

CHAPTER 10

Concluding remarks: freshwater – the essential drop to reach net-zero



Mitigation cannot succeed without water

To be viable, sustainable, and ultimately successful, climate mitigation strategies must be underpinned by a clear understanding of the requirements for, and impacts upon, freshwater resources. Insufficient recognition of climate–water interactions in greenhouse gas (GHG) reporting frameworks means that water is not included in climate mitigation planning and reporting to the extent necessary. Currently, countries are not required to report on (potential) water-related mitigation action, except in the area of wastewater treatment. The historical lack of attention to the connection between freshwater and climate mitigation primarily stems from a knowledge gap: the interrelations between water cycles, freshwater availability, freshwater limitations, and mitigation of GHG emissions have not yet been clearly articulated and recognized.

Making a significant contribution to closing this knowledge gap, this report provides a comprehensive scientific overview and assessment of freshwater’s role in, and for, climate mitigation, and shows that as of today, freshwater is an underestimated factor in climate change mitigation. Based on this evidence, this report identifies the following five key messages:

- 1. Climate mitigation measures depend on freshwater resources.** Present and future freshwater availability needs to be accounted for in climate mitigation planning and action.
- 2. Climate mitigation measures impact freshwater.** Freshwater impacts – both positive and negative – need to be evaluated and included in climate mitigation planning and action.
- 3. Water and sanitation management can reduce GHG emissions.** Climate mitigation planning and action should include the substantial emission reduction potential in drinking water and sanitation services, and through the management and protection of freshwater resources.
- 4. Nature-based Solutions to mitigate climate change can deliver multiple benefits for people and the environment.** Priority should be given to measures that can safeguard freshwater resources, sequester carbon, protect biodiversity, improve soil and water productivity, and ensure sustainable and resilient livelihoods.
- 5. Joint water and climate governance need to be coordinated and strengthened.** Mainstreaming freshwater in all climate mitigation planning and action requires polycentric and inclusive governance arrangements that can facilitate integrated approaches.



Decentralised wastewater treatment tank and floating solar farm. Source: Shutterstock.



iSimangaliso Wetland Park in KwaZulu-Natal Province, South Africa. Source: Shutterstock.

These messages are underpinned by the comprehensive scientific review of the interdependencies between freshwater and climate mitigation included in this report. As demonstrated, water is an intricate part of the Earth system but due to current institutional setup, governance needs to be strengthened to enable water-wise climate change mitigation. The strong links between climate mitigation and water hold true across all sectors and biomes explored throughout the report: from the water to the energy sectors as well as across freshwater and land systems. Critically, the report takes a cross-sectoral and multidisciplinary perspective and identifies priority risks and win-wins for water-wise climate planning, investment, and implementation across these sectors and biomes. Specifically, it identifies how water risks could limit the success of the climate mitigation measures, and which mitigation measures could pose risks to the water cycle. Moreover, it identifies win-wins where sustainable water management and governance can contribute to reduce emissions. Four priority areas for water-wise climate action are presented. These highlight specific ways freshwater management can contribute directly to climate mitigation and therefore must be included in climate (mitigation) plans and policies. The report also argues that to mitigate risks and utilize the win-wins, integrated governance approaches are required. To make this governance transition towards managing water and climate in an

integrated manner, the report points towards a number of focus areas, which must be strengthened. Specifically, this includes strengthening data-based decision-making through data generation, harmonization, and transparency, building capacity through inclusive knowledge systems, mobilizing finance to fund the cross-sectoral and integrated efforts needed, and enhancing governance across levels and sectors.

The report presents a scientifically robust case for water-wise climate mitigation. The time to act is now. Following its recommendations will ensure that freshwater is mainstreamed into climate mitigation planning and action. Similarly, climate change adaptation and mitigation measures need to remain as critical considerations in IWRM processes. For governance systems and national implementation plans to succeed, **freshwater needs to be put in its rightful place: at the heart of all efforts to adapt to, as well as to mitigate, climate change.**

We urge the climate and water community alike to respond to this call, by integrating sustainable freshwater management into climate action across all relevant sectors and biomes to accelerate net-zero.