3C

TRUST AND ENGAGEMENT | Principle 11. Managing trade-offs

Target group / Relevant stakeholder: National Policy-Makers, Municipal Governments, Regulators, Urban Water Utilities, Medium Water Utilities, Rural Service Providers, Watershed or River Basin Organisations, User Groups, Networks or Platforms, and/or Private Sector

DESCRIPTION

Encourage water governance frameworks that help manage trade-offs across water users, rural and urban areas, and generations (OECD, 2024, 53).

EXPECTED RESULTS

Outputs:

- Non-discriminatory participation in decision-making across people, especially vulnerable groups and people living in remote areas (OECD, 2024, 53).
- Local authorities and users identify and address barriers to access quality water services and resources and promote rural-urban cooperation including through greater partnership between water institutions and spatial planners (OECD, 2024, 53).
- Public debate on the risks and costs associated with too much, too little or too polluted water raises awareness, builds consensus on who pays for what, and contributes to better affordability and sustainability now and in the future (OECD, 2024, 53).
- Evidence-based assessments of the distributional consequences of water-related policies on citizens, water users and places guide decision-making (OECD, 2024, 53).

CONDITIONS FOR SUCCESS

Water management requires balancing human and ecosystems needs (Vörösmarty et al., 2010) while considering intergenerational justice, social equity, geography, and development goals. Addressing these complexities and competing priorities demands the following conditions:

- Inclusive and participatory approaches:
  - Broad participation from diverse stakeholders, including government entities, the private sector, local communities, and underrepresented groups –including indigenous communities, women, and youth– (Pahl-Wostl, 2020; Knox et al., 2018).
  - Collaborative platforms for multi-stakeholder dialogues to balance competing demands.
- Integrated and holistic approaches:
  - IWRM considers interconnected uses of water.
  - Systems thinking addresses environmental, social, and economic dimensions.
- Adaptability and flexibility:
  - Responsive policies adapt to changing conditions, such as climate variability.
  - Iterative decision-making allows for refinement as new information emerges.
- Transparency and accountability:
  - Transparent decision-making processes and open access to water-related information.
  - Clear accountability mechanisms to define roles and responsibilities.
- Equity and fairness:
  - Distributional equity ensures fair sharing of water decisions' cost and benefits.
  - Human-rights based approaches respects water as a basic human right, especially for indigenous and local communities.
- Evidence-based decision-making:
  - Use of scientific data, modelling, and scenario analysis inform water allocation decisions.
  - Improved impact assessment frameworks help to better understand vulnerabilities under changing conditions (Knox et al., 2018).
- Conflict resolution mechanisms:
  - Mediation, negotiation, and consensus building practices resolve competing demands.

BARRIERS

- Estimates of the magnitude and location of changes in water availability and future demand are complex and often contested: This is due to varying socio-economic and physical drivers of demand, such as changes in population, dietary shifts, land use changes, evolving norms and values, rapid socio-economic growth, weak resource management, and climate variability.
- Complexity of balancing many priorities: Managing trade-offs requires integrating water resource protection, equitable access, climate risk mitigation, ecosystem preservation, and sustainable growth (van Rijswick et al., 2014). Water management often involves limited stakeholders and prioritises economic purposes (Kjellén et al., 2021).
- Challenges to operationalise SDG interlinkages: These arise due to data limitations, inconsistencies across sources, complex interdependencies, contextual variations, and evolving temporal dependence and dynamics (Assubayeva and Marco, 2024).
- Lack or perceived lack of information: A key challenge in water management is estimating future demand within realistic uncertainty ranges and analysing how these projections vary across sectors, locations, and time (Knox et al., 2018).
- Uncertainty over sustained collaboration and genuine engagement during times of severe resource scarcity (Knox et al., 2018).
- Economic and financial considerations in water-related decision-making are shaped by a broad range of values, extending beyond those promoted by the Dublin Principles of the International Conference on Water and the Environment (ICWE) (Kjellén et al., 2021; UNEP and WMO, 1992).

SOLUTIONS

- Expansion of the solution space to enhance negotiation opportunities by refining constraints, optimising flow timing to protect environmental water, and integrating ecological improvements into water allocation decisions (Null et al., 2021).
- Shift towards water management systems can equitably balance ecological, social and economic priorities through structured, transparent mechanisms that facilitate multi-stakeholder engagement and navigate trade-offs among diverse values (Kjellén et al., 2021).
- Integrated approach to water resources planning and management through cross-sector collaboration, multi-sector investment, and shared awareness of future challenges (Spyra et al., 2020; Knox et al, 2018).
- Inclusive stakeholder engagement in water management can leverage investment opportunities, enhance efficiency across programmes, and mitigate the risk of underutilised assets or ineffective adaptation to future drought and water scarcity (Knox et al., 2018).
- Collaborative frameworks integrated into the global governance architecture can ensure sustained accountability and engagement (Global Commission on the Economics of Water, 2024).
- Open communication channels between competing sectors, especially during droughts, facilitate mutual understanding and recognition of sector-specific water needs (Knox et al., 2018).
- Comprehensive understanding of water needs at all levels (Global Commission on the Economics of Water, 2024).
- Comprehensive understanding of the hydrological cycle, water scarcity, and water's value across sectors and generations. Encouraging action at all levels requires clarifying distinctions between consumptive and non-consumptive uses, supply versus consumption, and the impact of efficiency measures on abstraction and return flows, with a focus on legal and institutional implications (Global Commission on the Economics of Water, 2024; Knox et al., 2018).
- Clear rules of engagement and common ground for understanding and building of trust.
- Attention to transboundary cooperation for blue and green water can enhance collaboration and develop tailored governance frameworks that ensure the sustainable and equitable management of shared water resources (Global Commission on the Economics of Water, 2024).

- Approaches that generate policy-relevant insights can enhance SDG synergies and transform trade-offs into opportunities for sustainable water management at local, national, and global levels (Assubayeva and Marco, 2024).
- Support mechanisms for marginalised groups who are affected by reforms (Grafton et al., 2019).
- Enhancement of opportunities for consensus between conflicting objectives and promotion of cooperation through effective management (Null et al., 2021).

EXAMPLES

Collaborative Lake Management in Sweden

SDGs linked

Water risks

Lake Vombsjön, a critical drinking water source for 500,000 people in southern Sweden, faces challenges such as eutrophication, seasonal water fluctuations, and competing stakeholder interests. To address these issues, the Fokus Vombsjön project was launched in 2017 as a multi-stakeholder collaboration involving Sydvatten AB, municipalities, landowners, farmers, fishermen, and local residents. The initiative aimed to improve lake health through knowledge building, wetland construction, improved fishery management, and enhanced environmental monitoring. Through "water dialogues" and local ambassador networks, the project has fostered trust and cooperation while addressing agricultural runoff and biodiversity concerns. Its success highlights the value of local partnerships, continuous dialogue, and adaptive management strategies.

Linkages to Governance Principles

The initiative emphasised managing trade-offs, balancing agricultural, recreational, and conservation needs. Integrated strategies and local empowerment were central to stakeholder-led decision-making. Stakeholder engagement was a pillar of the project, ensuring diverse voices contributed to lake management. Monitoring and evaluation enabled informed decision-making, while environmental resilience was strengthened through wetland restoration and pollution reduction efforts.

REFERENCES

Assubayeva, A. and Marco, J. (2024) "Methodological approaches on synergies and trade-offs within the 2030 Agenda". *iScience*, 27(11). https://www.cell.com/iscience/fulltext/S2589-0042(24)02325-3

Global Commission on the Economics of Water (2024) Chapter 10: opportunities for just global water governance. In *The economics of water: valuing the hydrological cycle as a global common good*. https://economicsofwater.watercommission.org/report/chapter-10-economics-of-water.pdf

Grafton, R.Q., Garrick, D.E., Manero, A. and Do, T.N. (2019) "The Water Governance Reform Framework: Overview and Applications to Australia, Mexico, Tanzania, U.S.A and Vietnam". *Water*, n. pag. https://www.semanticscholar.org/paper/The-Water-Governance-Reform-Framework%3A-Overview-and-Grafton-Garrick/ee5aecec98e9d3ef9f99698ce818ec69e743c623

Kjellén, M., Sinha, R., Hebart-Coleman, D., Yaari, E., Muratore, E., Loeffen, A., Pories, L., Delli Priscoli, J., Garrick, D., Gilson, G., Herron, C., Guenther, E., Jindal, A., Willemart, S., Webley, N. and Kinna, R. (2021) "Enabling multi-value approaches in water governance". In UNESCO (2021) *Valuing water.* https://www.jstor.org/stable/resrep65081.18

Knox, J.W., Haro-Monteagudo, D., Hess, T.M. and Morris, J. (2018) "Identifying trade-offs and reconciling competing demands for water: Integrating agriculture into a robust decision-making framework". *Earth's Future*, 6, 1457-1470. https://doi.org/10.1002/2017EF000741

Null, S.E., Olivares, M.A., Cordera, F. and Lund, J.R. (2021) "Pareto optimality and compromise for environmental water management". *Water Resources Research*, 57. https://doi.org/10.1029/2020WR028296

OECD (2024) *A handbook of what works*. OECD iLibrary. https://www.oecd-ilibrary.org/urban-rural-and-regional-development/a-handbook-of-what-works_bf54627e-en

Spyra, M., La Rosa, D., Zasada, I., Sylla, M. and Shkaruba, A. (2020) "Governance of ecosystem services trade-offs in peri-urban landscapes". *Land Use Policy*, 95. https://www.sciencedirect.com/science/article/abs/pii/S0264837719318757

United Nations Environment Programme and World Meteorological Organization (1992)

The International Conference on Water and the Environment (ICWE): development issues for the 21st century. https://wedocs.unep.org/20.500.11822/30961

van Rijswick, M., Edelenbos, J., Hellegers, P., Kok, M. and Kuks, S. (2014) "Ten building blocks for sustainable water governance: an integrated method to assess the governance of water". *Water International* 39, 725-742. https://www.semanticscholar.org/paper/Ten-building-blocks-for-sustainable-water-an-method-Rijswick-Edelenbos/87dea5a32655b33ccee34c6e7e1e998d4983717d

Vörösmarty, C.J., McIntyre, P.B., Gessner, M.O., Dudgeon, D., Prusevich, A., Green, P., Glidden, S., Bunn, S.E., Sullivan, C.A., Liermann Reidy, C. and Davies, P.M. (2010) "Global threats to human water security and river biodiversity". *Nature*, 467(7315), 555-561. https://doi.org/10.1038/nature09440