

OECD submission to the UNFCCC Subsidiary Body for Scientific and Technological Advice¹

This submission is provided in response to the UNFCCC Subsidiary Body for Scientific and Technological Advice's (SBSTA) call for submissions from partner organisations and other relevant organisations on "*lessons learned and good practices on adaptation planning processes addressing ecosystems and interrelated areas such as water resources*" and "*lessons learned and good practices in monitoring and evaluating the implementation of ecosystem-based adaptation*".

The Organisation for Economic Co-operation and Development (OECD) welcomes the opportunity to submit inputs based on its experience and expertise in developing policy guidance on water resources management and allocation as well as on monitoring and evaluation of climate change adaptation. The OECD expresses its interest and readiness to contribute to the UNFCCC's on-going work under the Nairobi work programme on impacts, vulnerability and adaptation. The OECD Secretariat is open to discuss, partner and collaborate as appropriate, as well as to contribute to future expert meetings and discussion hosted by the Nairobi work programme and UNFCCC.

1. Lessons learned and good practices on adaptation planning processes addressing ecosystems and interrelated areas such as water resources

The OECD Secretariat has developed a risk-based approach to managing water (the risk of shortage, excess, degraded quality and risks to freshwater ecosystems) to provide a flexible, dynamic and future-oriented way to adapting to climate change.² The approach promotes flexibility so that adjustments to minimise potential damage from climate impacts are made at least cost and avoid potential stranded assets, which is especially important for long-lived, capital intensive water infrastructure. To examine how OECD member countries are addressing climate change adaptation for water resources, the OECD undertook a survey to take stock of policy efforts in this domain. The results of the survey identified both good practices and remaining gaps and challenges (discussed below).

Special attention was paid to managing water shortage and allocating water among competing uses under shifting conditions.³ A robust regime to allocate water performs well under both "typical" and extreme conditions and is flexible enough to adjust to changing conditions, including shifts in water demand, availability and social preferences about the value of water in various uses, such as the environment. A survey of water allocation regimes was undertaken, including 27 OECD member countries, as well as Brazil, China, Colombia, Costa Rica, Peru and South Africa. It provides an empirical basis for understanding how allocation works in practice across a range of countries and identifying opportunities for improving the design and functioning of allocation regimes (discussed below).

¹ This submission provides input based on the OECD Secretariat's research, analysis and data. The information contained in this submission does not necessarily reflect the official views of the OECD or of the governments of its member countries.

² OECD (2013), *Water and Climate Change Adaptation: Policies to Navigate Uncharted Waters*, OECD Publishing, Paris, DOI: <http://dx.doi.org/10.1787/9789264200449-en>.

³ OECD (2015), *Water Resources Allocation: Sharing Risks and Opportunities*, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/9789264229631-en>.

1.1 Key results

The results of the 2013 OECD survey on water and climate change adaptation⁴ concluded that all OECD countries have already observed changes to freshwater systems and nearly all countries expect an increase in water risks in a changing climate. Water shortage and extreme events (floods and droughts) were the most frequently cited concerns. Threats to freshwater ecosystems were a significant concern for a third of the countries surveyed.

In the development of adaptation strategies or plans, water is nearly always addressed as a priority (sector or cross-cutting theme) vital for a number of other key policy areas (energy, agriculture, infrastructures, biodiversity and health). Climate change adaptation is also being mainstreamed into existing water policies. The majority of efforts to date have focussed on building the scientific evidence base and disseminating information about potential climate impacts.

In terms of policy responses, information-based instruments (e.g. flood risk maps, decision support tools for risk management, adaptation guidance for local governments) are by far the most widely used. Some governments are also revising laws and regulations (e.g. sustainable water abstraction limits, building codes, land-use planning) and adjusting economic instruments (e.g. water tariffs, environmental taxes, flood insurance schemes) to reduce baseline stress on water systems, address increasing risks and raise financing. Only a handful of countries covered in the survey had begun to address the issue of financing adaptation⁵.

The results of the 2015 OECD survey of water resources allocation⁶ indicate that allocation arrangements in most countries included in the survey have elements that can encourage a robust system, yet operate with significant limitations. Only 57% of allocation regimes covered in the survey report accounting for the potential impacts of climate change in their allocation arrangements. Environmental flows (water to support ecosystem services) are not secured in at least one-quarter of allocation regimes. While a significant majority of allocation regimes (92%) surveyed have a clear definition on the limit (or “cap”) on consumptive use of water, countries report that these limits may not be respected in practice and only a few rely on flexible limits, which can be adjusted based on shifting water availability.

1.2 Lessons learned and good practices

Sound water policy and adaptive water management will enhance resilience to climate change. At the same time, existing water policies should be reviewed and adjusted, as needed, to deal with increasing risk and uncertainty (OECD, 2013). Well-designed economic instruments (efficient water pricing, water trading, flood insurance) can improve the efficiency and timeliness of adaptation responses by reducing baseline stress on water resources and providing flexibility to deal with increased variability, risks and uncertainty, thereby lowering the cost of adjusting to changing circumstances. Incentives for ecosystem-based adaptation and green infrastructure can provide cost-effective means to address uncertainty by avoiding or delaying lock-in to capital-intensive “grey” infrastructure. Examples of ecosystem-based adaptation

⁴ The detailed results of the survey are presented individual country profiles available on a dedicated OECD [webpage](#). The analysis of the survey results are presented in Chapter 3 of the OECD (2013) publication *Water and Climate Change Adaptation: Policies to Navigate Uncharted Waters*.

⁵ In this regard, there are opportunities for synergies and co-benefits that can be more strategically harnessed. Chapter 7 “Biodiversity in climate change funding” in OECD (2013) *Scaling Up Finance Mechanisms for Biodiversity*, examines prioritisation approaches, including via spatial mapping, that are relevant for ecosystem-based adaptation.

⁶ The detailed results of the survey are presented individual country profiles available on a dedicated OECD [webpage](#). The analysis of the survey results are presented in Chapter 3 of the OECD (2015) publication *Water Resources Allocation: Sharing Risks and Opportunities*.

include restoring wetlands to reduce vulnerability to floods or improving catchment management to improve water quality or quantity. Finally, climate change will likely add to the already substantial financing gap for water systems in OECD countries (OECD, 2013). Climate change also raises several distinct challenges due to the long time frame involved in addressing climate impacts and pervasive uncertainty.

As reforms to water allocation can be contentious and costly, the OECD examined case studies of reform from 10 countries to draw lessons that provide useful insights for policy makers undertaking or considering allocation reform⁷. Generally, water allocation reform is not a discrete, time bound process, but tends to be iterative, extending over many years or decades. Concerns about water scarcity and insufficient water for ecosystems are often cited drivers of allocation reforms, but broader political and economic reforms can also drive reform. Willingness to engage stakeholders and appropriately compensate potential “losers” can facilitate the reform process. Institutional path dependency can raise the cost of improving the flexibility of allocation to respond to changing or novel conditions.

The lessons above have informed the Recommendation of the OECD Council on Water⁸, which was adopted by the OECD Council – OECD's governing body – in December 2016. The Recommendation is a short, concise, comprehensive document that can guide water policy reviews and reforms. It can be useful for developed and developing countries to review the state of play of their domestic water policies and possibly consider reform. Adherence of developing countries is actively encouraged.

1.3 Key challenges

Despite growing scientific evidence of the range of climate change impacts on freshwater, significant gaps in the evidence base remain, which pose challenges for informing practical, site-specific adaptation for water resources. In particular, the level of confidence in climate change projections for key water parameters (e.g. precipitation, runoff) decreases as their relevance for adaptation decision-making about water infrastructure and policy design increases. This means that adaptation decisions need to take into account significant uncertainty.

While governments have identified water resources as a priority area for adaptation and have begun integrating adaptation into water policies and plans, further efforts are needed to review and revise existing water policies to reduce baseline stress on water resources and adapt to increasing water risks. Financing investments that contribute to water security and sustainable growth under a changing climate requires further attention. Such investments fall short of what would be needed to deliver on global needs and goals (including several Sustainable Development Goals) and the impacts on communities, economies and the environment are still significant

Water allocation policies are strongly shaped by historical preferences that have proved difficult to change and existing allocation regimes are usually not well-equipped to deal with mounting pressure on the resource from intensifying competition, climate change or shifts in societal preferences (such as ensure sufficient water to support ecosystem services). The challenges for adapting allocation regimes to become more flexible are aggravated by the entrenchment of weak water policies (under-pricing water or an absence of regulation on use).

⁷ The analysis of the case studies on water allocation reform is presented in Chapter 4 of the OECD (2015) publication *Water Resources Allocation: Sharing Risks and Opportunities*.

⁸ [The OECD Council Recommendation on Water](#) (December, 2016).

1.4 Planned next steps

The *Roundtable on Financing Water* was initiated by the OECD, the World Water Council and the Netherlands to facilitate the financing of investments that contribute to water security and sustainable growth under a changing climate through: awareness-raising on the need for such investments; consensus building on the necessary enabling conditions; and the development of practical recommendations for action by the range of relevant stakeholders. The Roundtable provides a global public– private platform for knowledge exchange and effective engagement, collaboration, and action across governments and regulators in developed, emerging and developing economies, institutional investors, the private sector, international organisations, philanthropies, academia and civil society organisations. Development agencies have a critical role to play if the SDGs related to water agreed upon by the international community are to be reached.

2. OECD guidance on monitoring and evaluation of adaptation policies, including those relating to ecosystems

2.1 Lessons learnt from existing initiatives

The OECD analysed M&E frameworks from six bilateral cooperation agencies to examine the approaches being used for adaptation related projects. Many of the projects analysed focussed on improving the provision of ecosystem services, particularly those provided by forests and wetlands. The key findings from this research were ([Lamhauge et al, 2012](#)):

- The underlying approach to monitoring and evaluation, such as the use of Results Based Management and the Logical Framework Approach, is the same for adaptation as for other types of development interventions.
- Indicators should reflect the design and context of the project, but in general a combination of quantitative, qualitative and binary indicators should be used. No single type of indicator will suffice to capture relevant aspects of the project.

2.2 OECD policy guidance and recommendations

OECD research has provided recommendations for addressing three of the main methodological challenges faced when monitoring and evaluating adaptation interventions ([Dinshaw et al, 2015](#)):

- Attribution: Adaptation may not be the sole, or even primary, aim of an intervention. In that respect, it may be most appropriate to focus on the "contribution" of the project to observed adaptation outcomes, rather than solely assessing against a counterfactual.
- Baselines: The long-term and uncertain nature of climate impacts makes it difficult to develop baselines for adaptation interventions. Techniques that have been applied in the context of conflict-afflicted or fragile states can help to address this challenge. These include reconstructing baselines where data were not collected originally, and normalising data based on contextual factors.
- Long-time horizons: the benefits of some adaptation interventions may not become apparent for several decades after the project commences. Establishing longer-term monitoring processes would help to support learning about the effectiveness of different approaches. Longer term monitoring can also help to address uncertainty by identifying areas where it may be necessary to change direction in response to changing conditions.

The primary recommendation of our work on how to assess progress on monitoring and evaluation of adaptation at the national level is to align the monitoring and evaluation of adaptation within national systems. The following extract from [OECD \(2015\)](#) summarises how four key tools can be used to assess progress in implementing adaptation:

- "Climate change risk and vulnerability assessments. When conducted at the outset of a national focus on adaptation, such assessments can contribute to a baseline of the country's climate vulnerability against which progress on adaptation can be reviewed. If the assessments are repeated on a regular basis (e.g. to inform national planning and budgeting cycles) they can provide a picture of how climate risks and vulnerabilities are changing over time. However, to understand how these changes came about, the assessments can benefit from the application of complementary tools, including those outlined below.
- Indicators to monitor progress on adaptation priorities. Indicators can facilitate the monitoring of climate risks and vulnerabilities over time and between locations. Since the identification, collection, and use of indicators is resource intensive, a carefully defined set of qualitative and quantitative indicators may be aligned to the adaptation priorities identified in the country's strategic approach on adaptation. Alternatively, the indicator set may draw on existing datasets and, where possible, on indicators used to monitor and evaluate national development plans and policies. However, indicators alone will fail to provide adequate insight into, and understanding of, the context in which adaptation is taking place.
- Project and programme evaluations to identify effective adaptation approaches. Although the evaluations of adaptation projects and programmes face a number of challenges and uncertainties, they can help to identify what approaches to adaptation are effective in achieving agreed objectives. Further, they can contribute to a better understanding of the conditions required for the adaptation measures to succeed. Individual countries can benefit from lessons learned from large adaptation interventions and innovative pilot approaches to adaptation.
- National audits and climate expenditure reviews. These examine whether public expenditures on adaptation are aligned with national and international policy goals, are allocated in accordance with existing rules, regulations and principles of good governance, and if they are allocated in a cost-effective manner. Further, audits and expenditure reviews examine whether the national institutional mechanisms are in place to effectively manage and deliver climate finance. They support accountability, particularly in developing countries where resources received from development co-operation providers may be specifically earmarked for adaptation."

References

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Annex 1. OECD contact points

The OECD is happy to provide information on progress in these and its other climate policy-related activities. We have indicated contacts on each work area below to facilitate future communication.

Water management and allocation in the context of climate change adaptation

- **Kathleen Dominique** (Kathleen.Dominique@oecd.org) and **Xavier Leflaive** (Xavier.Leflaive@oecd.org)
- Websites: [Water and Climate Change Adaptation](#), [Water Resources Allocation](#) and the [OECD Council Recommendation on Water](#).

Climate change adaptation

- **Michael Mullan** (Michael.Mullan@oecd.org), <http://www.oecd.org/environment/cc/adaptation.htm>

Transparency

- **Jane Ellis** (Jane.Ellis@oecd.org), <http://www.oecd.org/env/cc/ccxg.htm>