ADAPTING WATER POLICY FOR CLIMATE CHANGE ADAPTATION

Addressing risk and uncertainty

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BETTER POLICIES FOR BETTER LIVES

A window of opportunity for adapting water policies…

Recognition that good water policy constitutes, to a large extent, good adaptation policy

Failure to consider policy context can constrain or undermine adaptation or result in mal-adaptation

Shifting focus from impact and vulnerability assessments and projects towards a more strategic approach

e.g. from NAPAs to NAPs

Scaled-up funding for adaptation could provide means to invest in improving the policy framework, in turn helping to ensure adaptation investments are well-spent

...to facilitate timely and cost-effective adaptation...

Exploit 'no regrets' and 'low regrets' options

Prioritise options viable under all plausible futures

Identify and facilitate low cost, flexible (possibly reversible) options

Consider full range of options (such as "green" as well as built infrastructure) early in the planning / project cycle

Encourage "technology neutral" policy environment

Consider *expected* costs and benefits

Requires discounting rate appropriate for long time frames

Minimise timing errors – responses are likely to be either too early or too late

Adopt a flexible or real options approach to capital investments for long-lived, irreversible infrastructure with long lead times, such as flood defenses

...and promote risk reduction and equitable risk sharing...

Assess and manage climate risks alongside other risk factors

Requires attention to the range of drivers that impact the likelihood and severity of risks and the exposure and vulnerability of populations, assets and ecosystems

Reduce or remove barriers to internalise climate risks

Promote production and dissemination of information

Reform insurance schemes and subsidies that dull incentives to reduce risk exposure and adapt to long term change

Explicitly address risk implications of water policies

Clarify roles and responsibilities

Assign risks to agents best able to manage them

Ensure equitable risk sharing arrangements, taking into account environmental needs

Policy instruments for adaptation: examples

	Regulatory	**Economic**	**Information-based**
Risk of **water shortage** (including drought)	-Restriction on water use (e.g. hosepipe ban) -Administrative allocation of water	-Water pricing -Water trading -Abstraction taxes, charges -Dry-year options -Payments for ecosystem services (PES) -Insurance schemes -Microfinance schemes	-Information and awareness campaigns to promote water saving
Risk of **inadequate quality**	-Water quality standards -Pollution discharge permits	-Pollution taxes, charges -Tradeable pollution permits -PES	-Information and awareness campaigns -Technical assistance for improved farming techniques
Risk of **excess** (including flood)	-Land use planning/ zoning restrictions -Building codes/ standards	-Insurance schemes -Public private partnerships (e.g. for flood defense structures) -PES -Microfinance schemes	-Flood risk mapping -Early warning systems

Example: Insurance schemes

Adaptation benefits

Provide incentives for adaptation and for reducing risk exposure and vulnerability (through price signal)

Efficiently spread risks

Provide compensation in the case of extreme events, reducing overall damages and providing finance to restore damaged capital

Key challenges

Difficult to price future risks, as historical references are not indicative of future trends (non-stationarity)

Increasing likelihood and severity of extreme events likely to create tensions between insurance priced efficiently (to reflect actual risk) and affordability

Need to avoid moral hazard and inadvertently promote mal-adaptation, by dulling or removing incentives to adapt to long term change

Examples of instruments

Traditional indemnity-based insurance, index-linked insurance, weather derivatives and catastrophe bonds

Example: Incentives for ecosystem-based adaptation

Adaptation benefits

- Often more flexible, less capital-intensive and more easily reversible than built infrastructure
- Can provide scalable complement to existing built infrastructure, allowing for incremental changes over time, as required

Key challenges

- Require a thorough understanding and assessment of value of ecosystem services
- Require adequate institutional capacity to establish, monitor and enforce

Examples of instruments

- Payments for ecosystem services (PES), tax incentives, land-use planning

Example: Water pricing

Adaptation benefits

Promote efficiency in use, contributing to demand-side management

When prices reflect the scarcity value, can signal optimal time to invest in water infrastructure, so that supply can be augmented efficiently

Key challenges

Affordability for low income households can be ensured, preferably through direct social transfers

Gaining social acceptability for scarcity pricing

Example: Water trading

Adaptation benefits

Promote flexibility and efficiency in allocation of water resources

Facilitate trade from areas of surplus to areas of scarcity and from lower value to higher value uses

Risks are more equitably shared among users when water rights are defined as shares adjusted for water inflows, accounting for environmental impacts

Key challenges

Requires significant capacity to establish the necessary institutional (tradable water rights, licensing, systems for monitoring and enforcement) and technological (supply and distribution infrastructure to deliver and transport water) conditions

Example: Microfinance

Adaptation benefits

Facilitate "autonomous" adaptation by easing financial constraints to build resilience and reduce risk exposure and vulnerability via:

- disaster preparedness and relief
- improving access to water supply for household and productive uses (*e.g.* irrigation)
- providing adequate sanitation, reducing risk of water borne diseases

Can target most vulnerable, such as poor households and women

Key challenges

Start-up funding, usually from governments and international donors, is critical

Sustainable and predictable funding required for viability of programmes

Source: Agrawala, Shardul and Maëlis Carraro (2010), "Assessing the role of microfinance in fostering adaptation to climate change", OECD Environmental Working Papers, No. 15, OECD publishing.

Monitoring and Evaluation (M&E) for Adaptation

Approaches

Result Based Management and the Logical Framework Approach are the most common M&E approaches across the 6 development co-operation agencies reviewed in a recent OECD survey

Approaches differ by the level of detail (*e.g.* the standard logframe approach, the expanded logframe approach, the simplified approach)

Most of the agencies distinguish between activities, outputs and outcomes

Indicators

Show how results will be measured, provide an overview of change over time, prioritise inputs and communication outcomes

Can take the form of input, process, output or outcome indicators

Can be categorical, quantitative or qualitative; a combination is needed

Source: Lamhauge, N., E. Lanzi and S. Agrawala (2012), "Monitoring and Evaluation for Adaptation: Lessons from Development Co-operation Agencies", OECD Environmental Working Papers, No. 38, OECD publishing

Monitoring and Evaluation (M&E) for Adaptation

Baseline, milestones and targets

Baselines provide a reference point against which results can be measured

- Without carefully defined baselines, mid-term and final evaluations based on milestones and targets are difficult to conduct
- Often based on assumptions of static climate, yet may require the application of climate projections
- Requires a certain level of technical expertise

Targets provide a benchmark for evaluating achievement

- May also change in the context of climate change

Milestones are useful for monitoring progress

- Allow project staff to monitor progress and revise project components if needed

M&E: Key findings

Recent OECD survey of 6 development co-operation agencies

Setting baselines and targets may require more systematic use of climate projections, yet not the current practice

With long time horizons, the timing of M&E must be revised to 20 years or more, yet today most evaluations occur 5-10 years after project completion

“Attribution” to outcomes is difficult; new M&E approaches focus on “contribution”. Most agencies use combination of process and impact indicators.

Ongoing work on M&E in OECD countries

Convergence among OECD countries to measure process indicators in the short-term and postpone the evaluation of long-term impacts

Further information

OECD work on water: www.oecd.org/water

OECD work on climate change adaptation: www.oecd.org/env/cc

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