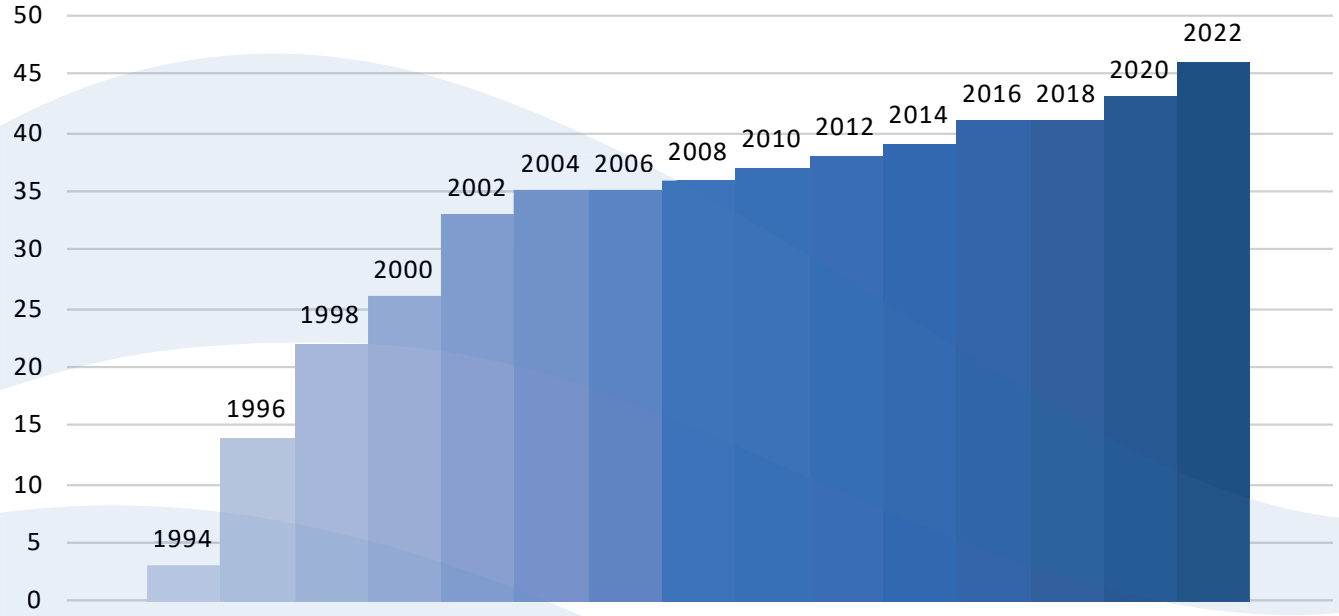
Country Status

- Parties to the Water Convention
- Countries in the process of accession

THE WATER CONVENTION IN NUMBERS

Figure 1

NUMBER OF PARTIES TO THE WATER CONVENTION, 1994–2022



Note: Number of Parties is indicated as of 1 January of a given year.

Figure 2

SESSIONS OF THE MEETING OF THE PARTIES, 2003–2021, NUMBER OF PARTICIPANTS

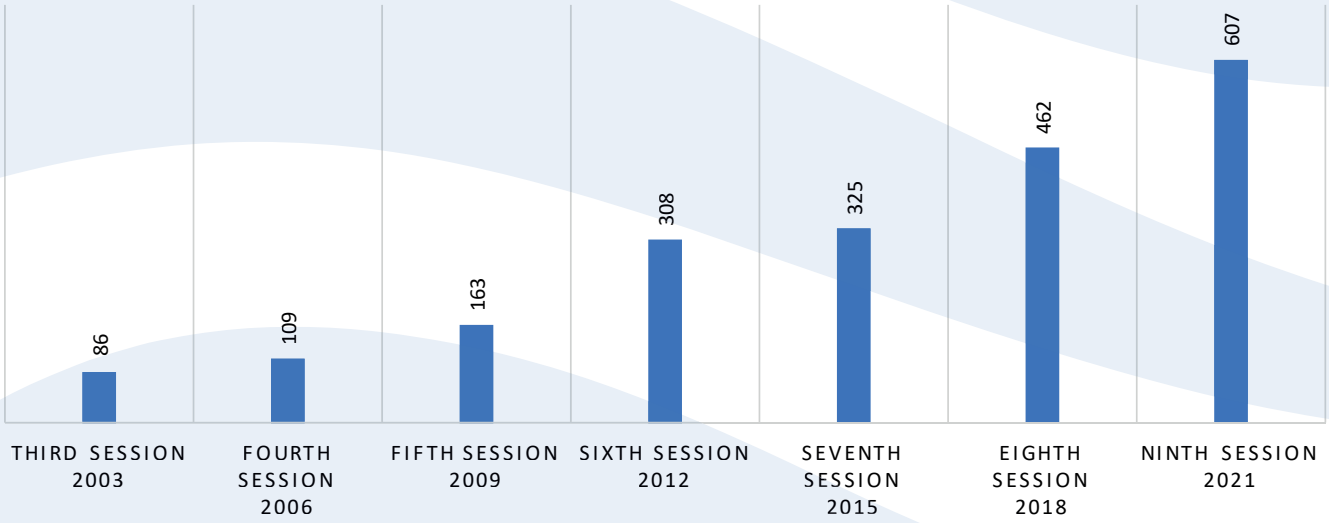
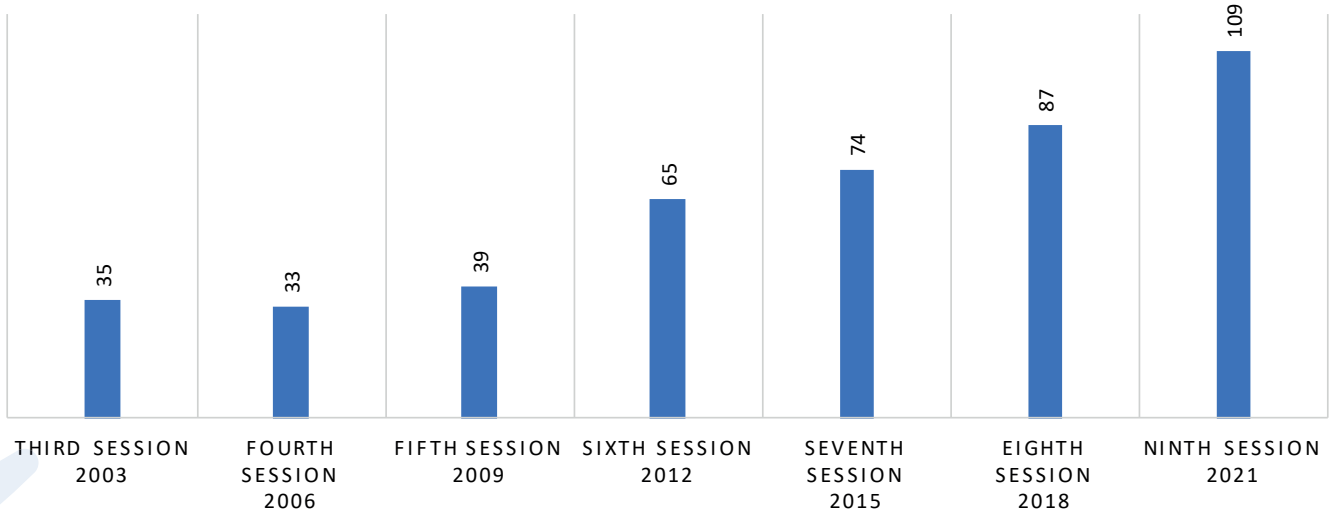


Figure 3

SESSIONS OF THE MEETING OF THE PARTIES, 2003–2021, NUMBER OF COUNTRIES REPRESENTED



85 countries participated in activities on the ground under the programmes of work under the Water Convention in the period 2015–2022.

Note: based on activities indicated on Map 1.

98 international organizations and NGOs are partners to the Water Convention.

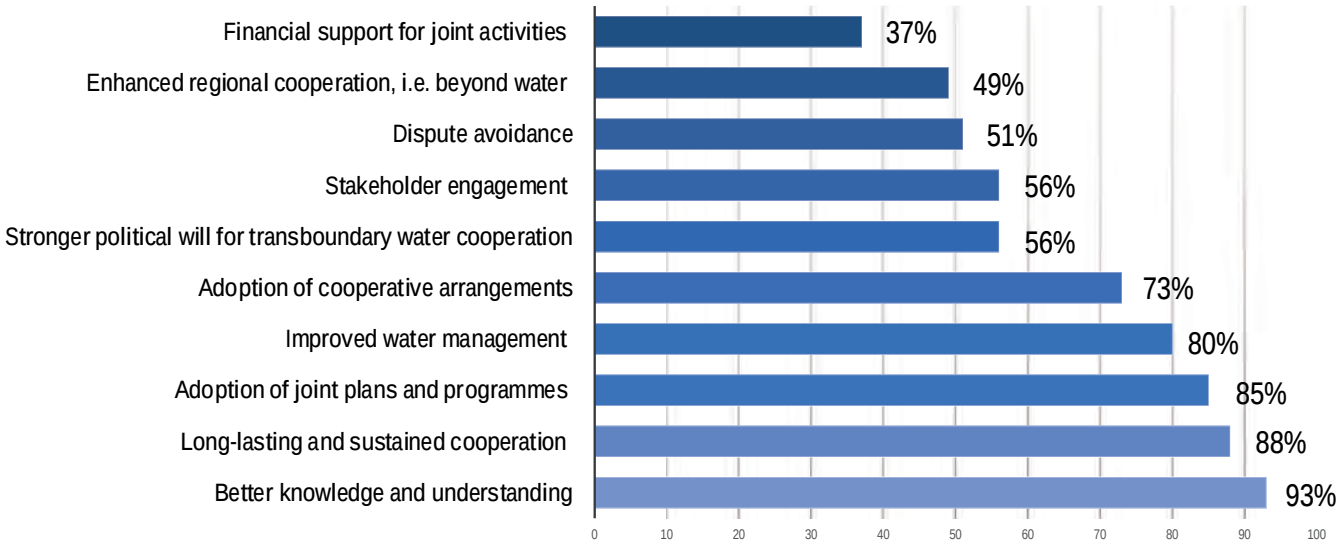
Note: Based on programmes of work for 2019–2021 and 2022–2024.

In 2011–2021, about 6,000 experts were trained on international water law, water management, climate change adaptation, the nexus approach, dam safety and other areas through the capacity-building activities led by the Water Convention.

Note: Meetings of Convention bodies not included.

Figure 4

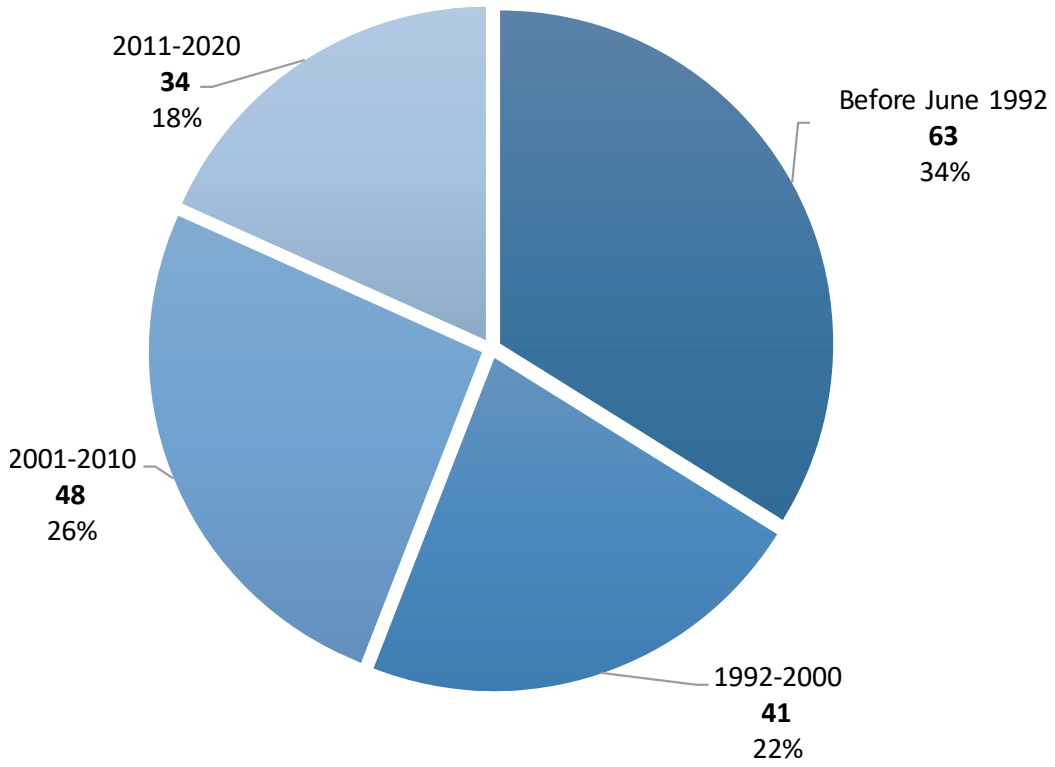
WHAT DO PARTIES TO THE WATER CONVENTION ACHIEVE THROUGH TRANSBOUNDARY COOPERATION?



Note: Based on the Second report on implementation of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes 2017–2020 (UNECE, 2021).

Figure 5

NUMBER OF AGREEMENTS REPORTED AS VALID BY AT LEAST ONE PARTY IN 2020, BY DATE OF ADOPTION

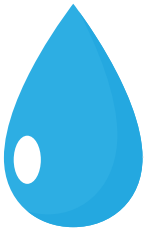


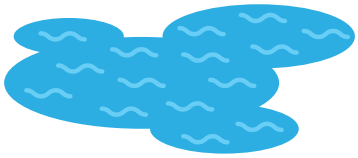
Note: This covers agreements (not protocols), with participation of at least one Party to the Convention, that were reported as valid by at least one Party during the second reporting exercise in 2020.

Average value of the SDG indicator 6.5.2 for Parties: 80 per cent in 2020 (global average: 58 per cent in 2020).

Note: SDG indicator 6.5.2 tracks the proportion of transboundary basin area within a country that has an operational arrangement for water cooperation.

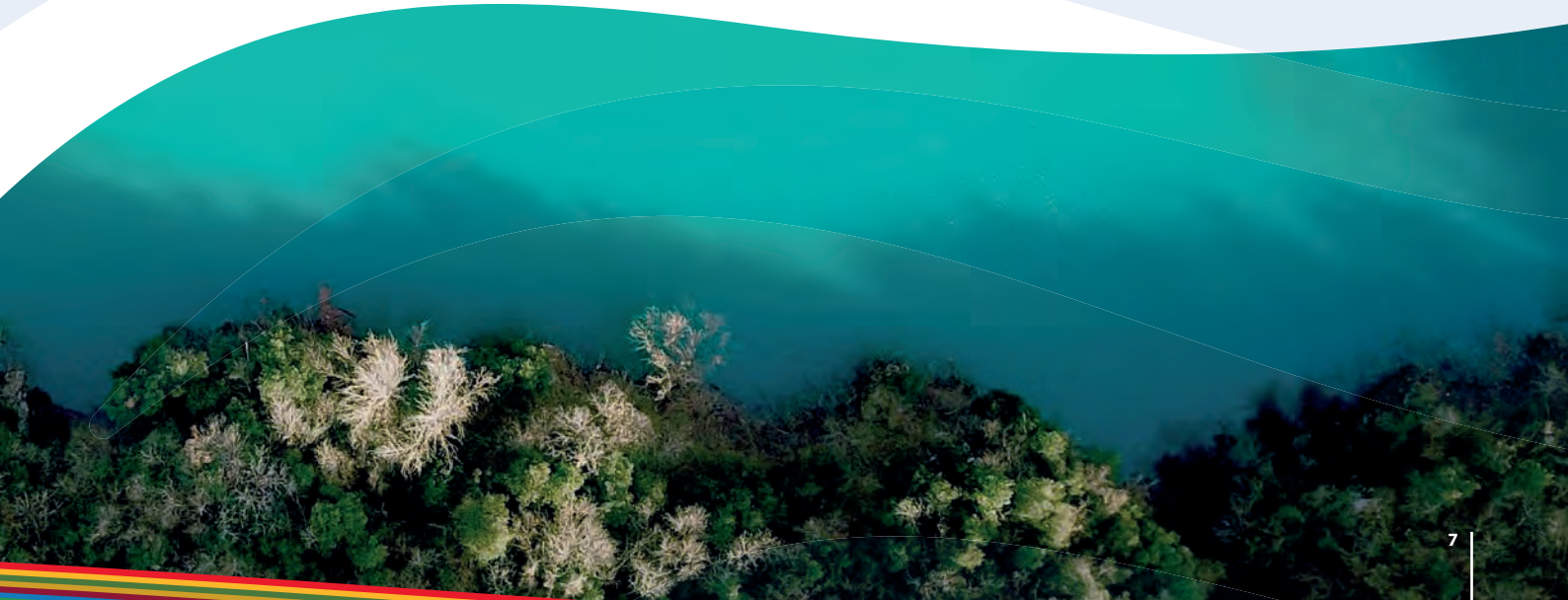
Of the 24 countries, globally, that report that all their transboundary basins are covered by operational cooperation arrangements, in accordance with SDG indicator 6.5.2, 19 are Parties to the Water Convention (in 2020).





The majority of the 144 transboundary river and lake basins reported by Parties in 2020 are covered by agreements, but at least 16 river and lake basins and 15 sub-basins are not covered.

186 transboundary water agreements were reported by the Parties in 2020.



30 YEARS OF THE WATER CONVENTION: KEY MILESTONES

1992

The Water Convention is adopted in Helsinki.

The Central Asian States agreement establishes the Interstate Commission for Water Coordination in Central Asia.

1993

Recommendations to ECE Governments on Water-Quality Criteria and Objectives adopted.

Guidelines on the Ecosystem Approach in Water Management adopted.

1994

Recommendations to ECE Governments on the Prevention of Water Pollution from Hazardous Substances adopted.

The Convention on Cooperation for the Protection and Sustainable Use of the Danube River (signed in 1994 in Sofia, Bulgaria, and entered into force in 1998) establishes the International Commission for the Protection of the Danube River.

1995

Guidelines for ECE Governments on the Prevention and Control of Water Pollution from Fertilizers and Pesticides in Agriculture adopted.

1996

The Water Convention enters into force.

The Convention on the International Commission for the Protection of the Oder is adopted.

1997

The first work plan 1997–2000 under the Water Convention focuses on joint bodies, assistance to countries with economies in transition, the integrated management of water and ecosystems, land-based pollution control, and water supply and human health.

A pilot programme on monitoring is launched.

1998

Joint Expert Group of Water and Industrial Accidents established under the Water Convention and the Industrial Accidents Convention.

1999

The Protocol on Water and Health to the Water Convention is adopted in London.

The Convention on the Protection of the Rhine is adopted.

2008

Safety Guidelines and Good Practices for Tailing Management Facilities adopted.

Creation of the UN-Water Task Force on Transboundary Waters, co-chaired by UNECE and UNESCO.

Start of the project "Water quality in Central Asia" (2008–2019).

2009

Guide to Implementing the Water Convention adopted.

Guidance on Water and Adaptation to Climate Change adopted.

Non-UNECE countries start to get involved in Water Convention activities.

Slovakia starts hosting IWAC.

Start of a programme of pilot projects on climate change adaptation in transboundary basins.

2010

The Water Convention initiates the Drin project (which led to the signing of the Memorandum of Understanding for the Management of the Extended Drin Basin [Drin MoU] in 2011).

Start of the Kura Project.

Agreement on the Protection and Sustainable Development of the Prespa Park Area adopted.

2011

Second Assessment of Transboundary Rivers, Lakes and Groundwaters is published.

2012

Implementation Committee under the Water Convention established.

Model Provisions on Transboundary Groundwaters adopted.

Treaty on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin (Dniester Treaty) signed at the Meeting of the Parties to the Water Convention.

Decision VI/3 facilitating accession by all United Nations Member States adopted.

2013

Water-food-energy-ecosystems nexus methodology is developed under the Water Convention (by 2022, nexus assessments were conducted in seven basins).

A global network of basins working on climate change adaptation is established together with International Network of Basin Organizations (INBO) (18 basins participate in 2022).

2014

The 1997 Watercourses Convention enters into force.

2015

SDG target 6.5 refers specifically to transboundary cooperation.

A reporting mechanism under the Water Convention is introduced and is combined with reporting on SDG indicator 6.5.2.

The Policy Guidance Note on Benefits of Transboundary Water Cooperation: Identification, Assessment and Communication adopted.

2000

Guidelines on Monitoring and Assessment of Transboundary Rivers and Guidelines on Monitoring and Assessment of Transboundary Groundwaters adopted.

Guidelines on Sustainable Flood Prevention adopted.

Water management: Guidance on public participation and compliance with agreements developed.

Adoption of the EU Water Framework Directive.

A study on the relationship between the 1992 Water Convention and the 1997 Convention on the Law of Non-navigational Uses of International Watercourses (Watercourses Convention) is developed.

The International Water Assessment Centre (IWAC) is established in the Netherlands.

2001

A joint special session of the Water Convention and the Industrial Accidents Convention decides to start a negotiation process on a legal instrument on civil liability (which led to the adoption of the Protocol on Civil Liability and Compensation for Damage Caused by the Transboundary Effects of Industrial Accidents on Trans-boundary Waters in 2003 in Kyiv, Ukraine).

2002

The Framework Agreement on the Sava River Basin is adopted.

The International Agreement on the River Meuse is adopted.

The International Agreement on the River Scheldt is adopted.

Guidelines on Monitoring and Assessment of Transboundary and International Lakes and Guidelines on Monitoring and Assessment of Transboundary Estuaries adopted.

2003

Amendments adopted to enable all United Nations Member States to accede to the Water Convention.

2004

Start of the Dniester project.

Start of the project "Dam safety in Central Asia: Capacity-building and Regional Cooperation".

2005

The Protocol on Water and Health enters into force.

2006

Start of the National Policy Dialogues (NPDs) on Integrated Water Resources Management (IWRM) under the EU Water Initiative (EUWI) in Armenia, the Republic of Moldova and Ukraine (in 2022, NPDs run in 11 countries).

Strategies for Monitoring and Assessment of Transboundary Rivers, Lakes and Groundwaters adopted.

Model Provisions on Transboundary Flood Management adopted.

Safety Guidelines and Good Practices for Pipelines adopted.

2007

First Assessment of Transboundary Rivers, Lakes and Groundwaters is published.

Recommendations on payments for ecosystem services in integrated water resources management launched.

2016

Convention for the Exchange of Data and Flood Forecasting in the Meuse International River Basin District adopted.

Amendments become operational, allowing for accession by non-UNECE countries to the Convention.

2017

Kazakhstan starts hosting IWAC.

2018

First non-UNECE countries (Chad and Senegal) accede to the Water Convention.

Strategy for the implementation of the Convention at the global level adopted.

The Water Convention initiates work on facilitating funding and financing of transboundary cooperation.

The first report on implementation of the Water Convention launched.

First reporting exercise on SDG indicator 6.5.2 leads to the first ever global status report on transboundary water cooperation.

2019

An updated MoU Strengthening of Tisza River Basin Cooperation adopted.

The Water Convention supports cooperation on the Senegal-Mauritanian Aquifer Basin (SMAB), leading to the signature of a Ministerial Declaration on SMAB in 2021.

Start of the first advisory procedure in the Implementation Committee under the Water Convention.

2020

Ghana accedes to the Water Convention.

Following support provided by the Water Convention, the Convention for the Prevention of Conflicts Related to the Management of Shared Water Resources in Central Africa is adopted by the Heads of State of the Economic Community of Central African States (ECCAS).

2021

Guinea-Bissau and Togo accede to the Water Convention.

The Handbook on Water Allocation in a Transboundary Context adopted.

The Practical Guide for the Development of Agreements or Other Arrangements for Transboundary Water Cooperation adopted.

Publications on funding and financing of transboundary water cooperation and on nexus solutions and investments launched.

The Second report on implementation of the Water Convention launched.

2022

The Water Convention organizes the first ever transboundary pavilion at the ninth World Water Forum in Dakar, Senegal.

Chapter 1: THE WATER CONVENTION CARES ABOUT THE PROTECTION OF OUR ENVIRONMENT AND ECOSYSTEMS

> **Joining the Water Convention has led us to strengthen the ecosystem approach to water management, pollution prevention and control, monitoring and assessment of rivers and groundwater, sustainable flood prevention and public participation."**
> **Serigne Mbaye Thiam, Minister for Water and Sanitation of Senegal**

The Water Convention has a strong focus on the protection of our environment and the sustainability of water management. The reduction of pollution, the conservation and restoration of ecosystems, along with the protection of biodiversity in transboundary basins, are all core objectives. The Convention helps to ensure that future generations can enjoy a healthy environment.

The precautionary and polluter pays principles and the application of environmental impact assessments, together with harmonized policies, programmes and strategies covering the relevant catchments, are among the instruments to be applied under the Convention. The Convention promotes coordinated monitoring and strengthened scientific cooperation in transboundary waters in order to increase knowledge on the status of water and water-dependent ecosystems. To reach the environmental and sustainability objectives, the involvement of stakeholders in water management and cooperation is a key principle.

SUCCESS STORIES

ATLANTIC SALMON RETURNS TO THE RHINE

For the nine countries sharing the Rhine Basin in the industrial centre of Europe it is an important ongoing task to improve the status of water bodies in the catchment area and to ensure the sustainability of water management. All nine countries are Parties to the Water Convention.

There is a long history of cooperation in the basin. The International Commission for the Protection of the Rhine (ICPR) exists since 1950. In 1999, an updated Convention on the Protection of the Rhine was signed, which had also been agreed in light of the adoption of the 1992 Water Convention. The 1999 Convention considerably broadened the objectives of cooperation between the riparian countries to help achieve the sustainable development of the Rhine river ecosystem.

The ICPR has chosen the return of the Atlantic salmon (a flagship species) as an indicator of the improvement of the Rhine's environmental status. Cooperation among the riparian states through the programme "Rhine 2020" brought about remarkable results:

- A reduction in pollutants and nutrients, e.g. lead concentrations have dropped by 85% since 1970, and phosphorous by almost 50% since 1990.
- Over 95% of households are connected to wastewater treatment plants.
- 140 km^2 of floodplains have been restored.
- 600 fish migration obstacles have been made passable.
- Atlantic salmon and almost all other native fish species have returned to the river.

Adopted in 2020, the "Rhine 2040" programme will further reconcile the various uses of the river with the protection of the ecosystem. New, ambitious targets include measures to adapt to climate change, the completion of fish passes, and the control of micropollutants.

AN EFFECTIVE INTERNATIONAL RIVER BASIN MANAGEMENT PLAN FOR THE DANUBE

The International Commission for the Protection of the Danube River (ICPDR) provides a platform for 14 countries at different levels of economic development to reconcile upstream and downstream perspectives and to arrive at commonly agreed measures. All 14 countries are Parties to the 1992 Water Convention, the blueprint for the Danube River Protection Convention, which was signed in 1994.

The countries of the Danube River Basin, including non-EU countries, have agreed on joint Danube River Basin Management Plans in accordance with the EU Water Framework Directive with the aim to improve the river's environmental status. The first Plan was approved in 2009.

Joint efforts have improved the ecological and chemical water quality of the Danube:

- Organic emissions have been cut by 60%.
- Phosphorus pollution has been cut by 50%.
- Nitrogen emissions have been cut by 30%.
- Information gaps have been closed by the regular Joint Danube Surveys.
- Over 120 fish migration aids have been built to restore continuity, and 60,000 ha of wetlands have been reconnected.
- New sewer systems and wastewater treatment plants have been built at a large number of agglomerations, Best Available Techniques have been applied at the major industrial facilities, and various Best Management Practices have been implemented in agriculture and rural areas to ensure a healthy status of both surface and groundwater bodies.

THE DANUBE-BLACK SEA COOPERATION ON STURGEON

The Danube is one of the last rivers in Europe to provide a habitat for sturgeon. The beluga sturgeon, which grows extremely slowly but can grow up to 7 metres in length, is one of the oldest and largest fish species living in freshwater. Of the six sturgeon species previously living in the Danube, five are critically endangered, of which two are considered to be locally extinct (the ship sturgeon and the European sturgeon). Stellate and Russian sturgeon, as well as the beluga sturgeon, are classified as critically endangered, and the sterlet sturgeon is classified as endangered.

Several organizations, including ICPDR, are working together with the EU and national authorities to raise awareness of the need for action to tackle the critical situation of sturgeon populations. As part of the EU Strategy for the Danube Region, a Danube Sturgeon Task Force was established in 2012.

The initiative has yielded results on different levels. The sturgeon is now protected in all Danube countries, and work to minimize by-catches in the sea has been initiated. Artificial reproduction of native sturgeon species is underway, as are technologies to facilitate migration across dams in the river. Habitats with suitable spawning places are also being identified and mapped.

THE MURA-DRAVA-DANUBE TRANSBOUNDARY BIOSPHERE RESERVE

The Mura-Drava-Danube Transboundary Biosphere Reserve combines 13 protected areas of the shared river ecosystem, representing a remarkable effort to conserve ecosystems in line with such obligations under the Water Convention. With a length of over 700 kilometres, this so-called Amazon of Europe begins with the Mura in Austria and stretches across Slovenia, Hungary, Croatia and Serbia (all Parties to the Water Convention) and along the Drava, all the way to the Danube. The world's first five-country biosphere reserve is Europe's largest protected river landscape. It is home to the highest density of breeding white-tailed eagles in Europe, as well as a number of endangered species such as the little tern, black stork, otters, beavers and sturgeon. It is also an important resting and feeding place for migratory birds.

The objective is to manage the reserve sustainably, while at the same time making economic growth and development possible. Originally initiated by WWF, and with the support of ICPDR, UNESCO declared it the Mura-Drava-Danube Transboundary Biosphere Reserve in 2021.

IMPROVED WATER QUALITY AND FLOOD PROTECTION IN LAKE GENEVA AND CONNECTED RIVERS

Between 1995 and 2006, five transboundary river agreements were signed between the Canton of Geneva and the French authorities to address the deteriorating water quality in transboundary rivers and to improve flood protection. These agreements were technical and financial in nature and included such actions as wetland restoration, river restoration and water retention works to be carried out in France (upstream) and in Switzerland (downstream), co-financed by the two partners. The actions benefited both countries in terms of habitat restoration, water-related recreation and tourism, improved water quality and flood prevention.

The joint approach to assessing the condition of the shared rivers, the common setting of objectives, and the joint action in terms of planning and related financial allocations at the scale of the entire transboundary basin helped implement consistent actions, with the investment bringing greater benefits than would have been achieved with a set of sporadic actions on either side of the border. The cooperation established during this period continues to provide cost savings through the achievement of joint objectives.

SAVING THE URAL/ZHAYIK RIVER SHARED BY RUSSIA AND KAZAKHSTAN

The Ural/Zhayik River flowing from Russia to Kazakhstan and into the Caspian Sea is rapidly shrinking, threatening the ecosystem of the water body as well as affecting various water uses in the basin. Industrial and communal pollution is significant. As a consequence, the unique sturgeon population has declined to catastrophic levels.

The riparians are now focused on targeting efforts to conserve and restore the ecosystem. An agreement concluded between Russia and Kazakhstan in October 2016 provides a basis for joint actions for the preservation of the ecosystem. In this regard, a Russian-Kazakh Commission for the Preservation of the Ural Transboundary River System is developing a joint plan. Important tasks for the future include strengthening cooperation on joint monitoring, exchanging information, preventing transboundary impacts as a result of accidental pollution and extreme weather events, and strengthening public involvement.

BETTER WATER QUALITY IN THE ELBE RIVER

At the end of the 1980s, the Elbe River was one of the most polluted rivers in Europe. Fortunately, there has since been a marked improvement in water quality. The joint work of the International Commission for the Protection of the Elbe River, with both Germany and the Czech Republic as contracting parties, has resulted in this positive development.

The oxygen concentration in the water, which is required to maintain riverine life, has steadily increased. Oxygen concentrations close to 3 mg/l, which is critical for fish, are currently only measured in the Elbe section, which is affected by high and low tides downstream of Hamburg in the summer months. The concentration of mercury in the sediments has decreased from more than 8 mg/kg in 1996 to less than 0.5 mg/kg in 2013. The number of fish species has also increased considerably, as both water quality and the passability of the river for migratory fish has improved significantly. One encouraging result is that salmon has returned to the Elbe tributaries. Objectives for further improvement have been defined in the third jointly agreed River Basin Management Plan for 2022–2027.

ECOLOGICAL IMPROVEMENTS IN THE DRIED-OUT ARAL SEA

Systemic, large-scale efforts have been made since 2018 to rehabilitate the dry and salt-infested bed of the Aral Sea by planting drought-tolerant crops, mainly saxaul, in the territories of Kazakhstan and Uzbekistan, both Parties to the Water Convention. The plantations help stabilize the moving sands, thereby mitigating the adverse effects of frequent storms that carry salt, sand and dust. At the same time, a stable soil and ecosystem is being established. In Uzbekistan, according to official sources, more than half of the dry bottom was planted by 2021. In Kazakhstan, the corresponding figure is 17 per cent, but there are plans for more than half of the Kazakh area to be planted by 2030.

The so-called Northern Aral Sea was established in Kazakhstan in 2005 by building a dam, the Kok-Aral Dam, at the outflow of the Syr Darya River. Consequently, the Northern Aral Sea has contributed to stabilizing the ecological situation. Significant engineering works are ongoing in Uzbekistan for the restoration of aquatic and wetland ecosystems and the stabilization of the water regime in the Amu Darya River delta. Examples include the reconstruction of the Mezhdurechie reservoir and the supporting structures for the Muinak and Rybachye lakes.

SOURCES
Success stories: 1, 3, 20, 27.
Interviews: Heide Jekel, Johan Lammers, Ivan Zavadsky, Peter Gammeltoft, Serik Akhmetov, Vadim Sokolov and Marat Narbayev.
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UNECE (2021). Second Report on Implementation of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 2017–2020.
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Chapter 2: THE WATER CONVENTION HELPS COUNTRIES ADAPT TO CLIMATE CHANGE AND DECREASE THE RISK OF DISASTERS

> **The Convention is a strong instrument to help us reaching the water-related Sustainable Development Goals and to support global adaptation action."**
> **Barbara Visser, Minister of Infrastructure and Water Management (2021-2022) of the Netherlands**

Over the past decade, an important part of the Water Convention programme of work has been dedicated to the effects of climate change and advancing climate change adaptation in transboundary basins. Cooperation among countries in a shared basin increases the opportunities to adapt to greater climate variability. It has been shown that basin-wide cooperation improves opportunities to prevent and reduce the impacts of drought and floods. The approaches developed and recommended by the Water Convention help countries to identify measures and financing to adapt to climate change and to decrease the risk of disasters.

SUCCESS STORIES

FRAMEWORK AND MEASURES FOR ADAPTATION TO CLIMATE CHANGE IN THE NEMAN RIVER BASIN

A Strategic Framework for Adaptation to Climate Change in the Neman River Basin was developed with the support of the Water Convention in the period 2012–2014. Based on an assessment of the possible impact of climate change, Belarus and Lithuania agreed on a list of measures to address climate variability.

The highly participatory process, comprising a series of meetings, helped expert communities and stakeholders in the riparian countries define climate impacts in the basin, as well as ways to deal with them. The measures agreed included: a) developing water efficient, water-saving and clean technologies; b) improving engineering projects and technologies for hydropower; c) improving water supply and sanitation systems; and d) adapting water transportation to the increased frequency and amplitude of water level fluctuations. Water and climate monitoring in the basin were assessed and practical recommendations for their modernization were agreed.

CLIMATE CHANGE ADAPTATION IN THE DANUBE RIVER BASIN

The ICPDR benefited from guidance of the Water Convention in developing the first Strategy on Adaptation to Climate Change for the Danube adopted in 2012. Its revision in 2018 took further steps to promote transboundary action. The Strategy serves as a reference document for national strategies and activities in riparian countries of the Danube by providing guiding principles and outlining suitable adaptation measures for national and international river basin management plans. Ecosystem-based measures aim to reduce the negative effects of a changing climate. Behavioural and managerial measures aim to raise awareness about potential future conditions and to support sustainable management. Risk management plans for water scarcity also play a vital role in advancing best practices in this area. Technological measures focus on infrastructure such as dams, reservoirs, fish ladders or water networks. Policy approaches aim to support the national, international and basin-wide coordination of activities. The ICPDR is currently providing valuable advice and sharing its experience with other basins through the "Global network of basins working on climate change adaptation" under the Water Convention. The ICPDR also contributes to thematic workshops on climate change adaptation under the Water Convention.

ECOSYSTEM-BASED ADAPTATION IN THE DNIESTER BASIN

The Water Convention, together with its partners, such as the Organization for Security and Co-operation (OSCE), United Nations Development Programme/Global Environment Facility (UNDP/GEF) and United Nations Environment Programme (UNEP), has been supporting transboundary cooperation in the Dniester Basin, which is shared by Moldova and Ukraine, since the early 2000s. This support resulted in the creation of a framework for ecosystem-based adaptation and the implementation of actions on the ground. In particular, the Strategic Framework for Adaptation to Climate Change in the Dniester River Basin and its Implementation Plan, adopted in 2015 and 2017, respectively, identifies joint adaptation options at the basin level, including ecosystem-based adaptation (EbA) actions that require transboundary cooperation. For example, reforestation activities, low-scale restoration of floodplains, fish conservation, and dedicated awareness-raising have already been implemented, and a constructive dialogue on the new rules for the operation of the Novodnestrovsk hydropower dam has been initiated. These EbA related activities have not only increased basin resilience. They have also improved and promoted transboundary water cooperation more broadly, such as the entry into force of the Treaty between the Republic of Moldova and Ukraine on Cooperation in the Field of Protection and Sustainable Development of the Dniester River Basin in 2017 and the establishment of the bilateral Dniester Commission in 2018. Under the Dniester Commission, there are currently dedicated thematic working groups on ecosystems, biodiversity, and river basin planning and management, which implement joint activities on EbA. The Water Convention continues to support the development and implementation of the Treaty as well as the functioning of the Commission.

THE TISZA RIVER – TRANSBOUNDARY FLOOD MANAGEMENT ENABLING BETTER CLIMATE CHANGE ADAPTATION

Five countries (Ukraine, Romania, Slovakia, Hungary and Serbia) share the Tisza River Basin – a tributary to the Danube on the Western side of the Carpathians that is prone to flooding. The countries are intensively working together to decrease the potential risks of climate change, such as floods. The principles of the Water Convention have helped mobilize political will for transboundary water cooperation. Alongside the establishment of Tisza River Basin Management Plans, the joint work has resulted in new approaches to flood management. These include a combination of flood protection embankments, improved maintenance of the floodplains, and making reservoirs available in case of floods. The system is supported by state-of-the-art flood computer modelling technology.

INITIATION OF CLIMATE CHANGE ADAPTATION PROCESS IN THE MEKONG BASIN

The Lower Mekong Basin (shared by Cambodia, Laos, Thailand and Vietnam), with its Mekong River Commission (MRC), is one of the most advanced basins in terms of transboundary climate change adaptation. The Water Convention supported the MRC in the initial development of their Climate Change and Adaptation Initiative, which was established in 2009. In particular, the Guidance on Water and Adaptation to Climate Change was applied and expert support was provided to analyse the background, methods and tools for transboundary climate change adaptation in the Lower Mekong Basin. In addition, in 2012, a study visit to Europe, under the overall theme "Transboundary Adaptation to Climate Change" was organized by the Water Convention and its partners so that the representatives of the Mekong Basin could receive new knowledge in developing adaptation frameworks, European approaches to transboundary adaptation, as well as the implementation of concrete adaptation measures. These activities served as a basis for further development and implementation of the Mekong Climate Change Adaptation Strategy and Action Plan adopted in 2017, as well as their integration and synergies with the national climate policies in the basin.

ADAPTING TOGETHER ACROSS BORDERS AND REGIONS WITHIN THE GLOBAL NETWORK OF BASINS WORKING ON CLIMATE CHANGE ADAPTATION

The Water Convention together with the International Network of Basin Organizations (INBO), under the leadership of the Netherlands and Switzerland, succeeded in engaging different basins – from the Amazon to the Mekong – to contribute to the Global network of basins working on climate change adaptation, initiated in 2013. This is the only global network focusing specifically on transboundary climate change adaptation involving basin organizations from different continents and regions. There are currently 18 basins that are part of the Global network, and more basins are welcome to join. Every year the basins of the Global network benefit from new knowledge and experience, as well as reports focused on recent transboundary adaptation activities in each basin. In addition, the network provides an opportunity for peer learning and offers technical advice on how to engage various stakeholders, such as local communities and civil society, as well as how to mobilize funding to ensure efficient and inclusive climate change adaptation in transboundary basins.

SOURCES
Success stories: 22.
Interviews: Nikolaj Denisov, Ivan Zavadsky, Tamara Kutonova and György Rátfai.
Other sources:
ICPDR: https://icpdr.org/main/


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Chapter 3: THE WATER CONVENTION CONTRIBUTES TO THE WELFARE OF SOCIETIES IN TRANSBOUNDARY BASINS AND BEYOND

> **"I would like to reconfirm our commitment to efficiently implement the Convention and ensure consistency in promoting cross-border cooperation policies in the field of water management and protection of Dniester and Prut transboundary watercourses, for the benefit of our population, economy and ecosystems."**
> **Iuliana Cantaragiu, Minister of Environment of the Republic of Moldova**

Implementation of the Water Convention and the application of its principles contribute to the welfare of societies in transboundary basins and beyond. An effective cooperation in shared basins often yields great benefits, such as better health from improved water quality, greater food security thanks to more stable access to irrigation, and a reduced risk of water-related disasters. Employment and reduced poverty, improved access to services, such as electricity and water supply, greater satisfaction thanks to the preservation of cultural resources or access to recreational opportunities, are additional positive features. The Convention contributes to improving contacts between populations across borders, thereby facilitating joint solutions of common problems.

SUCCESS STORIES

LAKE PEIPSI/CHUDSKOE COOPERATION IMPROVES THE LIVELIHOOD OF COMMUNITIES

Situated on the border between Estonia and the Russian Federation, Lake Peipsi/Chudskoe is the largest transboundary lake in Europe. The lake is a natural border between the inhabitants of the territories around the lake, which has historically resulted in a different cultural composition of the eastern (Russian) and the western (Estonian) peripheries of the lake basin. The majority of the population on the Russian side of the border is Russian and two minority groups reside on the Estonian side of the border. Russian Old-Believers, a distinct cultural minority group among the majority of the Estonian population, live in the central part of the basin in shoreline rural communities. In the southern part of the basin there are settlements of the Setu people whose language is very close to Estonian but, unlike Estonians, their religion is Christian Orthodox. These minorities contribute to the cultural heritage of the region and, traditionally, they are dependent on the lake. Commercial fisheries and agriculture are important sources of income.

Authorities and NGOs have made considerable contributions to the livelihood and welfare of these lake communities. Two achievements are particularly important and include cooperative efforts to make sure that the quality of the water in the lake is sufficiently good for fish and that fish populations are protected and sustainably managed. A Fishery Agreement from 1994 and a Transboundary Water Agreement from 1997 are important components of this work, with the establishment of the Estonian-Russian Fishery Commission and the Estonian-Russian Transboundary Water Commission as the joint bodies for cooperation.

COOPERATION ON THE TORNE RIVER CONTRIBUTES TO CULTURAL EXCHANGE AND ECONOMIC DEVELOPMENT

The Finnish-Swedish cooperation on the mainly Arctic Torne River also contributes to transboundary cooperation and the welfare of societies beyond water. The Border River Commission acts as a bridge between the countries in matters concerning the river, both through its own initiatives and in connection with other state, municipal and civil society initiatives.

In addition to components of cooperation, such as flood management, shared infrastructure in sewage water treatment, joint regulations on fishing to increase the population of the Baltic salmon and other species, cooperation is an important factor for cultural exchange and economic development. As a result, trust is built, and cross-border research and cultural projects are emerging, which includes the involvement of the indigenous Sami people. On both sides of the river, tourism is an important emerging sector that is very much helped by sound, transboundary management of the river.

IMPROVED DRINKING WATER SUPPLY AND WASTEWATER TREATMENT IN GHANA

The participation of countries from all regions of the world in the activities of the Water Convention has boosted international cooperation and the sharing of experience.

Ghana became a Party to the Water Convention in 2020. A state-of-the-art wastewater treatment plant, built by Hungarian companies, was inaugurated in Kumasi, Ghana, in 2021, contributing to improved living standards for more than two million people living in the city and the surrounding area. Two other wastewater treatment facilities are set to be built by Hungarian companies in Takoradi and Tamale. Takoradi itself has 600,000 inhabitants, but the plant will also serve the entire Western region with over three million people. Tamale is a city of 340,000 inhabitants. As Tamale is the centre of the Northern region, up to 2.4 million people stand to benefit from this investment. A special water purifying unit was also installed in Akim Wenchi in September 2021, which can produce water for over 3,000 people daily in the city of 12,000 inhabitants.

UNDERSTANDING AND PROMOTING THE PERSPECTIVE OF WOMEN IN WATER MANAGEMENT

Women play a critical role in water management, including in response to climate change, due to their local knowledge and leadership. They are at the centre of sustainable resource practices at the household and community level. Guidance documents developed under the Water Convention provide recommendations and examples on how to advance the role of women in water management and transboundary water cooperation. The Water Convention programme of work for 2022–2024 mainstreams gender in several activities under the Convention.

DEVELOPING COOPERATION IN THE PUTUMAYO-IÇÁ RIVER BASIN

The lack of integrated natural resources management has contributed to undermining the social and environmental conditions in the Putumayo-Içá River Basin (a tributary of the Amazon River) shared by Brazil, Colombia, Ecuador and Peru. Together with its partners, the Water Convention supported a consultation meeting hosted by Colombia in April 2018, which initiated a dialogue between Colombia and Peru on joint actions for the sustainable management of the transboundary water resources in the basin. The ensuing steps have led to a GEF project, approved in 2022. The project seeks to strengthen the enabling conditions so that the countries can jointly manage the shared freshwater ecosystems of the Putumayo-Içá River Basin. Improving governance for integrated water resource management and an equitable access to resources, including for women and other vulnerable communities, is an agreed-on objective for future work in the basin, which comprises some of the most remote and economically underdeveloped areas of the four countries.

SOURCES
Success stories: 5, 9.
Interviews: Gulnara Roll, Harry Liiv, Johan Antti, Viktor Oroszi and Patricia Marity.
OTHER SOURCES:
Peipsi Center for Transboundary Cooperation: https://ctc.ee/peipsi-ctc
Global Environment Facility, Project Identification Form (PIF), "Integrated watershed management of the Putumayo-Içá river basin".

Chapter 4: THE WATER CONVENTION SUPPORTS ECONOMIC DEVELOPMENT

Individual economic sectors, such as aquaculture, irrigated agriculture, mining, energy generation, industrial production, nature-based tourism or water-based transport, have specific requirements in terms of the quantity and quality of water and the timing of their water needs. Improved transboundary water management can make it possible to provide the required volume of water of the right quality at the right time and thus support the development of economic sectors.

The Water Convention also supports economic development by:

- Promoting cost savings in the development and management of water-related infrastructure through better planning of infrastructure, cooperative operation of infrastructure, reduced damage to infrastructure, and improved water quality (reducing the need for drinking-water treatment).
- Reducing the economic damage of floods and droughts.
- Improving the fiscal position of individual countries by reducing the cost (and thus the need to provide public financing) associated with protecting economies from floods, protecting the natural environment from pollution, and providing water for economic activities.
- Attracting financing to implement projects by serving as a blueprint for legal agreements that establish the cooperation framework that financiers often require, and by collaborating with international financial institutions and other partners to develop the capacities of countries and river basin organizations to attract financing.

Table 1

PAST AND POTENTIAL ECONOMIC BENEFITS OF TRANSBOUNDARY WATER COOPERATION IDENTIFIED IN SEVEN BASINS THROUGH PROJECTS SUPPORTED BY THE WATER CONVENTION

	Alazani/ Ganykh	Cubango-Okavango	Drina	North Western Sahara Aquifer	Sava	Sio-Malaba-Malakisi	Syr Darya
Development of agricultural sector (including fishing)	•	•	•	•	•	•	•
Development of tourism sector	•	•			•		•
Protection of existing economic activities (due to improved security in the supply of energy and/or water)			•	•		•	•
Cost savings (through improved development and management of water-related infrastructure)	•		•	•	•		
Reduced economic losses from floods or droughts	•	•	•		•		•
Increased land values along the river		•					
Attraction of investments in infrastructure projects (e.g. energy, irrigation, water, roads)		•				•	
Improved public finances (increased tax revenues, reduced public spending)		•				•	

SUCCESS STORIES

SUPPORTING BALANCED ECONOMIC DEVELOPMENT IN THE DRIN RIVER BASIN

The Drin basin system extends over 20,361 km^2 across Albania, Greece, Kosovo[1], Montenegro and North Macedonia, and supports the economic activity of over 1.6 million people. In a Memorandum of Understanding signed in 2011, the riparian countries committed to promoting sustainable joint action for the integrated management of the Drin Basin's shared water resources. The GEF Project "Enabling Transboundary Cooperation and Integrated Water Resources Management in the Extended Drin River Basin" (implemented by UNDP and executed by Global Water Partnership (GWP) through GWP-Mediterranean (GWP-Med) in cooperation with the Water Convention Secretariat) has supported the implementation of the MoU since 2016.

As part of their cooperation, the Drin countries have developed a joint Transboundary Diagnostic Analysis (TDA) of the river basin, as well as a Strategic Action Programme (SAP). The TDA includes the use of scenarios that assess the level of water stress throughout a year as a result of the development of economic activities, the expansion of water supply networks and climate change. Major increases in water use are expected in the agriculture/irrigation sector in the coming years due to the development of irrigation schemes: an increase of 30 per cent of the current consumption for Albania, Montenegro and North Macedonia, and 50 per cent for Kosovo by 2050. Under current conditions, there is sufficient water available for all the different socioeconomic uses, but there is a high probability that climate change will in the future lead to severe water shortages in certain sub-basins with high irrigation needs during the June-August period (such as in Lake Prespa and the Black Drin River). As a response, one of the goals of the SAP is to establish conditions for the sustainable use of water and its supported ecosystems. The SAP includes a set of related objectives with regard to the knowledge base, capacity development, and policies and actions to be achieved by 2030.

[1] United Nations administered territory under Security Council Resolution 1244 (1999).

SUPPORTING SUSTAINABLE AGRICULTURE AND ENERGY PRODUCTION IN THE IBERIAN PENINSULA

Portugal and Spain share the rivers Minho/Miño, Douro/Duero, Tagus/Tejo/Tajo and Guadiana, which account for most of their scarce water resources. The two countries have a long history of establishing partnerships and treaties for these rivers dating back to the nineteenth century, mostly to define boundaries and uses of the rivers, which culminated with the Agreement on Cooperation for the Protection and Sustainable Use of the Waters of the Spanish-Portuguese Hydrographic Basins (1998), better known as the Albufeira Convention. The Water Convention had provided insights that helped update all former specific agreements in force between the two countries into a unified framework agreement on their transboundary basins.

The Albufeira Convention facilitates sustainable agricultural and energy production and, at the same time, protects water-related ecosystems. It requires Portugal and Spain to coordinate actions to prevent and control situations of drought and water scarcity, and to undertake joint studies on drought and water scarcity. The uses of water for energy are dominant in the shared basins (in the Douro/Duero and Tagus/Tejo/Tajo in particular) but agricultural uses are also very important in large territories of both countries. These uses have benefited from the existence of a well-defined flow regime. The current flow regime is set out in the second Protocol of Revision of the Convention, approved in 2008, which establishes minimum flow values at selected points near the border according to specific hydrometeorological criteria. The reporting of compliance with these flows is made quarterly and yearly. The flow regime defined in the Albufeira Convention is included in the models of allocation and reservation of water resources to meet the various water uses and demands in the preparation of the basins' hydrological plans.

IMPROVED OPERATION AND MAINTENANCE OF WATER INFRASTRUCTURE TO SUPPORT AGRICULTURE IN THE CHU-TALAS RIVER BASIN

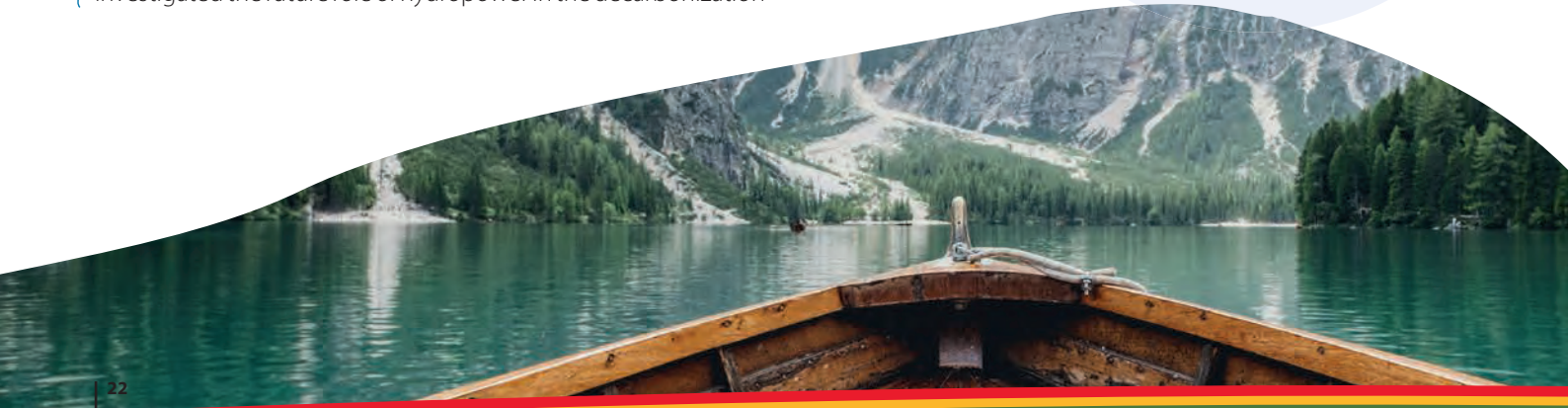
The Chu and Talas rivers, shared by Kazakhstan and Kyrgyzstan, provide essential resources for the irrigation of their vast agricultural lands, supporting the livelihoods of over three million people and providing opportunities for the generation of hydropower. All the facilities responsible for regulating the rivers, such as dams, water reservoirs and canals, are located upstream in the territory of Kyrgyzstan, which means that Kazakhstan is dependent on the operation and proper maintenance of these facilities. In 2002, the two countries signed the Agreement on the Use of Water Management Facilities of Intergovernmental Status on the Rivers Chu and Talas to establish a legal basis for the joint operation of the water management infrastructure. In 2006, with support from OSCE, United Nations Economic and Social Commission for Asia and the Pacific and the Water Convention secretariat, Kazakhstan and Kyrgyzstan established a permanent commission to determine the operational regime for the water infrastructure, as well as their shares in funding the operation and maintenance costs.

The work of the Chu-Talas Water Commission, supported by the Water Convention secretariat and many other partners, has enabled joint and transparent decision-making on water allocation and maintenance costs by the two Parties, and it has also addressed dam safety and climate change adaptation issues. Between 2004 and 2021, Kazakhstan contributed over US$ 5.5 million to finance the operation and maintenance of the infrastructure. Since 2014, repairs and upgrades have been carried out for the Kirov and Orto-Tokoi reservoirs, the Western and Eastern Large Chu canals, and the Chumysh waterworks. A joint Strategic Action Plan (SAP) for 2022–2030 has been approved.

PROMOTING COST-EFFECTIVE HYDROPOWER GENERATION IN THE DRINA RIVER BASIN

In 2017, the Water Convention supported the development of an assessment of resource management trade-offs and benefits across sectors to promote dialogue and the identification of joint actions in the Drina River Basin, which is shared by Bosnia and Herzegovina, Montenegro and Serbia. One of the strategies analysed was the coordinated operation of hydropower dams to maximize power generation at the basin level (rather than at the individual country level). Modelling showed that, over the period 2017–2030, cooperative operation of hydropower dams could deliver more than 600 GWh of electricity. Given the difference in cost between generating electricity through hydropower plants compared to thermal plants, cooperative action would create overall system savings of US$ 136 million over the period 2017–2030. It would also result in less fuel imports and a reduction in greenhouse gas emissions. Analytical work in 2021 further investigated the future role of hydropower in the decarbonization of the energy sector and in climate change adaptation in the three riparian countries in order to optimize the resources available, minimize negative impacts on the environment, and maximize the multi-sectoral benefits of projects.

These findings support decision-making on hydropower at the various levels and has led to revisiting flow regulation from the perspective of reconciling the different needs, including flood protection and ecological flow. The nexus assessment exercise strengthened capacity on integrated water-energy basin planning in the three countries. A high-level dialogue, involving policymakers, power companies, financial institutions, international organizations and civil society representatives, is leading to the development of a "Nexus Roadmap" for the basin and has contributed to several political processes and cooperation initiatives, e.g. the South East Europe 2020 Strategy, the Drina River Basin Management Project (Drina GEF) and the Green Agenda for the Western Balkans.



REDUCING ECONOMIC DAMAGE FROM FLOODS IN THE DANUBE RIVER BASIN

The Water Convention served as a blueprint in the development of the Convention on Cooperation for the Protection and Sustainable Use of the Danube River, which was signed in 1994. Through the centuries, the Danube countries have suffered from many disastrous flood events. The accumulated cost of the floods in 2010, 2013 and 2014 alone exceeded €8.4 billion. Since 2004, the International Commission for the Protection of the Danube River (ICPDR) has adopted successive strategies and action plans to reduce the danger of flooding and its impacts. The 2021 Danube Flood Risk Management Plan, which is based on the EU Floods Directive, focuses on the strategic management of flood risks across the entire river basin. A core foundation of the Plan is the practical application of the Solidarity Principle. As structural flood protection, such as dykes and demountable barriers, may also lead to more water transferring downstream during extreme flood events, the Plan supports every effort to retain rainfall and store excess water locally before releasing it downstream. Natural water retention measures include the protection of wetlands, the restoration of flood plains, and land-use changes such as the increased planting of grasses and forest areas.

REDUCING ECONOMIC DAMAGE FROM DROUGHT IN THE DNIESTER RIVER BASIN

The Dniester is the largest river in Moldova and the fourth largest in Ukraine. It flows along a 1,350 km stretch with about 8.5 million people living in the basin. The Dniester River Basin plays a key role in the main socioeconomic sectors in the two countries, including agriculture, aquaculture, mining, urban activities, hydropower generation, the production of building materials, and the woodworking industry, among others. The south of Moldova and Ukraine traditionally belongs to a farming area considered as risky. Local watercourses in the area are prone to depletion, becoming completely shallow in dry years that happen frequently. Over the past 120 years, over seventy droughts have been recorded.

Prior to the construction of the Dniester system of reservoirs in 1981–1987, even less severe droughts would bring significant crop losses and create problems with water resources for non-agricultural industries and other water consumers. The operation of the reservoirs has ensured guaranteed flow rates at water intakes and met the needs of irrigated lands. But major droughts still cause massive economic damage. In Moldova alone, the damage from the droughts in 2007 and 2012 was estimated at over US$ 1 billion and US$ 1.2 billion, respectively.

In order to fulfil their obligations under the Water Convention, Moldova and Ukraine – with support from OSCE, UNECE and UNDP – signed the Dniester River Basin Treaty in 2012 and established the Dniester Commission in 2018. In 2021, the countries endorsed a Strategic Action Programme that includes, among its priority measures for the first 5-year period, the improvement, adoption and application of the rules for the operation of the Dniester system of reservoirs, as well as the development of a drought management plan.

SAVING PUBLIC FINANCIAL RESOURCES THROUGH COST-EFFECTIVE MEASURES IN THE DANUBE

To clean up and prevent pollution, improve natural water retention, and re-establish migration routes for fish in the Danube river requires funding on a massive scale. Each Danube country is responsible for financing the projects within its borders, and a significant amount of money has been spent to help the Danube countries meet environmental goals: between 2006 and 2018 over €22 billion was invested in water treatment facilities alone. Through their cooperation activities, Danube countries have learned that while investing in environmental restoration is crucial, it is even more cost-effective to prevent environmental deterioration from occurring in the first place. Both approaches are essential to achieving good water quality and healthy conditions for riverine habitats. In this regard, national governments are taking the lead with the help of several EU-supported funding programmes, and private owners and operators of facilities that have an impact on the region's water.

SUPPORTING THE ATTRACTION OF GEF FUNDING

The partnership between the Water Convention and the Global Environment Facility (GEF) has proved to be mutually beneficial. The dozens of International Waters Focal Area projects funded by GEF foster the objectives of the Water Convention around the world, even among countries that are not (yet) parties to the Water Convention. For example, GEF support to Orange-Senqu, Okavango, Mekong and Amazon River commissions has been instrumental in strengthening regional cooperation in water resources management towards formal legal and institutional cooperative frameworks. At the same time, the Water Convention has facilitated access to GEF funding in several basins in Africa, Asia and Europe. Activities under the Water Convention have facilitated the formulation of eight GEF projects in the Bug and Neman, Chu-Talas, Dniester and Drin river basins, as well as the Senegalo-Mauritanian Aquifer basin, which together have attracted a combined US$ 27.4 million of GEF funding (and expected co-financing of US$ 363 million). The Water Convention has also contributed towards attracting GEF funding in the Dnieper, Kura, Western Dvina and Panj river basins and Lake Skadar/Shkoder basin for a combined US$ 31.5 million (and expected co-financing of US$ 310 million).

ATTRACTING COOPERATION FINANCE IN THE VISTULA RIVER BASIN

Belarus, Poland, Slovakia and Ukraine – all Parties to the Water Convention – share the Vistula River Basin. The basin covers 193,960 km^2, of which 87 per cent is in Poland. As pollution generated in upstream countries affects the water quality in Poland, Polish authorities have been working with their counterparts in Belarus and Ukraine for over 20 years to improve water quality in the Vistula. In the early 2000s, the National Fund for Environmental Protection and Water Management of the Republic of Poland (NFEP&WM) developed the programme "Investments in wastewater management outside the country" and provided a grant of 5.5 million Polish zloty (PLN) to modernize sludge management facilities at Brest Wastewater Treatment Plant in Belarus. The current edition of the programme runs from 2016–2023 with a budget of PLN 100 million to help fund preferential loans. Financial support covers up to 90 per cent of the eligible costs of projects involving the construction, extension or modernization of municipal wastewater treatment plants (including sludge management and drainage), sewage sludge treatment plants and sanitation systems. In 2017, NFEP&WM signed a Memorandum of Cooperation with Ukrainian authorities (City of Lviv and Lvivvodokanal Municipal Company) to support the modernization of the Lviv Wastewater Treatment Plant, for which a Preliminary Feasibility Study was developed. Other cities in Belarus (Kobryn) and Ukraine (Zolkiew, Kamionka Buska and Brody) have shown interest, but implementing cooperation is difficult due to the current geopolitical situation in the region.

SUPPORTING THE ATTRACTION OF FINANCE FOR INVESTMENT PROJECTS

As countries scale up resource mobilization to access the financing they need to address water security (including the impacts of climate change), their capacity to prepare well designed, bankable projects that will attract the limited public and private resources available is critical. In order to help countries sharing transboundary river basins and river basin organizations better understand their funding needs, the diverse sources of funding and financing, and how to prepare bankable projects, the Water Convention has supported the development of guidance and the organization of training workshops in partnership with several international financial institutions. The guidance has been documented in two publications: *Financing Climate Change Adaptation in Transboundary Basins – Preparing Bankable Projects* (World Bank, 2019) and *Funding and Financing of Transboundary Water Cooperation and Basin Development* (UNECE, 2021).

A successful example of funding can be found in the Dniester River Basin. In 2021, two project proposals were developed within the GEF-funded project "Enabling transboundary co-operation and integrated water resources management in the Dniester River Basin" in consultation with the Dniester Commission and under the guidance of the Water Convention and the OSCE. The two project proposals focused on adaptation to climate change in the Lower Dniester (Odesa region, Ukraine), in particular on enhancing the resilience of the Dniester delta area and on preventing coastal erosion and technogenic pollution of the Dniester liman (estuary). Both projects were included in the adaptation plan for the Odesa region as adaptation measures for 2021–2023.

SOCIOECONOMIC BENEFITS OF TRANSBOUNDARY WATER COOPERATION FOR ROMANIA

A Party to the Water Convention, Romania is an active contributor to the activities of the International Commission for the Protection of the Danube River (ICPDR), which is the joint body for transboundary cooperation in the Danube basin. Romania enjoys multiple socioeconomic and environmental benefits of cooperation within the ICPDR, one of them being the sharing of costs for basin management between the 14 riparian countries. For instance, all countries sharing the basin implement measures to attain good water status in line with the requirements of the EU Water Framework Directive. This has not only produced positive health impacts for the population but also allowed countries to share the costs of interventions, thus reducing the burden of expenditures for individual countries like Romania. Having common information and forecasting systems allow the riparian States to minimize the damage from accidental pollution and extreme events. For example, during the 2014 floods on the Sava, Morava and Danube, the Romanian water management authorities were better prepared, implementing effective interventions thanks to the warnings received from the common flood risk management system.

Another benefit of cooperation for Romania is that investments in the basin are coordinated at the transboundary level and are thus targeted where they are most needed. Basin assessments and the Danube River Basin Management Plan serve as a good foundation for donor financing as potential investors are provided with information about the most pressing basin-wide issues, workable solutions, and the projected impacts of investments. As a result of the assessments made in the framework of regional projects under the Danube River Protection Convention and the Convention on the Protection of the Black Sea Against Pollution, between 1995 and 2019 Romania has attracted investments in the amount of US$ 559 million from the World Bank, €760 million from the European Bank for Reconstruction and Development, and €866 million from the European Investment Bank for national-level implementation of water management projects in the Danube basin, including urban water treatment, drinking water supply, nutrient pollution reduction and flood risk management. Many other benefits, such as the avoidance of conflict with co-riparians, are hard to quantify but continue to improve the lives of millions of people that depend on the Danube's water resources in Romania.

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Chapter 5: THE WATER CONVENTION PROMOTES REGIONAL ECONOMIC INTEGRATION

> **"The Water Convention has become a truly global instrument which works to support regional mechanisms."**
> **Shavkat Khamraev, Minister of Water Resources of Uzbekistan**

Regional economic cooperation can generate major economic benefits for the countries involved. Such cooperation is characterized by and leads to a number of changes in economic relations, the emergence of new economic opportunities, and the generation of economic efficiencies, making it possible, for example, to take advantage of economies of scale or allowing countries to specialize in the economic activities in which they are most productive.

The cooperation activities promoted and supported by the Water Convention contribute to building trust among the countries that share a transboundary basin. This increased trust is often a prerequisite to carrying out development cooperation activities, such as the development of transnational infrastructure networks (for example, for water supply, energy transmission or road transport), cross-border investments (for example, in the irrigation or tourism sectors), or regional markets for goods, services and labour (including through improved navigation of transboundary rivers).

Table 2

PAST AND POTENTIAL BENEFITS OF REGIONAL ECONOMIC INTEGRATION FROM TRANSBOUNDARY WATER COOPERATION IDENTIFIED IN SEVEN BASINS THROUGH PROJECTS SUPPORTED BY THE WATER CONVENTION

	Alazani/ Ganykh	Cubango-Okavango	Drina	North Western Sahara Aquifer	Sava	Sio-Malaba-Malakisi	Syr Darya
Increased trade in energy carriers (such as electricity, natural gas, kerosene) and energy integration	•		•				
Increased trade of goods (including through waterways)				•	•	•	
Increased cross-border tourism		•					
Increased cross-border investments				•	•		
Development of regional markets for goods, services and/or labour		•			•		•

SUCCESS STORIES

PROMOTING REGIONAL ECONOMIC INTEGRATION IN EUROPE

Regional economic integration in the European continent has been driven by the development of the European Economic Community (created in 1957), its transformation into the European Union (in 1992), and the expansion of the European Union to currently include 27 countries. The Water Convention has enabled cooperation between EU and non-EU Member States in several transboundary basins and has helped pave the way for accession. For example, since its establishment in 1999, the ICPDR has played a pivotal role in helping a large number of Danube River Basin countries prepare for accession to the European Union. For the implementation of the Danube River Protection Convention, for which the Water Convention served as a blueprint, the regulatory tools of the EU, namely, the Water Framework Directive and Urban Wastewater Treatment Directive, significantly speeded up reforms in the water and environmental sectors in EU-candidate Danube countries, a precondition to meet the EU legal framework (acquis communautaire). In the early 2000s, specific capacity-building activities were carried out under the Water Convention, supporting Danube countries to better understand the EU directives. These processes in Bulgaria, Croatia, Czech Republic, Hungary, Romania, Slovakia and Slovenia, substantially supported not only the integration of those countries with the EU's "old" members but significantly fostered the regional integration of the Contracting Parties of the Danube River Protection Convention in other water-related economic sectors.

SUPPORTING JOINT INVESTMENT PLANNING IN THE SIO-MALABA-MALAKISI BASIN

Under the leadership of the Intergovernmental Authority on Development, between 2017 and 2020, the Water Convention Secretariat and the IUCN supported Kenya and Uganda to develop their cooperation in the Sio-Malaba-Malakisi (SMM) basin. The multi-stakeholder process started with a situational analysis and an assessment of the benefits of cooperation, and progressively moved towards the development of a basin investment plan and financial sustainability strategy (BIP-FSS). The objectives of the BIP-FSS are: (a) to support the identification, preparation, prioritization, sequencing and implementation of projects; and (b) to ensure the financial sustainability of the SMM institutional framework and SMM investment programme.

The BIP-FSS includes a basin investment framework (with a methodology for prioritizing projects), a basin investment programme (including eight priority projects for a combined value of US$ 120 million), and a financial sustainability strategy (including 24 actions organized around three pillars). The BIP-FSS will help Kenya and Uganda manage their cooperation efforts, as well as attract financing to spur regional economic development in the Sio-Malaba-Malakisi basin.

Furthermore, Kenya and Uganda have used the provisions of the Water Convention to develop an arrangement for water cooperation in the SMM basin in the form of a Memorandum of Understanding.

FACILITATING TRADE BY INVESTING IN NAVIGATION IN THE SAVA RIVER BASIN

The Sava River basin is shared by Bosnia and Herzegovina, Croatia, Montenegro, Serbia and Slovenia. Before the conflicts of the 1990s, the Sava River played an important role in the freight transport network of the former Yugoslavia with an estimated 5.2 million tons of bulk cargo transported in 1990 when the river was navigable nearly 300 days a year. Since then, the hydraulic infrastructure in the Sava River has been poorly maintained and only partially modernized and expanded, hampering regional economic integration and suppressing growth. As a result, inland waterway traffic volumes along the Sava plummeted. By 2018, navigability in the Sava was constrained to only 160 days a year, and transported freight amounted to only 877,000 tons.

The Framework Agreement on the Sava River Basin (FASRB), signed in 2002, calls, among other things, for cooperation in the establishment of an international regime of navigation on the Sava River and its navigable tributaries. To implement this aspect of the FASRB, the Sava Commission is given the capacity for decision-making on its work in the field of navigation.

Building on the cooperative framework provided by the FASRB, in 2021 the Sava countries agreed with the World Bank on a two-phase regional investment programme for transboundary water management for a total value of US$ 332 million. This programme includes, among others, investments to upgrade the navigability of the Sava waterway and to modernize ports in order to improve market access, reduce transport and logistics costs, and, in the long run, facilitate improved regional trade. Investing in the proposed improvements to navigation along the Sava River are expected to result in an economic internal rate of return of 10.1% and an economic net present value of €22.4 million in 2019.

PROMOTING REGIONAL ECONOMIC DEVELOPMENT IN THE CUBANGO-OKAVANGO RIVER BASIN

Angola, Botswana and Namibia have been cooperating in the knowledge and management of the Cubango-Okavango River Basin (CORB) in the framework of the Permanent Okavango River Basin Water Commission (OKACOM) since 1994. In 2015, the OKACOM secretariat requested support from the Water Convention to develop an assessment of the benefits of cooperation in the CORB, and from the World Bank to develop a Multi-sector Investment Opportunities Analysis (MSIOA). The benefit assessment supported by the Water Convention showed that while cooperation in the CORB has generated more benefits than expected, there are opportunities to deliver more and better distributed benefits, mostly related to regional economic integration. The MSIOA recommended the adoption of three basin-wide strategic development programmes around three pillars: a Livelihood Enhancement Programme, a Tourism Investment Framework, and a Cooperative Infrastructure Development Programme. The OKACOM secretariat has been working with the three Member States, the African Development Bank, the European Union, UNDP-GEF and the World Bank to develop investments along those three programmes, and specific projects have been launched within the programmes on livelihoods and tourism.

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Chapter 6: THE WATER CONVENTION SUPPORTS ADDRESSING INTERSECTORAL TRADE-OFFS AND TENSIONS

> **"The Water Convention's nexus approach gives a good example and a lot of guidance and practical experience."**
> **Ambassador Anita Pipan, Permanent Representative of the Republic of Slovenia in Geneva**

The Water Convention takes into account all sectors related to the use and protection of transboundary river, lake and aquifer basins. Intersectoral trade-offs and tensions are a common feature in shared basins, and the principles of the Convention aim to establish a dialogue involving all the important sectors and stakeholders, in order to identify and agree on beneficial solutions. The potential value of coordination and integrated planning across sectors and at the basin scale is increasingly recognized. The agriculture and energy sectors are the largest users of water and, accordingly, need to take a proactive role in proposing solutions and investments that consider the needs of all water-using sectors and the environment.

Among the highest-ranking enabling factors in the identification and implementation of integrated or so-called "nexus" solutions are solid transboundary cooperation, shared data and information, readiness for compromise and synergies, and an awareness of options and benefits for cross-sector, transboundary trade-offs. These enabling factors depend largely on whether there are joint institutions in place to create an enabling environment. While not all transboundary basins profit from an institutional framework for transboundary cooperation, joint bodies established in line with the principles of the Water Convention play a key role as facilitators or even catalyzers of nexus solutions and investments.

SUCCESS STORIES

PROTECTION AGAINST EROSION IN THE ALAZANI/GANYKH RIVER BASIN

The Alazani/Ganykh River is of great social and economic importance for both Azerbaijan and Georgia. The two countries have participated in a number of regional projects focusing on the management, monitoring and assessment of transboundary water resources, including the Alazani/Ganykh participatory assessment of the water-food-energy-ecosystems nexus in 2013–2014. In the assessment, supported by the Water Convention, multiple linkages were identified among the different basin resources. Household use of fuelwood and deforestation was found to lead to erosion and sedimentation, loss of ecosystem services, and degradation of the hydrological regime. Potential solutions to improve sustainability and to increase benefits from the basins' resources, commonly requiring action by or cooperation with economic sectors, were also explored. Such solutions include facilitating access to modern fuels, such as gas, to tackle the erosion problem.

These approaches are reflected in a number of measures being taken by the Government of Georgia at the national and basin level, including the elaboration of national socioeconomic development plans and the development of new legislation for the Kakheti region. Measures were introduced to improve living conditions and ensure sustainable access to food, water, energy and environmental resources. From 2013 to 2021, about 50,000 new consumers in 178 villages across eight municipalities of Kakheti were connected to the gas network, thus decreasing the use of fuelwood and deforestation. Stakeholders in renewable energy (policymakers and investors) in Azerbaijan recognized the importance of the nexus approach for renewable energy development.

TOWARDS INTEGRATED DEVELOPMENT OF GROUNDWATER AND SURFACE WATER RESOURCES IN THE SENEGAL-MAURITANIAN AQUIFER BASIN

The Senegal-Mauritanian Aquifer Basin (SMAB) has a surface area of 331,450 km^2 and an estimated population of over 16 million inhabitants. It is shared by The Gambia, Guinea-Bissau, Mauritania and Senegal. Senegal and Guinea-Bissau acceded to the Water Convention in 2018 and 2021, respectively. Cooperation is essential because the aquifer is under pressure due to the increased demand brought about by population growth, rapid urbanization and the development of agriculture.

As part of its accession process to the Water Convention, Senegal requested support for the development of a cooperation initiative on the aquifer. The Regional Working Group for Transboundary Cooperation on the SMAB was established in April 2020, bringing together four governments, the Organization for the Development of the Gambia River and the Organization for the Development of the Senegal River. A vision for transboundary cooperation in the SMAB was agreed in December 2020.

On 29 September 2021, the water ministers of the riparian countries signed the Ministerial Declaration on the SMAB during the high-level segment of the ninth session of the Meeting of the Parties to the Water Convention. The ministers committed to establishing a legal and institutional framework for transboundary cooperation for the sustainable management of the SMAB, in conjunction with the surface waters of the region.

The regional dialogue on the SMAB is supported by Geneva Water Hub, the International Groundwater Resources Assessment Centre and the Water Convention secretariat, with funding from the Swiss Agency for Development and Cooperation and the European Union.

SUSTAINABLE HYDROPOWER AND NAVIGATION IN THE DANUBE RIVER BASIN

Danube basin countries in the framework of the ICPDR have developed guiding principles for sustainable hydropower development and for inland navigation, which aim to strike the right balance between economic development and environmental needs in the basin. As an honest broker, the ICPDR helps facilitate knowledge-sharing between hydropower, agriculture and navigation sectors in the basin.

The Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube River Basin were finalized in 2007 and were applied across the basin in strategic planning processes related to navigation. In yearly meetings, experiences of their application are shared among administrations, stakeholders and environmental groups. The Guiding Principles on Sustainable Hydropower Development in the Danube Basin were adopted by the ICPDR in 2013 and are regularly used in strategic planning on different levels. They are applied when planning for new hydropower stations as well as when refurbishing old installations.

HYDROPOWER AND ECOLOGICAL FLOW IN THE DNIESTER RIVER

The so-called "spring ecological release" from the Dniester reservoir started in 1988 following the commissioning of the Dniester hydropower plant in Ukraine that significantly changed the hydrological regime of the river, shared by Moldova and Ukraine. The release is usually conducted in April for a duration of 30 days. The main objectives of the release are to provide water for fish spawning areas in flood plains, as well as water for animals and plants of the Lower Dniester floodplains, which encompass three Ramsar sites and a national nature park. During the release, the Dniester plant reduces power production, and other power producers take over to ensure a balanced output across the Ukrainian power system.

In 2020, Moldova and Ukraine jointly commissioned an "analysis of the goals, limitations and opportunities for optimizing the regime of spring ecological reproductive release from the Dniester reservoir". The analysis provided several scenarios and models of the spring ecological water release, and it concluded that more needs to be done to optimize ecological flows, in particular as environmental needs are not fully clarified. These findings inform the work of the bilateral Dniester Commission, which was established in 2018 on the basis of the Dniester Treaty of 2012. The Water Convention and OSCE have supported the development of this cooperation.

BENEFITS OF TRANSBOUNDARY WATER COOPERATION IN THE NORTH WESTERN SAHARA AQUIFER SYSTEM BASIN

There is a long history of cooperation between Algeria, Libya and Tunisia in sharing knowledge and in the management of transboundary water resources of the North Western Sahara Aquifer System (NWSAS). The NWSAS countries are among the pioneer States in terms of cooperation on a transboundary aquifer. However, urgent action is needed to alleviate some of the pressure on the resources as demand continues to rise, especially as the impact of climate change on water resources is likely to intensify.

The NWSAS nexus assessment – prepared with the support of the Water Convention in 2017–2019 – helped the countries jointly identify the benefits of improved transboundary water cooperation. A package of 15 high-priority and implementable solutions was jointly identified. These solutions span from governance and international cooperation to economic and policy instruments and infrastructure and innovation. The recommendations of the assessment offer opportunities to further enhance the benefits of transboundary water cooperation.

The nexus assessment increased the interest of countries to learn from each other, for example, on the use of solar energy for pumping.

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Chapter 7: THE WATER CONVENTION IMPROVES WATER GOVERNANCE AT NATIONAL AND TRANSBOUNDARY LEVELS

> **This Convention offers an operational framework to implement integrated water resources management in practice and at both national and transboundary levels, that can help to prevent potential tensions and differences, contributing to maintain international and regional peace, stability, and security."**
>
> **Inês dos Santos Costa, Secretary of State for Environment (2019-2022), Portugal**

> **Implementation of the Convention enables Kazakhstan to attract international experience for tackling the problems of the country's water sector and participate in addressing water challenges at regional and global levels."**
>
> **Serik Kozhaniyazov, Vice-Minister of Ecology, Geology and Natural Resources of Kazakhstan**

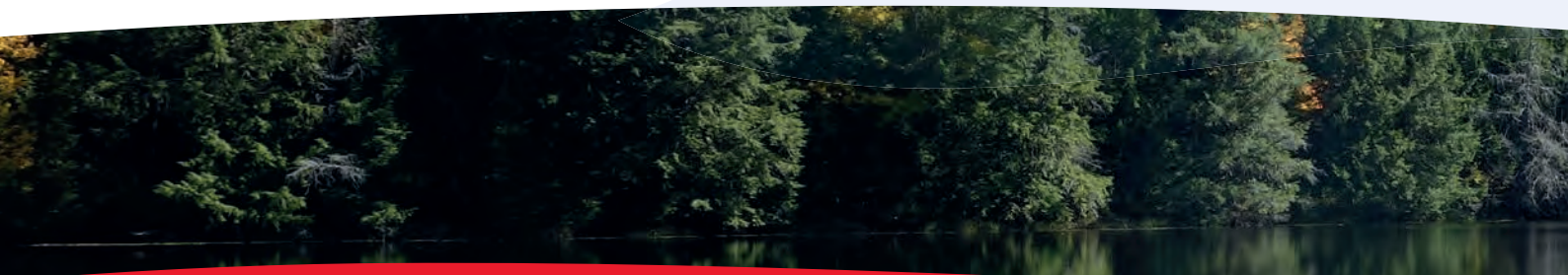
The Water Convention requires riparian Parties to enter into agreements, establish joint bodies, hold consultations, exchange information, and take other steps to pursue cooperative management of transboundary waters. Over 30 years the Parties have accumulated vast experience on how agreements can be set up and formulated, and how joint bodies for transboundary water cooperation can be organized. Many agreements and joint bodies set up by the Parties are prominent examples of transboundary water cooperation and governance.

Implementation of the Convention also improves water governance at the national level. It enhances intersectoral cooperation and stakeholder participation in water resources management and strengthens national water policies. For new Parties, accession to the Convention can prompt a re-boost of domestic water management and governance frameworks and thus improve the status of water bodies within the national borders and beyond.

SUCCESS STORIES

IMPROVED WATER GOVERNANCE DUE TO IMPLEMENTATION OF THE EU WATER FRAMEWORK DIRECTIVE

The importance of sustainable transboundary water management has found a concrete application in the EU's central water legislation, the Water Framework Directive. The Directive explicitly refers to the Water Convention and contributes to the implementation of the Convention by the EU and its members. The Directive, adopted in 2000, ensures two central objectives are applied to the EU's approximately 1.2 million kilometres of river as well as all other water bodies: the prohibition of further deterioration of water quality and achieving 'good status' by latest 2027. The Directive obliges EU Member States to cooperate when a river basin covers the territory of more than one Member State. Many bilateral and multilateral cooperation arrangements and international river basin organizations have since been established, fostering integrated water resources management, governance and knowledge. Implementation of the Directive also facilitated strong interaction between all levels of government and stakeholders, as well as policy and technology innovation.



ADVANCING WATER SECTOR REFORMS THROUGH THE EU WATER INITIATIVE AND NATIONAL POLICY DIALOGUES

Since 2006, the Water Convention, jointly with the Organisation for Economic Co-operation and Development, has been implementing the National Policy Dialogues (NPDs) under the EU Water Initiative (EUWI). Since 2016, the International Office for Water (IOWater) and the Environment Agency Austria (EEA) also support the NPDs. The NPDs have strengthened water governance and integrated water resources management in countries of Eastern Europe, the Caucasus and Central Asia in line with the provisions of the Water Convention, its Protocol on Water and Health, and the EU directives.

Examples of the outcomes of such support in Armenia, Azerbaijan, Belarus, Georgia, Republic of Moldova and Ukraine in 2016–2021[2] include:
- Five basins (Dniester, Kura, Khrami-Debeda, Neman and Western Dvina) progressed with the development of joint legal frameworks.
- Hundreds of knowledge products and analytical equipment were delivered and nine water laboratories were modernized.
- 44 surveys were carried out in rivers, ground- and coastal waters, covering over 1,000 sites.
- Water information systems were modernized to provide transparent data on the status and use of water resources.
- Around 30 million people (40 per cent of the countries' population) are benefiting from 11 new or revised River Basin Management Plans and water monitoring that are closer to EU standards.

Examples of the outcomes of such support in Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan[3] include:
- Progress with strategic planning, including new or updated water strategies, such as a water sector reform strategy in Tajikistan or water safety indicators in Kyrgyzstan.
- Adoption of modern legislation such as a new water code in Turkmenistan.
- Capacity-building and research, such as field research on the state of the transboundary Ural/Zhayik River shared by Kazakhstan and the Russian Federation.

STAKEHOLDER PARTICIPATION TO SAFEGUARD WELFARE AND ECOSYSTEMS IN THE GAMBIA AND SAVA RIVER BASINS

The participatory and concerted management of basin resources by the riparian States, The Gambia, Guinea, Guinea-Bissau and Senegal (the latter two are Parties to the Water Convention), is among the main strengths of the Organization for the Development of the Gambia River. Its main mission is the rational and harmonious exploitation of the Gambia, Kayanga-Geba and Koliba-Corubal river basins. Issues at stake include food self-sufficiency, reduction in vulnerability to climate hazards, and the preservation of important ecosystems. The national and local coordination and monitoring committees are comprised of all stakeholders to ensure that their voices are taken into account in the development and implementation of measures. These committees include national and local authorities, civil society, rural communities, and youth and women's associations.

The Sava River Basin, where all riparians are Parties to the Water Convention, is another example of high level stakeholder participation. Mechanisms are in place for active stakeholder involvement in the activities of the International Sava River Basin Commission, public consultation campaigns and awareness-raising activities through the Sava Youth Parliament and Sava Water Council.

[2] EU Water Initiative Plus (EUWI+) project.
[3] European Union-Central Asia Water, Environment and Climate Change Cooperation (WECOOP) project.

SETTING UP EFFICIENT MONITORING OF SHARED BASINS

In order to make correct decisions in water management it is necessary to know, as far as possible, the situation in the river, lake or aquifer basin. Countries sharing a transboundary basin should agree on the collection and exchange of data and information to develop a shared understanding of the water management situation. This is why the establishment of joint or coordinated monitoring is required by the Water Convention.

In the early 2000s, Parties to the Water Convention implemented pilot projects on joint monitoring in several transboundary river basins, including the Morava (Slovak Republic and Czech Republic), the Bug (Poland, Belarus and Ukraine), the Maros/Mures (Hungary and Romania), the Ipel/Ipoly (Hungary and Slovak Republic) and the Latorica/Uzh (Slovakia and Ukraine) and, with the help of the TACIS programme[4], on the rivers Kura (Azerbaijan and Georgia), the Seversky Donets (Russian Federation and Ukraine), the Tobol (Kazakhstan and Russian Federation) and the Pripyat (Belarus and Ukraine). Groundwater pilot projects were also implemented, in particular on the Aggtelek/Slovak Karst aquifer between Slovak Republic and Hungary. Furthermore, a pilot project was implemented in the transboundary Lake Peipsi/Chudskoe (Estonia and Russian Federation).

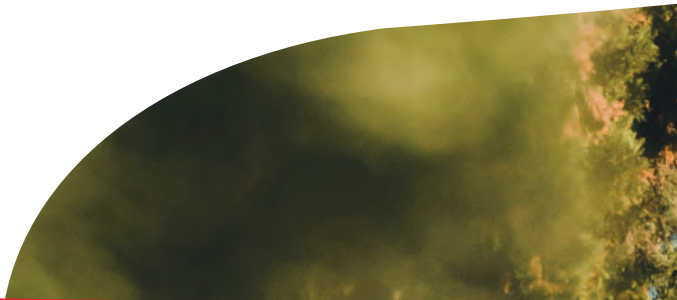
The pilot projects established or improved monitoring practices and they also promoted the harmonization of practices and standards. This was especially useful for countries that were preparing to implement the EU directives at that time. The pilots also enabled the testing of the guidelines for the monitoring and assessment of transboundary rivers, lakes and groundwaters developed under the Water Convention.

Experiences from the pilot projects have since been applied in many other basins. In the second reporting exercise under the Convention (in 2020), countries reported basin-wide transparent and reliable data and information as an important benefit of joint monitoring.

JOINT MANAGEMENT OF THE DRIN RIVER BASIN

The complex water system of the transboundary Drin River Basin includes three rivers (the Black Drin, the White Drin and the Buna/Bojana) and three lakes (Prespa, Ohrid and Skadar/Shkoder). Four Parties to the Water Convention, Albania, Greece, Montenegro and North Macedonia, and Kosovo[5] share the Drin Basin.

A Memorandum of Understanding for the Management of the Extended Transboundary Drin Basin, signed in 2011, established an institutional framework for cooperation in the basin, which includes the Meeting of the Parties, a Drin Core Group to coordinate actions for the implementation of the MoU, and three expert working groups. Joint activities have developed understanding and opportunities to work together for the sustainable future of the river basin, including in the implementation of a joint Strategic Action Programme from 2020. The strengthening of cooperation in the basin has led to decisions of the Drin Core Group to develop a river basin management plan and to develop a draft text of an international agreement to enable the coordinated and sustainable management of the Drin Basin. These steps would improve the legal and institutional frameworks and strengthen water governance.



[4] Technical Assistance to the Commonwealth of Independent States programme (1991–2006) of the European Commission.
[5] United Nations administered territory under Security Council Resolution 1244 (1999).

REPORTING UNDER THE WATER CONVENTION IDENTIFIES GAPS AND OPPORTUNITIES TO IMPROVE WATER GOVERNANCE

The reporting mechanism under the Water Convention and Sustainable Development Goal indicator 6.5.2, for which UNECE and UNESCO are co-custodian agencies, was introduced in 2015. The introduction of reporting under the Convention demonstrated the ability of the Convention's mechanism to adapt to the needs of its Parties.

Reporting makes it possible to review and better understand ongoing transboundary water cooperation. On the basis of the reports, gaps in national laws and policies related to transboundary water management can be identified and addressed. For example, Sweden and Norway used this information to improve their cooperation following the first reporting exercise in 2017. In another example, the SDG indicator 6.5.2 process was an incentive for neighbouring countries to initiate a dialogue on the Senegal-Mauritanian Aquifer, leading to a joint project and a joint ministerial declaration signed in 2021 with the commitment to develop a transboundary agreement.

CAPACITY-BUILDING ON WATER COOPERATION

Raising capacity on the legal and practical aspects of transboundary cooperation is part of several programme areas in the work of the Water Convention. In 2011–2021, about 6,000 experts were trained on international water law, climate change adaptation, the nexus approach, dam safety and other areas in the framework of capacity-building activities led by the Water Convention secretariat.

In addition, a growing number of partner organizations play a key role in efforts to support awareness-raising on and implementation of the Convention. For example, a Massive Open Online Course (MOOC) on water governance and international water law was launched in August 2020 and has raised the understanding of transboundary water management globally. This course is organized and led by Global Water Partnership and GEF IW:LEARN in cooperation with the Water Convention secretariat. The MOOC has benefited over 2,960 participants (as of May 2022) from 159 countries, with highly positive feedback received from participants. Interactive MOOC online events have in addition attracted more than 1,000 unique participants from all over the world, allowing them to directly engage with international water law experts and practitioners.

Other organizations, such as the Stockholm International Water Institute, have arranged capacity-building efforts and promoted cooperation of countries in transboundary water basins. As a result, the capacity of countries and institutions to initiate and develop transboundary water cooperation on the basis of the Water Convention has improved.

SOURCES
Success stories: 6, 8, 16, 17, 18, 19, 24 and 25.
Interviews: Dejan Komatina and Jos Timmerman.
OTHER SOURCES:
UNECE, UNESCO (2021). Progress on Transboundary Water Cooperation, Global Status of SDG Indicator 6.5.2 and Acceleration Needs.
UNECE (2021). Second report on implementation of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 2017–2020.
UNECE (2016). Reconciling Resource Uses in Transboundary Basins: Assessment of the Water-Food-Energy-Ecosystems Nexus in the Sava River Basin.
UNECE (2003). Evaluation of the rivers pilot projects: Recommendations for future projects and lessons learnt for monitoring and assessment. Working Paper WGMA/2003/4.

Chapter 8: THE WATER CONVENTION CONTRIBUTES TO PEACE AND STABILITY

> **"The Water Convention is a vital instrument for managing and developing transboundary waters in peace and in trust."**
> **Cecilia Abena Dapaah, Minister of Sanitation and Water Resources of Ghana**

> **"Our great appreciation also goes to the esteemed members of the Implementation Committee for their profound cooperation, advice and expertise provided to Montenegro on the matter related to Cijevna/Cem river. We welcome the open objective and transparent manner, in which the Committee operated."**
> **Aleksandar Stijović, Minister of Agriculture, Forestry and Water Management (2020-2022) of Montenegro**

The Water Convention outlines in very practical terms a process to develop dialogue and cooperation and consequently enables riparian countries to take steps towards good, neighbourly and stable relations. The Convention provides opportunities for joint initiatives and investments that lead to greater trust over time. Dialogue and cooperation reduce risk and avoid the costs of conflict. Day-to-day cooperation activities contribute to the establishment of a shared basin identity.

To support the prevention and resolution of conflicts an Implementation Committee was established under the Water Convention. The Committee helps identify constructive and peaceful solutions where there may be difficulties to develop cooperation. Cooperation under the Convention therefore serves as a positive factor for peace and stability.

SUCCESS STORIES

NEIGHBOURLY COOPERATION IN THE SAVA BASIN

In the Sava River Basin, a sub-basin of the Danube, a Framework Agreement on the Sava River Basin was negotiated and agreed in 2002 by Croatia, Bosnia and Herzegovina, Serbia and Slovenia. Reflecting the principles of the Water Convention, the Agreement was the first development-oriented multilateral agreement in this subregion after the Dayton Peace Agreement. The Agreement refers to the importance of cooperation with UNECE. Indeed, several joint activities and projects have been implemented under the Water Convention framework.

The International Sava River Basin Commission was established as a joint body in 2005. The cooperation on the river basin has since helped to build trust following the conflicts in the region in the 1990s and to develop cooperation between countries in many other areas.

THE IMPLEMENTATION COMMITTEE - AN INNOVATIVE MECHANISM TO IDENTIFY CONSTRUCTIVE SOLUTIONS

In 2021, Albania and Montenegro agreed to establish a joint technical working group on monitoring and assessment, and to develop and implement an information exchange protocol on the shared Cijevna/Cem River Basin. This was the result of consultations with these two countries led by the Water Convention Implementation Committee based on a request from Montenegro, which expressed concern about the possible transboundary impact of additional hydropower plants planned to be built in Albania on this shared river. The Committee assisted Albania and Montenegro as part of an advisory procedure, a unique tool which distinguishes this body from other similar mechanisms and enables it to engage with countries seeking to resolve water issues in a non-confrontational manner.

The Implementation Committee consists of nine independent members, including lawyers and water professionals, who are elected by the Meeting of the Parties. It facilitates the implementation of and compliance with the Convention.

PEACEFUL RESOLUTION OF CONFLICTS ON SHARED WATERS IN CENTRAL AFRICA

The Central African region is rich in transboundary waters with 16 major transboundary rivers, 5 transboundary lakes and 17 transboundary aquifer systems shared by the 11 members (Angola, Burundi, Cameroon, Central African Republic, Chad, Democratic Republic of Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda, and São Tomé and Príncipe) of the Economic Community of Central African States (ECCAS). While cooperation for some of the region's shared waters is advanced and supported by active joint bodies, the majority are missing a solid framework for cooperation.

There are significant differences in water distribution between the countries. The degradation of water resources, the expected increase in water use, and the impacts of climate change can become a source of tension and potential conflict.

In 2020, the ECCAS Heads of States Conference adopted the Convention for the Prevention of Conflicts Related to the Management of Shared Water Resources in Central Africa. With strong roots in the Water Convention, the new legal instrument was negotiated within the framework of ECCAS, with the support of the Water Convention secretariat and the African Development Bank. Currently, the Water Convention secretariat supports the promotion and implementation of the regional Convention together with ECCAS.

A SHARED BASIN IDENTITY TO PROMOTE COOPERATION

Developing a common identity and responsibility for river, lake and aquifer basins is important to spark interest in riparian countries so as to jointly manage the shared basin in a sustainable way.

The Dniester Basin is an example where efforts by Moldova and Ukraine are contributing to reaching this objective. In this case, involving the breakaway Transdniestrian region of Moldova on the left bank of the river, is of special importance.

The Dniester Day, organized by authorities and partners in the two countries, is celebrated over the entire basin. Representation of public and civil organizations in the management of rivers is another trend that promotes cooperation across borders. Annually, summer schools are organized for youth from the whole basin. Young people spend a few summer weeks learning about the basin and befriending each other on the shores of the river. Regular basin conferences also contribute to strengthening knowledge about the basin and fostering dialogue among stakeholders.

SOURCES
Interviews: Dejan Komatina and Tamara Kutonova.
OTHER SOURCES:
Dejan Komatina (2007). Presentation "Transboundary Cooperation in the Sava River Basin", PC.DEL/232/07. OSCE.
UNECE (2017). Les pays d'Afrique centrale approuvent la convention régionale sur la coopération dans le domaine des eaux transfrontières avec l'appui de la UNECE.

Chapter 9: CHALLENGES FOR THE FUTURE

Parties to the Water Convention have a vision for 2030 that "transboundary waters worldwide are managed in cooperation between riparian countries in order to promote sustainable development, peace and security"[6]. The Strategy for the implementation of the Convention at the global level (2018) defines long-term objectives and the strategic framework for transforming the Convention into a treaty with global participation. Long-term objectives are achieved through implementation of the Convention's three-year programmes of work.

Looking back at the achievements of the past 30 years is an opportunity to discuss the direction we wish to see the Convention taking in the next 10, 20 or 30 years, and how to get there. Challenges and issues identified through a series of interviews, described below, set the scene for a strategic discussion on the future of the Water Convention, priorities for its further development, and means for its implementation.

INCREASING IMPACT ON THE GLOBAL LEVEL

With support from the Secretariat, Parties should continue their innovative and proactive work, also beyond the UNECE region, with the objective to understand, involve and cooperate with national, regional and international partners in order to increase political support to transboundary water cooperation, promote accession to the Convention, and assist implementation. The dialogue platform provided by the Convention will become even more crucial as global contacts and membership intensify. Tasks such as identifying cooperation benefits, providing instruments to resolve intersectoral trade-offs, facilitating new agreements and establishing joint bodies, and securing funding and financing of transboundary water cooperation remain important in many regions of the world. The increasing involvement of a broader set of regions and countries in the activities under the Convention will demand a strengthening of existing partnerships and the establishment of new ones, as well as, potentially, reflections on the Convention's institutional structure. It will also require more sustainable and predictable funding for the Convention's activities. Innovative thinking on how to organize the cooperation with countries, regions and partners will also be needed.

STRENGTHENING CONTRIBUTION TO PEACE AND STABILITY

The successful joint management of water resources can transform a potential source of tension into basin-wide cooperation and partnerships. Experiences from various basins around the world show that cooperative efforts to actively look for constructive solutions can generate numerous benefits for riparians, as well as consolidate trust. The experiences of Parties and non-Parties on how to apply the norms and principles of the Water Convention could be used and communicated more extensively to promote the positive impact of water cooperation on peace and stability.

PROMOTING BASIN-WIDE APPROACHES TO CLIMATE CHANGE ADAPTATION

Intensified impacts of climate change will characterize the future. Climate change adaptation in transboundary basins is already a core part of the Convention's programme of work, and the Task Force on Water and Climate has proven to be of great value at the global level. In a world with an increasing frequency of climate-related disasters, with higher risks of drought and floods, the need to cooperate and jointly identify opportunities to address upcoming problems, including water scarcity, through joint actions in transboundary basins will become even more important. The attraction of climate financing is another important task where the Water Convention can be of great assistance.

PROTECTING BIODIVERSITY THROUGH TRANSBOUNDARY WATER COOPERATION

Water ecology, water biology and water as a living space for species are named areas of work where many Parties to the Water Convention would like to see greater support through activities under the Convention. While effective cooperation with some regional and global multilateral environmental instruments has been established, cooperation could be broadened to other activities and instruments as the biodiversity crisis is now as equally pressing as the associated climate crisis. The drying up of aquatic ecosystems not only destroys living spaces for fauna and flora: it also impacts the delivery of ecosystem services. By focusing on opportunities for cooperation in transboundary basins, Parties to the Water Convention can not only implement the Convention's obligation to ensure the conservation and restoration of ecosystems but they can also contribute to the implementation of the Global Biodiversity Framework to be adopted at the 15th meeting of the Conference of the Parties of the Convention on Biological Diversity.

[6] See Strategy for the implementation of the Convention at the global level, ECE/MP.WAT/54/Add.2.

STRENGTHENING CONJUNCTIVE MANAGEMENT OF GROUNDWATERS AND SURFACE WATERS

While the Water Convention covers all transboundary surface and groundwaters, in practice there is a need to develop stronger cooperation on transboundary groundwaters through common identification, delineation and characterization of transboundary aquifers, and to assist countries in implementing the conjunctive management of transboundary groundwaters and surface waters.

INTEGRATING CIRCULAR ECONOMY APPROACHES IN WATER MANAGEMENT

A circular economy aims to decouple growth from the consumption of finite resources such as water. There are many aspects of the circular economy that are linked to water management, going well beyond the issue of water reusing, which Parties to the Water Convention have to promote as part of their obligation to develop and implement best environmental practices. Cooperation in transboundary basins provides additional opportunities to identify solutions on the basis of circular economy approaches. The Water Convention could support the identification, promotion and broader uptake of such solutions.

FACILITATING FINANCING OF TRANSBOUNDARY WATER COOPERATION

The lack of sustainable funding models often prevents countries from deepening their cooperation. Transboundary projects are often considered "too risky" by investors, especially private ones, and basin organizations often cannot receive direct funding. Many countries also face difficulties in financing transboundary water cooperation from national sources since the benefits of transboundary cooperation are not always known and funding is often targeted to national and local water projects. The work on facilitating funding and financing of transboundary water cooperation and basin development under the Water Convention is crucial to support countries and river basin organizations in understanding and identifying sustainable financing mechanisms. Such work could also raise attention to the topic globally and among international financial institutions and investors.

STRENGTHENING SOURCE-TO-SEA MANAGEMENT

Of the over 300 million metric tons of plastics produced globally each year, some 4.8 to 12.7 million metric tons reach the ocean, impacting negatively on marine organisms and ecosystems. Rivers represent a major vector for the influx of plastics into the ocean, transporting between 9 and 50 per cent of the total plastic entering the ocean. Promoting integrated cross-sectoral approaches that address the linkages between SDGs 6, 14 and 15 can be achieved by strengthening coordination from source to sea. Accelerating progress on achieving the SDGs is however a challenge that Parties to the Water Convention will need to address in order to effectively implement the Convention's obligation to protect the environment that is influenced by transboundary waters. Water management and planning at national and transboundary levels must take into consideration the impact on the ocean's health. It is important to bring together the freshwater and ocean communities to explore how transboundary water cooperation can help protect coastal and marine environments, including through the framework of the Water Convention.

The Water Convention:
30 Years of Impact and Achievements on the Ground

The year 2022 marks the thirtieth anniversary of the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention), which was adopted in Helsinki in 1992.

Over the past three decades the Water Convention has served as a mechanism to strengthen international cooperation and implement national measures for the sustainable management and protection of transboundary waters. It provides an intergovernmental platform for the day-to-day development and advancement of transboundary cooperation.

This publication showcases some of the success stories of the Water Convention's impact on the ground. It helps the reader to better understand the Convention's social, economic and environmental impacts as well as its benefits for peace and stability in different regional settings. In this way, the publication serves as an important resource to exemplify the benefits of transboundary water cooperation based on the Water Convention.

This publication is intended for government authorities, basin organizations and other international organizations, development partners, non-governmental organizations and academia. It aims to strengthen the understanding of the benefits of the Water Convention, facilitate accession processes, and contribute towards the effective implementation of the Convention and improved transboundary water cooperation worldwide.

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