



How do international agreements at the global and basin level address water scarcity?

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Overview

- **Problem** of Water Scarcity in International Basins
 - Looming Global Water Resources Crisis
 - Legally Challenging - Drought & Water Scarcity in EU Law
- Basin **Agreements** Specifically Addressing Water Scarcity
- Role of **General Principles** of International Water Law in Addressing Water Scarcity
 - Equitable & Reasonable Utilisation (Factors, incl. No-Harm Principle)
 - Ecosystems Protection Obligations
- **Implications** of Measures to Address Water Scarcity
 - Integration of Water Scarcity Values into Intl Water Law (Allocation Models)
 - Joint Basin Development (Infrastructure)
 - Adequate Data Generation, Compilation and Exchange
 - Intense Procedural Engagement (Cooperation)
 - Adequately Mandated & Capacitate Cooperative (Basin) Institutions

Problem of Water Scarcity in International Basins

- **Ever-growing Demand**

- Global water requirements will double between 2005 and 2030 - 'the new environmental crisis of the 21st century' (Brown Weiss)
- Pop growth & food requirements; economic development & lifestyles, competing environmental needs, *etc.* - global per capita availability of water depleting rapidly

- **Climate Change / Variability**

- IPCC (2008): 'freshwater resources vulnerable to climate change ... wide-ranging consequences on human societies and ecosystems'
- Reduction in precipitation / discharge [Euphrates; Rio Grande; Syr Darya; Orange-Senqu; but also Danube; Rhine]
- Depletion of glaciers - on which 1/6 of world population critically depends [European Alps; Tibetan Plateau; Peruvian Andes]
- Exacerbate inequality of water distribution /availability [Nile Basin; Eastern Mediterranean; Southern Africa]

EU Law & Policy on Drought & Water Scarcity

- **EU Water Framework Directive (2000/60/EC)**
 - Objective: 'mitigating the effects of floods and droughts' – Art. 1(e)
 - Content of River Basin Management Plans (Annex VII): env. objectives
- **EU Law & Policy on Drought & Water Scarcity**
 - **COM (2007) 414 final** – *EU WS&D Policy*
 - Integration (CAP, ERDF, EIB, etc.); Drought Management Plans (into RBMPs); EDO;
 - Less than 40% of RBMPs consider WS&D relevant; 12% identify WS&D pressures by sector; 5% include coordinated WS&D measures
 - **COM (2012) 672 final** – *Report on the Review of EU WS&D Policy*
 - Objective of reversing WS&D trend not achieved
 - Conceptual & information gaps, and policy, governance and implementation gaps
 - Define and implement ecological flows
 - **COM (2012) 673 final** - *Blueprint to Safeguard Europe's Water Resources*
 - Emphasis on water efficiency measures and ecological status of EU waters
 - Assessment and management of WS&D to mitigate effects of climate change
 - Integrate water quantity into overall policy framework (WFD, EIA, SEA, AA)

Basin Agreements Specifically Addressing Water Scarcity

- **Treaty on Sharing of the Ganga Waters at Farakka, (1996):**
 - Articles III: releases dependent on flow values provided in Treaty;
 - Article X: States agree upon schemes having regard to Joint Rivers Commission recommendations
- **Tripartite Interim Agreement for Cooperation on the Protection and Sustainable Utilisation of the Water Resources of the Incomati and Maputo Watercourses (2002):**
 - Art 10(2): 'flow regimes shall be adjusted ...' and
 - Art 10(5): coordinated management of water storage infrastructure
 - Annex I: detailed allocation provision for each State between 'first priority uses' (domestic, livestock, industrial, ecological); Class 1 & Class 2 Irrigation Areas

Basin Agreements Specifically Addressing Water Scarcity

- **Treaty between US & Mexico Respecting Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (1944):**
 - Conditional allocation (to US) referring to water flow / volume
 - Art 8 – joint construction /operation of infrastructure for water storage / optimisation
 - Art 9(f) – inter-State water-sharing (re surpluses) in ‘extraordinary drought’ conditions
- **Senegal Water Charter (2002):**
 - Art 17 – ‘restraint measures’
 - General emphasis on human safety and human right to adequate water (water security)

Role of General International Water Law Principles in Addressing Water Scarcity

- **Equitable & Reasonable Utilisation:** distributive/needs-based
 - **Population dependent** on WC in each State* [UNWC, Art 6(1)(c)]
 - Also, **social & economic needs** [Art 6(1)(b)]; climatic & ecological factors [Art 6(1)(a)]; effects of use in other WC States [Art 6(1)(d)]; conservation & economy of use [Art 6(1)(f)]; *etc.*
 - New climate-related factors may become increasingly relevant:
 - *e.g.* climate-related migration!
 - Priority on '**vital human needs**' [UNWC Art. 10(2); ILC Draft Arts TB Aquifers Art 5(1)(a) & (b) and 5(2)]; *etc.*
 - **Human right to water** discourse [2002 CESCR General Comment No 15; 2010 UNGA Res; UNECE Protocol on Water & Health]
 - GC15 para 31: States 'respect enjoyment of right in other countries'
 - Sustainable Development Goals (**SDG 6**): 6.1 (water for all); 6.4 (water-use efficiency); 6.5 (TB cooperation); 6.6 (ecosystem protection)

Role of General International Water Law Principles in Addressing Water Scarcity

• Ecosystem Protection Obligations:

- 'Ecosystem Approach' [UNECE Water Convention, Arts 1(2), 2(2)(b), 2(2)(d) and 3(1)(i); UNECE Guidelines (1993)]
- Ecosystem Services [2005 Millennium Ecosystem Assessment; 'vital human needs']
- Environmental Flows [PCA *Kishenganga Arbitration* (2013)]
- Ecological Resilience / **Adaptive Management Approach**
 - Flexibility: experimentation – monitoring – feedback – review
 - Intense cooperation: data generation and sharing
 - Revisional element: periodic update re needs (ecosystem services; human needs)
 - Empowered basin institutions: mandate, capacity, decision-making powers

BUT

- Need for stability in international water law, esp. re infrastructure development, protection of foreign investors, *etc.*
- Regarded as a 'loss of sovereign control'!

Implications of International Water Law Measures to Address Water Scarcity

- **Integration** of Water Scarcity values into IWL (allocation models):
 - **Priority allocation** – domestic/municipal, critical industries; non-consumptive uses;
 - **Efficient allocation** - demand management / land-use; dev of alternative supplies; dev of drought indicators / forecasting methodologies;
 - **Flexible / adaptive allocation** arrangements, responding to indicators
 - **Conditional allocation** – referring to flow parameters (prescribed in / under Treaty)
- Joint Basin **Development**:
 - Joint development / operation of storage (optimisation) infrastructure
- Adequate **Data** Generation, Compilation and Exchange
 - Monitoring, data-sharing, joint studies (trends, risks, meta-data); sharing of costs
- Intense **Procedural** Engagement - Cooperation:
 - Joint development / operation of (optimisation) infrastructure
 - Joint drought management planning; early warning / assistance; benefit-sharing;
- Mandated & Capacitated Cooperative (Basin) **Institutions**:
 - **IBRC**: 'Minute' process (Minute 319 – restoring environmental flows) [1944 Treaty]
 - **OMVS**: reallocate waters hrt changes in availability and needs of States [2002 Charter]