Transboundary freshwater security governance train

Interactive Online Session: International Water Law and Climate Change
20 April 2021
Event Moderator

Senior Network and Transboundary Water Cooperation Specialist, GWP

- Yumiko leads GWP’s thematic work on transboundary water, and is the lead faculty of the MOOC on Transboundary Freshwater Security, designed and directed the production of the course.
- Her area of expertise lies in the analysis of water and environmental governance, water diplomacy, political economy analysis surrounding natural resources management, with a focus on transboundary rivers and non-state actors’ engagements in natural resources management.
- Dr. Yasuda obtained her PhD degree from the Centre for Water Law, Policy and Science at the University of Dundee, MA in environmental policy from the Tufts University, and MSc in environmental science from Tsukuba University. Her research on the Mekong has culminated in the publication of a book entitled “Rules, Norms and NGO Advocacy Strategies: Hydropower Development on the Mekong River” by Routledge in 2015.

Dr. Yumiko Yasuda

Fun fact! Yumiko performed stand-up comedy in Scotland.

The biggest achievement in life: Still working on it!
Event Chairs

Professor Otto Spijkers
Founding Staff Member, International Water Law Academy, Wuhan University

Dr. Barbara Janusz-Pawletta
Vice-Rector on International Cooperation at the Kazakh-German University (DKU)
Founding Staff Member of the International Water Law Academy (IWLA), Professor at the China Institute of Boundary and Ocean Studies (CIBOS) and at the Research Institute of Environmental Law (RIEL) of Wuhan University

- Otto Spijkers studied international law at the University of Amsterdam, New York University School of Law, and the Hague Academy of International Law. He studied philosophy at the University of Amsterdam and the University of Malta. He obtained a Diplôme approfondi de langue française.
- Prior to joining the IWLA of CIBOS, Professor Spijkers was Lecturer of Public International Law at Utrecht University, and researcher at the Utrecht Centre for Water, Oceans and Sustainability Law.
- He also was a visiting lecturer at the Grotius Centre for International Legal Studies of Leiden University, Xiamen University’s China International Water Law Programme, the Università degli Studi di Salerno (Italy), and the Association pour la promotion des droits de l’homme en Afrique centrale (APDHAC) of the Université Catholique d’ Afrique Centrale (Yaoundé, Cameroon).

Fun fact! Otto recently got a Chinese name, 高海平. His name is inspired by his height – Otto is very tall – and the fact that he was born near the ocean.

Biggest achievement in life: finding a home in lots of different countries.
Vice-Rector on International Cooperation, Kazakh-German University (DKU)

- Barbara Janusz-Pawletta has obtained her Master Degree on Law in the Jagiellonen University in 2003. And through 4 years she has become a Doctor on Law in Freie Universität Berlin.
- Her teaching and research fields cover legal framework and institutional interstate cooperation including water and energy nexus. She is looking at the worldwide and regional practices especially in Central Asia to facilitate interstate cooperation in managing sustainable management of water resources.
- Dr. Janusz-Pawletta has been dealing with worldwide and best regional practices facilitating sustainable interstate cooperation related to production and maintenance of renewable energies by using water potential.
- Since 2004, Dr. Janusz-Pawletta has on her account more than 35 research publications in various sources, including foreign ones.
- She is the editor-in-chief of the Journal of the Central Asian Journal of Water Research (CAJWR), which is open-access, peer-reviewed e-Journal dedicated to all aspects of water management in the region of Central Asia.
- In addition to her position with the DKU, Barbara is a member at the Technical Committee of the Global Water Partnership (GWP) and at International Law Association within the Committee “Role of International Law in Sustainable Natural Resource Management for Development”. She also serves as the UNESCO Chairholder for water management in Central Asia.

Fun fact! Barbara loves the piano music, but cannot play it anymore, so she is teaching to play piano her 4 sons.

Biggest achievement in life: happy and big family.
Speakers

1. Ms. Sonja Koeppel, Secretary of the Water Convention and co-Secretary of the Protocol on Water and Health at UNECE

2. Dr. Nagaraja Rao Harshadeep, Global Lead for Disruptive Technology in the Sustainable Development Practice Group, World Bank

3. Mr. Didier Zinsou, Director of Niger Basin Observatory
Secretary, Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention)

- Sonja Koeppel currently leads the Water team at the United Nations Economic Commission for Europe and serves as secretary to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) as well as co-secretary to the UNECE/WHO-Europe Protocol on Water and Health.
- She has worked for more than 10 years in the Water Convention Secretariat, for example coordinating the activities on climate change adaptation.
- Before joining UNECE, Sonja worked for UNEP in Nairobi and studied environmental sciences, policy and management, as well as social sciences.

Biggest achievement in life: Sonja has played the cello in 6 different orchestras since her childhood.
Global Lead, Disruptive Technology, World Bank

- Harsh is a Global Lead for Disruptive Technology at the World Bank. In 25 years at the World Bank, he has led and advised several environmental, water, and natural resources operational projects and analytical support around the world. This includes work on GreenTech, watershed management, integrated basin planning and management, transboundary waters, pollution, critical ecosystems, safeguards, and climate resilience.
- He represents the Sustainable Development practice group in a Bank-wide Disruptive Technology working group, co-leads the Bank’s HydroInformatics focal area, and has also been a Global Lead for Watersheds. He also leads a Disruptive KIDS (Knowledge, Information & Data Services) Helpdesk to provide support to operational teams on modern technologies.
- Earlier, he worked with other international organizations, academia, and the private sector on environment, water analytics and water conflicts. He holds a Bachelor of Technology in Civil Engineering from the Indian Institute of Technology (IIT-Madras), a Master’s in Environmental and Resource Engineering from Syracuse, and a PhD in Water Resources and Environmental Systems Engineering from Harvard University.

Fun fact: Harsh used to travel over 250 days a year across the world for over two decades at the Bank and is currently going through withdrawal with the pandemic travel restrictions!

The biggest achievement in life: Beginning life at a time that allowed me to see the implications of such accelerated changes in technology!
Didier Sèyivè Zinsou, born in Cotonou, Republic of Benin, Engineer in Rural Engineering, he started his professional career for a short period in a consulting firm and then in the Beninese administration, in particular in the General Directorate of Water of Benin before joining the Executive Secretariat of the Niger Basin Authority.

At the Niger Basin Authority (NBA), he worked as a Water Resources Specialist for more than ten years in monitoring the development of water resources, both surface and groundwater.

Since October 2019, he has been promoted to the position of Director of the Niger Basin Observatory where he has the immense task of monitoring the development of water and the environment (natural and human) of the Niger Basin and producing technical notes on the state of this environment and also providing advisory support on environmental issues in the Niger basin.

Fun fact, taken from an African proverb: "Words are like eggs, once you've dropped them, you can't take them back".

The biggest achievement in life: to constantly challenge himself to move forward.
Supporting transboundary basins in addressing climate change: best practices and lessons learnt and the role of international water law namely the Water Convention and Watercourses Convention

Sonja Koeppel, Secretary, Water Convention, UNECE

Online Engagement Session: MOOC on Governance for Transboundary Freshwater Security

‘International Water Law and Climate Change’
Why transboundary cooperation in climate change adaptation?

✓ Addressing floods and droughts more efficiently
✓ Sharing data, enlarging the planning space and identification of better priorities and avoiding mal-adaptation
✓ Reducing uncertainties
✓ Supporting sustainable development and regional integration
✓ Possibly supporting adaptation planning at the country level

Sharing costs and benefits
Water Convention

- Unique global legal and intergovernmental United Nations framework on transboundary cooperation which offers capacity building, sharing knowledge and experience
- Task Force on Water and Climate since 2006
- Guidance and publications on water and climate
- Global Network of basins working on climate change adaptation
- Promoting water and climate in global processes
- Regular global workshops
- Pilot projects
Global network of basins working on climate change adaptation

- Coordinated by the Water Convention and INBO since 2013
- Regular meetings to exchange experience and knowledge and sharing best practises, challenges and lessons learnt
- Developing, implementing and financing climate change adaptation in transboundary basins
- 17 basins are currently part of the network

Other basins are very welcome to join!


Chu Talas river basin, Congo river basin, Danube river basin, Rivers and Wetlands of Dauria Steppes, Dniester river basin, Drin river basin, Lower Mekong river basin, Meuse river basin, Neman river basin, Niger river basin, North Western Sahara Aquifer System (NWSAS), Rhine basin, Sava river basin, Senegal river basin, Sixaola river basin, Lake Victoria basin, Volta river basin
Recommended steps in transboundary climate change adaptation

• Analysis of climate change impacts
• Vulnerability assessment
• Development of a joint transboundary adaptation strategy and plan
• Implementation of priority adaptation measures
• Integration of adaptation measures into the basin and flood risk management plans as well as national strategies and plans (NDCs, NAPs, and others)

Good examples worldwide: Chu-Talas, Danube, Dniester, Neman, Rhine Lake Victoria, Mekong and Niger...
Case study example 1: Dniester basin

• The **Dniester basin** shared by Moldova and Ukraine (projects by UNECE, OSCE, UNDP, UNEP)

• Cooperation on climate change adaptation started with flood management activities

• Strategic Framework for Adaptation to Climate Change was endorsed in 2015 and followed by development of its Implementation Plan

• These activities increased the adaptive capacity in the basin and facilitated the entry into force of the transboundary Dniester Treaty in 2017 and the establishment of the Dniester Commission in 2018
Case study example 2: Lake Victoria basin

- **Lake Victoria basin** is shared by Burundi, Kenya, Rwanda, Tanzania and Uganda
- Climate change adaptation strategy and plan based on climate impact analysis covering floods and droughts developed by lake Victoria basin commission
- Project *Adapting to climate change in Lake Victoria Basin* with support of the Adaptation Fund and UNEP implemented by LCBC
- Increasing climate resilience at regional, national and local levels through transboundary cooperation and adaptation action which also help to reduce conflicts

*Integration on WASH and health policies in transboundary management of Lake Victoria considering climate change perspective*
Financing climate change adaptation in transboundary basins

- Need to demonstrate added value and links to NDCs
- **Transboundary/ regional organizations**, if accredited agencies can submit funding proposals to climate funds or apply in cooperation with partners
- **Options** for funding transboundary projects are *limited* compared to individual states

**Examples of regional support**

- Adaptation Fund
  - regional pilot program: Volta, Lake Victoria, Drin, others
  - **20% total portfolio** under the regional window (US$151M)
  - about **13% portfolio** covers water management (US$100M)
- GEF International Waters
- Green Climate Fund

Ingredients for success

• Bring together political and expert level
• Good communication
• Consultative process and inter-sectoral cooperation
• Data sharing and joint/coordinated monitoring
• Capacity building support
• Combine strategy development with concrete activities on the ground
• Support from basin organisations and partnership between different organisations
• Involvement of civil society
Conclusions and activities in 2021

Climate change makes transboundary water cooperation even more challenging. On the other hand, cooperation on climate change adaptation and flood management can facilitate broader transboundary cooperation and even support national adaptation.

<table>
<thead>
<tr>
<th>Date and venue</th>
<th>Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-28 April 2021, hybrid/virtual</td>
<td>3rd joint meeting of the Water Conventions Working Group on Integrated Water Resources Management and on Monitoring and Assessment</td>
</tr>
<tr>
<td>29 September - 1 October 2021</td>
<td>Ninth session of the Water Convention Meeting of the Parties</td>
</tr>
<tr>
<td>1-12 November, Glasgow</td>
<td>COP26 with hopefully a water day and a water pavillion</td>
</tr>
</tbody>
</table>

Additional relevant resources

• UN-Water World Water Development Report “Water and Climate Change”, 2020
• UN-Water Policy Brief on Climate Change and Water, 2019

• Towards sustainable renewable energy investment and deployment, 2020
• Financing Climate Change Adaptation in Transboundary Basins: Preparing Bankable Projects, 2019
• Implementation Guide for Addressing Water-Related Disasters and Transboundary Cooperation, 2018
• Water and Climate Change Adaptation in Transboundary Basins: Lessons Learned and Good Practices, 2015
• Guidance on Water and Adaptation to Climate Change, 2009
Thanks for your attention!

Water Convention Secretariat contact:
Palais des Nations, Geneva, Switzerland
sonja.koeppel@un.org
hanna.plotnykova@un.org (for climate change)
water.convention@un.org

For more information:
www.unece.org/env/water/
Big Data, Disruptive Tech & Climate

Dr. Nagaraja Rao Harshadeep (Harsh)

Global Lead (Disruptive Technology)

WORLD BANK GROUP
Rising Global CO₂ levels

Source: NASA
The Ganges Basin & Climate Change
Bangladesh – Current and Future Sea Storm Surge associated with sea-level rise of 1m

Sea levels will rise
Hydrology will change

Sources: WCRP’s CMIP3 (Meehl et al. 2007), downscaled by Maurer et al. (2008).

Disclaimer: The boundaries, colors, denominations, and other information shown in any map in this presentation do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.
Natural Disasters could Intensify
There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...

There are additional uncertainties...
A new world of “Disruptive Technology”

“Disrupt” data value chains

• **Data Collection**: Monitoring/Surveys (in-situ sensors/IoT/Biometrics, earth observation (satellite, aerial, UAVs), crowdsourcing, digitization...

• **Data Management**: Telemetry, 5G, cloud services, open data, Blockchain, ...

• **Data Analysis**: Big data, Geospatial/ AI/Machine Learning, modeling/ scenario analysis, script repositories, Cloud/Edge/Quantum computing...

• **Data Access**: Open data APIs, data visualization, gamification, mixed reality-AR/VR, ...

• **Outreach**: Platforms/Social Media/Portals/ Apps/e-books/Competitions...

“Disrupt” production value chains

• 3D/4D printing/additive manufacturing...

• “Digital Twins”

• Automation/SCADA...

• Robotics/ Autonomous transport...

• Advanced materials/nanotech/ biotech/genomics/energy tech/ green tech, ag tech...

http://www.appsolutelydigital.com/dt/

“Disrupt” stakeholder value chains

• Virtual social networks/ Digital Platforms...

• Sharing economy...

• Crowdsourcing, gamification, competitions (e.g. hackathons, appathons...)

• Mobile money, fintech, cryptocurrency...

• Blockchain enabled value chains

• Maker movement/ DIY/Tech Incubators...

• Virtual learning/re-skilling...
We have NO data...

Of course we have data...

Data, data everywhere...
Information & Analysis Trends

**What’s Out?**
- Paper Records/Publications
- Desktop Databases
- Static, Infrequent data
- Data Secrecy
- Unclear data pricing
- Sectoral approaches
- Fragmented activities
- Desktop Modeling – “Retail”
- Supply-side inputs
- “Come to my website & see my bit of data...”

**What’s In?**
- Digital Data/Portals/Apps/e-books...
- “Analysis Ready” Cloud Data Services/APIs
- Real-time data services & visualizations
- Open, Public-Domain, Available
- Free open basic data services
- Multi-sectoral/ spatial approaches; AI
- Shared vision partnerships; Interoperability
- Cloud Analytics – “Wholesale” Platforms
- Demand-driven to support decisions
- Integrative, Collaborative Data Services & Customized Platforms/Dashboards/Apps
“Bottom-up” Monitoring Systems

Crowdsourcing Monitoring
Community Monitoring

<table>
<thead>
<tr>
<th>Year</th>
<th>Staff</th>
<th>Turbidity</th>
<th>Rain</th>
<th>Flow</th>
<th>Sed samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>3132</td>
<td>3131</td>
<td>3116</td>
<td>1425</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>11812</td>
<td>12069</td>
<td>&gt;12777</td>
<td></td>
<td>4176</td>
</tr>
<tr>
<td>2011</td>
<td>12409</td>
<td>12469</td>
<td>&gt;15000</td>
<td>&gt;500</td>
<td>3139</td>
</tr>
<tr>
<td>2012</td>
<td>6522</td>
<td>6624</td>
<td>&gt;15000</td>
<td></td>
<td>1216</td>
</tr>
<tr>
<td>Total</td>
<td>33875</td>
<td>34293</td>
<td>&gt;47000</td>
<td></td>
<td>9956</td>
</tr>
</tbody>
</table>

**Sediment Concentration Analyses**

Ethiopia: Tana and Beles Integrated Water Resources Management Project
Thanks JB for some of the photos!
“Top-down” Monitoring Systems

Weather Products

Disasters

“Space-based Stream Gauge”

“Space-based Reservoir Levels”

“Space-based Groundwater monitoring” e.g. GRACE

Land Cover Monitoring

Current Lakes Monitored by Jason-1 and Potential Lakes Monitored by ENVISAT

+ Snowcover, Glaciers, Soil Moisture, Temperature, Evapo-transpiration, Landcover, Soil Moisture, Water Quality, and much more…
The Data Value Chain
Example: Deciding on Coping with Floods

Flood Coping Actions
(stakeholder actions to minimize loss of life / livelihood)

Flood Early Warning & Recommendations

Dissemination/Preparedness
(Stakeholder Channels – DSS, Bulletins, SMS, Radio, TV, Social Media, Portals, Apps, Podcasts, phone, emails, …)

Products & Services
(Formats, Frequency, Messaging, Customization, Media)

Weather Forecasts

Hydrologic Forecasts

Flood Inundation Forecasts

Models
(Seasonal to nowcasting; statistical/ hydrologic systems/ hydrodynamic, …)

Surveys & Studies
(detailed Digital Elevation Model, Soils, Geomorphology, Water Infrastructure Status, Flood impacts)

“Top-Down” Data
(from remote sensing/ earth observation products)

“Bottom-up” Data
(from field gauges, manual reporting, crowdsourcing)

Historical Climate, Flow, and Flooded area Data

Data

Information

Knowledge

Decision Support
HydroInformatics Data Dashboard
https://spatialagent.org/HydroInformatics
Wetness

Koga Reservoir Dynamics

NDVI

Wetlands
Exciting Evolving World of HydroInformatics
Streamflow Results (Ready)

Forecast Date:
03/05/2021

Forecasted Streamflow
Reach ID: 5017413

Percent of Ensembles that Exceed Return Periods

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2-yr Return Period</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Large Displays

TouchScreenS

Physical Interactive Models

Touch Tables

VR

Touch Projectors
International Water Law & Climate: Big Data

Many aspects to consider...

- **Big Data Types:** In-situ sensors, Earth Observation (satellite, aerial/drones), UUVs,... social media, **Type of Institution** (Govt, Private Sector, CSOs, Academia, Individuals, Regional/Global), **Scale of Use** (Global... Regional... National... Individual); Inland/Ocean; MRV (mitigation)

- **Collection:** Data Generation, Crowdsourcing, Collection incentives, Disputed Areas? Collation, Public/Private Ownership, ...

- **Analytics:** Desktop vs Cloud Analytics? Proprietary/Free/Shared/ Open Scripts/ Models? Competing/”official” models/scenarios? Centralized vs Decentralized?

- **Services & Use:** “Shared” Data vs Open Online Services (e.g. OGC, APIs), Access reliability? Subscription services? IPR, Licensing, Privacy, Cybersecurity, Liability (e.g. for flood/drought Type I & II errors), Global Public Goods?

=> Needs better reflection in Transboundary Water Law
Didier Sèyivè ZINSOU


Interactive Online Session: International Water Law and Climate Change
20 April 2021
Intégration des planifications nationales dans le Plan d'Investissement Climat du Bassin du Niger

- Quelques réponses mises en place par l’ABN en réponse à la question de la gestion du changement climatique dans un bassin transfrontalier, *cas du Bassin du Niger* :

- Tous les documents de planification et de mise en œuvre des actions de développement du Bassin (Vision, PADD, PI, PS, PO, PIC) sont issus des documents de planification des priorités des neuf pays et du BN en matière d’actions prioritaires de développement, d’adaptation et à impact transfrontalier.


- Le PIC est un ensemble cohérent d’actions et d’investissements concrets prend en compte les priorités des principaux documents de planification existants (PANA, PNA, contributions déterminées au niveau national) tant des pays que du niveau régional (Plan Opérationnel 2016 – 2024).

- Le PIC comme un instrument de mobilisation du financement climatique : Préparation avec les pays la BAD et des partenaires, financement et mise en œuvre en cours du Programme Intégré Développement d’Adaptation au CC dans le BN (PIDACC/BN) avec 308,948 millions mobilisés de différentes sources de financement et du Fonds Vert pour le Climat.
Dialogue des acteurs de l’ABN en matière d'adaptation au changement climatique

❖ Un cadre de dialogue permanent est établi et fonctionnel avec :
- les pays à travers les différents organes/instances mis en place par l’ABN (le Comité Régional de Pilotage – CRP – pour le bilan et la programmation annuels le des projets et programmes), les ateliers et fora régionaux sur différentes thématiques sur l’eau et le changement climatique ;
- la coordination nationale et les membres des Structures focales nationales (SFN) et ;
- les coordinations nationales et régionale des usagers des ressources du bassin (CNU/CRU) ;

❖ La participation de l’ABN aux activités de planification et de revue-bilan des actions d’adaptation au CC dans les pays.
Mesures de coopération transfrontalière dans le domaine du droit international de l'eau et le changement climatique

❖ Harmonisation des procédures et des équipements du système de S suivi des ressources en eau (stations hydrométéorologiques, Base de données –BDD-) ;

❖ Echange permanent d'informations sur l'hydrologie et l'environnement ;

❖ Utilisation d'outils de gestion de l'eau et des aléas consensuellement adoptés (Modèle d'Allocation des ressources en eau, Règlement d'eau pour la gestion coordonnée des barrages, Système de prévision des crues et étiages, ..) ;

❖ Appui aux pays à travers des actions transfrontalières ou à impact transfrontière suivant les différents axes de planification stratégique (L'eau comme levier de développement économique, la préservation des écosystèmes du bassin, le financement innovant et durable, la coopération avec les États et partenaires et la performance organisationnelle). Les différentes actions à mener dans le bassin s'inscrivent re désormais dans les différents axes sus-énumérés.

❖ Autres types de mesures d'adaptation promues par l'ABN à travers ses programmes et projets :
  - 1- Développement de la résilience des écosystèmes et des ressources naturelles : Protection des ressources et des écosystèmes, Renforcement de la gestion partagée des ressources naturelles
  - 2- Développement de la résilience des populations : Développement des infrastructures à buts multiples, Mesures d'accompagnement et de protection sociale
Bénéfices potentiels de l'ABN et de la coopération transfrontière

❖ Renforcement du mandat de l’ABN en matière de coopération et de gestion des ressources transfrontalières du bassin favorisant ainsi une intégration régionale ;

❖ Mise en œuvre de ces actions permettant ainsi d’accroître la résilience et d’améliorer le niveau de vie des populations et de mieux sécuriser tant les populations que les ressources naturelles du bassin ;

❖ Harmonisation des approches d’adaptation et l’édification d’une vision commune pour prévenir les aléas, promouvoir les meilleures pratiques d’adaptation et éviter la mal-adaptation ;

❖ Capitalisation des bonnes pratiques et mise en place de référentiels harmonisés pour orienter la conception, la mise en œuvre et le suivi des actions à impact transfrontalier ère (adaptation au CC, gestion et valorisation des connaissances).
International water law provides directions about actions to take and to avoid in shared basins also in the face of climate change.

1997 United Nations Watercourses Convention: Article 5 and 6

- Watercourse States shall participate in the use, development and protection of an international watercourse in an **equitable and reasonable manner**. This requires taking into account all relevant factors and circumstances, including geographic, hydrographic, hydrological, **climatic**, ecological and other factors of a natural character.

**Article 27 – emergency management**

- Watercourse States shall, individually and, where appropriate, jointly, take all appropriate measures to prevent or mitigate conditions related to an international watercourse that may be harmful to other watercourse States, whether resulting from natural causes or human conduct, such as **flood or ice conditions**.
International water law and climate change: 1992 Water Convention

Aims of the Water Convention: protect and ensure the quantity, quality and sustainable use of transboundary water resources by facilitating and promoting cooperation.

Provisions relevant for climate change:

• Prevent, control and reduce transboundary impacts including those related to adaptation to or mitigation measures (art. 2)
• Riparian Parties shall establish and implement joint programmes for monitoring the conditions of transboundary waters, including floods and ice drifts, as well as transboundary impact (art. 11)
• Use waters in a reasonable and equitable way
• Cooperate on the basis of equality and reciprocity
• Set joint water quality objectives, use best available technology, exchange information, follow the precautionary principle, develop joint monitoring and common research, assist each other...
Thanks to all the speakers & participants!

Interactive Online Session: River Basin Organisations and the implementation of legal commitments’

16 March 2021