



**Convention on the Protection and Use of Transboundary
Watercourses and International Lakes**

Working Group on Integrated Water Resources Management

Fifteenth meeting

Geneva, 30 September – 2 October 2020

Item 7 of the provisional agenda

**Promoting an integrated and intersectoral approach
to water management at all levels: Supporting equitable
and sustainable water allocation in a transboundary context**

**Draft annotated outline of the handbook on water allocation
in a transboundary context**

Note by the secretariat

Summary

At its eight session, the Meeting of the Parties to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) decided to develop a handbook based on existing practices covering the key aspects of equitable and sustainable allocation of water in the transboundary context, addressing both surface waters and groundwaters, and also environmental flows (programme area 3, activity 3.3).

Work began in 2019 on developing the Transboundary Water Allocation Handbook, which will provide a global review of water allocation arrangements in transboundary basins. Illustrative case studies from around the world will highlight diverse transboundary allocation practices, challenges and lessons learned.

The development of the Handbook is being supported by an Expert Group to provide guidance and oversight on the structure, substantive content and illustrative case studies. The Expert Group has met twice and will be meeting again virtually on 20-21 October 2020 to review content and for inputs on end chapters.

The Handbook will reference relevant tools and information resources and examples of: (a) the key elements (e.g., institutional framework, data sharing) for agreeing on water allocations; (b) options and approaches that can be followed technically and legally; (c) relevant considerations in designing a process to agree on water allocation; and (d) the benefits that can be drawn from agreeing on water allocation. The experience in implementing existing allocation arrangements as well as limitations of water allocation will also be included.

A number of regional events and sessions in transboundary water cooperation workshops have been held or will be organized to promote the Handbook and gain feedback. Two workshops – a ‘Technical meeting of experts on water allocation and environmental flow Assessment in the transboundary context’ on 12-13 December 2019 in Nur-Sultan, Kazakhstan and a virtual online ‘Regional meeting on water allocation and environmental flow assessment in a transboundary context’ on 22-23 September 2020 – in Central Asia (as part of a parallel regional project on transboundary water allocation being implemented by the International Water Assessment Centre in Kazakhstan with key outcomes linked directly to the global Handbook) and a ‘Regional workshop: Enhancing transboundary water cooperation in the MENA region: progress, challenges and opportunities’ on 3-4 March 2020 in Beirut, Lebanon have already been held. A virtual online ‘Regional workshop on equitable and sustainable water allocation – Sharing experiences on transboundary water allocation and water scarcity’ focused on European Union countries,

Caucasus and Eastern Europe (virtual) will be held on 5-6 October 2020; and there may be potential further opportunities for other regions to hold events in 2021 (COVID19 permitting).

The Working Group will be informed about the current status of the Handbook's preparation, including the second Expert Group meeting outcomes which included the final version of the draft annotated outline. The Working Group will then be invited to provide feedback on the draft annotated outline.

The Working Group will also be informed about the next steps in drafting the Handbook, including of upcoming opportunities for review and feedback on the completed Handbook draft, and about the past and future regional events.

Transboundary Water Allocation Handbook

Draft annotated outline

SUMMARY

The Handbook aims to provide practical guidance on the basic elements and operationalization of transboundary water allocation based on existing global practice, while recognising that every allocation context is unique. Thus, it should be read as a compendium of different dimensions of transboundary water allocation, highlighting the need to strike a balance between robustness and flexibility when developing allocation arrangements. For this purpose, the Handbook utilizes various case study examples to illustrate how particular features of allocation arrangements can be applied in addressing common issues and challenges.

The Handbook Chapters can be divided into three parts. Part 1 (Chapters I-III) introduces the rationale of, foundation for and limitations to transboundary water allocation. It also discusses broader approaches such as benefit sharing related to water allocation. Part 2 (Chapters IV-VII) provides the substantive and procedural basis as well as practical steps for States for the operationalization of transboundary water allocation. Part 3 (Chapters VIII-IX) discusses lessons learned and draws conclusions from the other parts of the Handbook.

The Handbook, especially Chapters IV-VII, make use of the case study examples of transboundary water allocation. These examples can be found as text boxes in the Chapters illustrating different elements of water allocation. More detailed/general case study descriptions can be found in the Annexes of the Handbook.

I INTRODUCTION

This chapter defines and describes the rationale of water allocation in a transboundary context. It sets up the handbook by establishing the context of the question: why and how is water allocation applied in transboundary basins including surface and groundwater? It will provide a summary of the global experience in water allocation and the relevance of allocation in the era of changing circumstances and finite water resources. Furthermore, this chapter will discuss the purpose and usability of the handbook.

1) Handbook

a) Background

- Mandate, purpose, background and processes involved in the development of the Handbook in relation to the Water Convention's Programme of Work 2019-21.
- For whom the Handbook is written: practitioners at different levels and roles in transboundary water resources management and governance.

- How does this Handbook differ from previous water allocation handbooks: transboundary context, a compendium of global case studies and lessons learned.
- b) Contents
- Introduction of the contents of the Handbook.
- c) How to Read the Handbook
- Technical reading manual: where to find information and how e.g. cross-references are used.
 - Overall introduction of the case studies (how many and from which areas) and how they are used (boxes in the text and annexes); an explanation that all the cases may not represent best practices, but also valuable lessons learned.
- d) Dissemination
- The role for partners in dissemination and application of the Handbook will be noted, linking this with how to assist in achieving its stated aims.

2) Water Allocation in a Transboundary context

- a) Definitions and Aims of Water Allocation
- Drivers of water allocation in a broader socio-economic development context; definition of water allocation and allocable water in the transboundary context; how does transboundary water allocation differ from national level water allocation; limitations of water allocation and its alternatives.
- b) How Allocation Relates to Water in a Transboundary Context
- Why water allocation is of increasing relevance to transboundary waters; what are the rising pressures, such as scarcity, facing transboundary basins and groundwater resources that give a need for examining water allocation in a transboundary context.
- c) Key Processes & Methods of Water Allocation
- Different water allocation processes, methods and strategies at a variety of administrative and geographic levels, including at a national, basin, sub-basin and regional level; a brief summary of the global experience in water allocation to date referencing Oregon State University agreement database; references to other water allocation handbooks (notably OECD & ADB).
- d) Basis of Water Allocation in International Water Law
- What does international law (Water Convention, Watercourses Convention, Draft Articles on the Law of Transboundary Aquifers) state about water allocation; principles that establish the rights and obligations of watercourse states.
- e) Shared Knowledge & Data for Water Allocation
- Knowledge and information regarding transboundary waters required for water allocation: the necessary basis for reliably assessing the water resources and understanding the different uses and functions.
- f) Cooperation & Scales of Governance for Water Allocation
- Cooperation at transboundary level as a foundation for water allocation; introduction to the approaches to water allocation in transboundary agreements and cooperation.
 - Operationalization at national and sub-national level, overview of water allocation principles and entitlements at the national and sub-national level, highlighting how principles at this scale are relevant to transboundary water allocation.

- EXAMPLE DIAGRAMS on scale and governance.

II ISSUES WATER ALLOCATION CAN ADDRESS

Water allocation attempts to respond to the increased or competing demands for water and water related services, and the resulting pressures on available water resources, to ensure availability of water for certain functions or uses (including ecosystem needs), or, in some cases, to deal with high flows. This chapter discusses how water allocation approaches and frameworks can seek to address these challenges, focusing particularly on their application to water in a transboundary context. As the necessary basis, the chapter highlights the importance of a solid understanding of, firstly, the water resources available in terms of quantity, quality and variability, including with the outlook of climate change; secondly, the uses and functions of water; and, thirdly, various factors impacting on the allocable water resource.

1) Understanding Water Availability Now and in the Future

- a) Understanding Water Available for Allocation
 - The basic approaches in assessing water resources available for allocation.
 - EXAMPLE DIAGRAMS Water available for allocation.
- b) Climate Change as a Cross-Cutting Challenge
 - Future outlook of climate change and how this impacts various aspects related to water allocation in shared basins.

2) Availability & Variability of Surface Waters and Groundwaters

- a) Availability
 - Different hydroclimatic conditions: (e.g. in terms of aridity, seasons and water sources).
 - Long-term data and knowledge on water resources.
 - Normal and exceptional circumstances.
- b) Drought
 - Effects of drought and importance of drought knowledge in transboundary water allocation.
- c) Flooding
 - Various risks, damages and benefits related to floods and their management.

3) Balancing Water Needs & Uses

- a) Environmental Needs
 - Environmental/ecological flow requirements.
 - Water ecosystem health as a foundation for the sustainability of water resources and the services and benefits derived from water.
- b) Water Use Sectors and Functions
 - Different water use sectors (agriculture, industry, energy, households), their specificities (e.g. in terms of timing and quality). Consumptive vs. non-consumptive use.
 - The case and conditions for water use efficiency in different sectors/uses (different uses/sectors have different potential for water efficiency).

- Highlight and discuss the potential need to limit withdrawals or prioritise certain uses (particularly human consumption and domestic use) at times.
- c) **Balancing Historical, Current & Future Uses**
- Overview on how various water uses and functions can be reconciled with finite supply and considering the aspects of quantity, quality, timing, and ecosystem requirements. How water uses have developed and changed.
 - Water rights and entitlements.
 - Historical, present and future supply and demands across different sectors in transboundary basins; prioritisation of uses; water-energy-food-ecosystem nexus aspects (sectoral policies, economic drivers and inter-sectoral dynamics influencing future demands).
 - Role and evolution of approaches to socio-economic assessments; adaptivity of water allocation arrangements (considering climate change and water scarcity).

4) Understanding Impacts on Allocable Water

- a) **Water Management Infrastructure**
- Water management infrastructure sets the basis and constrains how allocable water can be managed.
 - Different infrastructure (sectoral and multi-sectoral) to be considered: e.g. flow regulation i.e. dams, storage, basin transfer/canals, withdrawals (e.g. irrigation systems).
- b) **Water Scarcity**
- Water scarcity as a compound effect of high water demands in relation to allocable water, and in some places low physical water availability.
 - Principles for managing supply and demand in situations where transboundary water resources are under pressure and/or already allocated.
- c) **Water Quality**
- Impact of withdrawals and flow regulation on water quality; prevention and dilution of pollution loads.
- d) **Ecosystem Degradation**
- Importance of ecosystems, levels to be maintained, minimum requirements.

III LIMITATIONS TO WATER ALLOCATION & BROADER APPROACHES

Having discussed in detail the complex range of issues that water allocation can seek to address, this chapter will briefly highlight certain limitations to water allocation that exist and broader approaches which can be relevant to consider, depending on the context. Limitations to water allocation are outlined in so far as transboundary allocation arrangements deal with water quantity, quality and timing. Broader approaches to consider, such as benefit-sharing and water-energy-food-ecosystem nexus, will be noted, along with further resources for reference.

1) Limitations to Water Allocation

- a) **Limitations of Water Quantity, Quality and Timing**
- Examination of how water allocation has limits when dealing with narrow interpretation.

2) Broader Approaches to Consider

- a) Benefit-Sharing
 - Examination of principles of benefit-sharing approaches at the transboundary level, going beyond water allocation.
 - Types of benefits from cooperation on transboundary rivers, such as benefits to the river, from the river, because of the river and beyond the river. The potential for sharing these benefits can also inform water allocation. Benefits from transboundary cooperation include benefits for economic activities but also beyond, such as social and environmental benefits as well as peace and security benefits.
- b) Water-Energy-Food-Ecosystem Nexus
 - Introduction to the nexus approach emphasizing water, energy and food sectors being inextricably linked so that actions in one often have impacts on the others, as well as on ecosystems.
 - Resource management and economic policy (e.g. agriculture and energy) decisions are taken outside water management but they translate into impacts and demands on water. Need for water allocation measures to address scarcity or impacts could potentially be avoided by integrated planning and informed sectoral policies.
 - Identifying and addressing intersectoral interlinkages and synergies informs water allocation decision making processes, fosters transboundary cooperation and may increase resource use efficiency.
 - The concept of virtual water is in the spirit of nexus action: in a water-scarce region, importing water-intensive products may be an effective strategy.
- c) Basin-wide Planning Approach
 - Discussion regarding how the river basin forms a natural unit for integrated water resources management in which rivers, lakes and groundwaters interact with other ecosystems. Basin planning overall needs to strategically and consultatively consider different social, economic and environmental priorities, and manage water resources so as to best contribute to meeting different (potentially partly conflicting) goals. As river basins (and aquifers) usually stretch over different administrative and geographical units and State borders, cooperation between competent actors is needed. The key means to coherent planning is a river basin management plan, in international basins ideally a joint plan or at least coordinated plans.
- d) Alternative Water Resources
 - Discussion about different alternative water resources and their influence on water allocation; managed aquifer recharge, green-blue water, water reuse, water recycling etc.

IV PRINCIPLES AND OBJECTIVES OF TRANSBOUNDARY WATER ALLOCATION

This chapter discusses current and emerging principles and policy guidelines relevant for transboundary allocation of surface and groundwater resources, within the context of international agreements (including the Water Convention and 1997 Watercourses Convention, bilateral and multilateral transboundary water treaties) and policies (e.g. SDGs, integrated water resources management (IWRM) approach, human right to water), as well as national laws and policies, where relevant.

1) Cooperation & Good Neighbourliness

- a) Cross-Cutting Nature of Cooperation and Good Neighbourliness
 - Cooperation as a precondition for any type of allocation arrangements.
- b) Principle of Cooperation

- Basis in international law: Water Convention, Watercourses Convention.
- Operationalising through joint agreements, joint institutions and sharing of information as detailed in Chapters V and VI.

2) Sustainability of Water Resources

- a) Preventing, Controlling and Mitigating Impacts
 - Legal and policy guidelines to ensure that the availability of the resource is not compromised in the long term; i.e. withdrawals should not exceed sustainable renewal (sustainable use).
- b) Integrity of Ecosystems
 - The concepts of and principles concerning environmental and ecological flows in water conventions and transboundary water agreements.
- c) Water Quality and Good Status Issues
 - Links between water allocation and water quality.
 - Maintaining a good status of waters (physico-chemical quality, quality in hydrobiological terms), links to sediment transport and hydromorphology.
 - Law and policy guidelines regulating the issue.

3) Reconciliation of Different Water Uses and Needs

- a) Equitable and Reasonable Utilization
 - Introduction of the principle based on water conventions.
 - Needs and uses as factors for equitable and reasonable utilization (Watercourses Convention).
- b) Quantity, Quality and Timing
 - How Water Conventions and transboundary water agreements approach water quantity, quality and timing vis-à-vis water allocation.
- c) Relationship Between Different Uses
 - Priority of uses in water allocation.
 - Water Conventions' approach to the relationship between different water uses.
 - Human right to water and SDGs highlighting the priority of domestic uses.
 - Historical and existing vs. future uses.
 - How order of priority is set in water agreements and other arrangements.

4) Public Participation & Stakeholder Engagement in Allocation Decision-Making

- International legal principles regarding decision-making processes: access to information and public participation (Aarhus Convention); free, prior and informed consent (FPIC).
- Stakeholder engagement approaches to water allocation;
 - EXAMPLE DIAGRAM
- Diverse stakeholders to specifically incorporate (including indigenous and minority groups) and targets for gender equality and equity.

5) Emerging Principles Relevant to Transboundary Water Allocation

- Valuing water
- Human rights law, humanitarian law

- Indigenous water allocation and cultural flows
- Community of interests
- Rights of the river and ecosystems
- Water stewardship

6) Adaptive Capacity of Water Allocation Arrangements

- a) Climate and Development Outlook
 - Climate and development challenges for water allocation.
 - How to manage adaptivity in transboundary water allocation arrangements, including physical scarcity.
- b) Drought and Flood Management
 - Drought and flood management in a transboundary context (Water Conventions, transboundary water agreements, EU Floods Directive); institutional and legal basis.

V COOPERATIVE FRAMEWORKS FOR TRANSBOUNDARY WATER ALLOCATION

This chapter discusses how transboundary water allocation transitions from addressing common issues, principles and objectives to practical operationalization. This is done through legal and institutional frameworks for cooperation: agreements / arrangements and joint bodies. First, an overview of global practice on transboundary water agreements featuring allocation arrangements is presented along with a summary of major trends and lessons. Second, a similar section on joint institutions is detailed. Third, issues of scale and compatibility in cooperative allocation frameworks are highlighted in terms of linkages and coherence between transboundary, national and sub-jurisdictional levels.

1) Transboundary Water Agreements / Arrangements

- Water Conventions' provisions on transboundary water agreements.
- Water agreements as manifestations of the states' duty to cooperate.
- TABLE: global overview demonstrating basic allocation elements codified in transboundary agreements / arrangements.

2) Joint Bodies and Institutional Frameworks

- The central role of joint bodies in implementing or coordinating water allocation and adapting to changing circumstances.
- Water Conventions' regulations on joint bodies and their tasks; different kinds of joint bodies from the global practice (basin commissions, bilateral commissions etc.).
- MATRIX / GRAPHIC: Key elements of joint bodies and institutional frameworks globally applicable to allocation.

3) National Water Laws Coherence with Transboundary Agreements / Arrangements

- How transboundary arrangements and national law are interlinked.
- States and sub-national entities such as federated states and cantons as parties to agreements.
- Need for administrative and substantive coherence and coordination between transboundary and national water regulation.

VI KNOWLEDGE BASE FOR TRANSBOUNDARY WATER ALLOCATION

This chapter discusses the need and importance of a shared knowledge base (e.g. available water resources, water uses and needs) at the basin level in relation to transboundary water allocation. It also considers means to gather that knowledge, including water resources assessment, water uses and needs assessment and environmental impacts assessment. In addition, this chapter discusses decision support systems in transboundary context.

1) Information Needs & Data Harmonization

- Why there is a need for shared knowledge and commensurate data across borders.
- The role of information-sharing and communication between riparians.

2) Assessing Available Water Resources

- Shared understanding of the status of available water resources.
- Detecting possible long-term trends in water levels or pollutant concentrations.
- Water quality (including natural variation in water bodies, assessing pollution loads from point and non-point sources).
- Flow regime, interannual and seasonal variability and exceptional situations, i.e. flood and drought.
- Augmentation of water resources.

3) E-flows

- Understanding water-related ecosystems
- Different approaches to assessing e-flows (hydrological, hydraulic, habitats-based, holistic).

4) Assessing Uses and Needs

- Determining sectoral water uses and needs.
- Navigable water depths.
- Sharing information.
- Common approaches between the riparian countries.

5) Environmental Impact Assessment (EIA)

- Requirements of the Espoo Convention and other instruments.
- Provisions on EIA in transboundary water agreements.
- Strategic environmental impact assessment.
- The role of information-sharing and communication between riparian countries.

6) Decision-Support Systems (DSS) for Water Allocation

- Applicability and limitations of DSS in transboundary water allocation.
- Multi-criteria decision analysis (MCDA) and its application opportunities in transboundary water allocation.

VII OPERATIONALIZING TRANSBOUNDARY WATER ALLOCATION: PROCESSES, MECHANISMS AND EXAMPLES

This chapter outlines a general set of legal, institutional and technical water allocation arrangements and approaches that can be assessed, adapted and applied to various contexts depending on the circumstances. It

will provide a modular suite of options including related flowcharts as well as descriptions of tools and models for determining e.g. a water balance, data and information requirements, monitoring water resources and exchanging information. The chapter provides guidelines for measures to operationalize water allocation principles and objectives presented in previous chapters.

1) Understanding the Setting and Identifying the Water Management Issues at Stake

- Defining status of possible current transboundary water allocation arrangements, situation in the basin (e.g. infrastructure, degree to which water resources are used, environmental needs), etc.
- Identifying the issue or potential challenge in the availability of, or demand for, shared water resources regarding quantity, quality and/or timing seeking to be addressed.

2) Identifying Key Stakeholders and Institutional Frameworks

- Stakeholder analysis: riparians, joint-bodies, relevant public authorities, private sector (e.g. major water-using sectors) and civil society (e.g. local communities).
- Institutional frameworks: status of potential transboundary agreements or other arrangements.

3) Shared Knowledge Base

- Reliable assessment of available surface water and groundwater resources; potential for augmentation of resources (water reuse, desalinization, managed aquifer recharge etc.).
- Technical tools and approaches for determining needs of different sectors and states; assessing future development of demands; potential for efficiency; application of different tools under different capacity availabilities.
- Supply and demand management options.

4) Identifying and Considering Alternatives for Water Allocation

- Why alternatives are needed, why transboundary water allocation may not be the solution.
- What types of alternatives exist; for example, the use of alternative water resources, demand management measures.

5) Negotiating at Transboundary Level for Suitable Agreement / Arrangements

- Framing of negotiations on particular contested aspect(s).
- Finding common basis for negotiations: conventions, agreements, principles.
- Different starting points in negotiations, step-by-step approach.

6) Establishing Water Allocation Agreements / Arrangements

- The role of transboundary water governance and institutions.
- Water allocation methods and more specific allocation mechanisms, criteria and plans.
- Striking a balance between legal certainty and flexibility.
- Response strategies for extreme events.

7) Development of Allocation Mechanisms and Plans

- How to develop specific and adaptive allocations mechanisms and plans based on transboundary agreements and other arrangements.
- Different scales of allocation mechanisms and plans.
- Role of private sector, operators.

8) Implementation

- Entry into force of the transboundary agreements and arrangements.
- Role of joint bodies and public authorities.
- Implementation measures of states on the basis of the transboundary agreements, arrangements and plans, including national measures.
- Possible step-by-step approach to implementation.

9) Monitoring and Ensuring Compliance

- Information-sharing and capacity-building to ensure compliance.
- Role of joint bodies/management institutions in ensuring and reviewing compliance.
- Possible submissions to Water Convention Implementation Committee.

10) Dispute Prevention and Resolution Mechanisms

- Trust-building and legitimacy of allocation mechanisms and cooperation arrangements; dispute resolution mechanisms in reserve.
- The role of agreements and joint bodies/management institutions.
- Dispute prevention: routines and flexibility of water allocation and information exchange; interpretation of treaties; open communication, gathering of information and reporting, possible submissions to Water Convention Implementation Committee.
- Dispute resolution: water conventions' provisions; negotiations (possibly assisted by the joint governance body); mediation; conciliation; fact-finding and enquiry; arbitration; dispute resolution by a joint body or by a national or international court.

VIII LESSONS LEARNED & MAIN CONSIDERATIONS

This chapter draws together the key lessons learned from the case studies worldwide. A set of main considerations will be distilled from the global practices and applicable international laws and guidelines covered within the Handbook to help guide practitioners in assessing, adapting and applying transboundary water allocation to their own context(s) as appropriate.

1) Lessons Learned

- Summary of key lessons, derived mainly from the case studies.

2) Main Considerations

- Main considerations based on the global practice and the Water Convention's experience.

IX CONCLUSIONS

This chapter summarises over-arching conclusions from Handbook, noting certain limitations (e.g. scope, timing) and gaps (e.g. available information).

X ANNEXES

This chapter lists additional resources, including a list of case studies in a matrix format cross-referencing the key elements of transboundary water allocation.

- Maps
- Matrix of case studies cross-referenced with key elements of transboundary water allocation
- Bibliography with agreements, publications and references