Lessons from the future: unblocking the science-policy interface

Prof. Jacqueline McGlade
Executive Director, EEA
The problem for environmental action

- Taking preventive action now impacts existing constituencies in specific, quantifiable ways.

![Image of a scale with Costs on the left, Benefits on the right, and a question mark after 2030s?]

European Environment Agency
The problem for environmental action

- Taking preventive action now impacts existing constituencies in specific, quantifiable ways.
- Those who will benefit from this action are less well-known and typically benefit in a more diffuse way as benefits are shared by a larger group.

[Diagram showing a balance scale with 'Costs' weighing down 2012 and 'Benefits' weighing down 2030s?]
But the scales can be tipped back...

- Successful public policy has managed to overcome this problem
But the scales can be tipped back...

- Successful public policy has managed to overcome this problem.
- Science and economics can make the future costs of inaction more clear.
The 2007 Stern Review of Climate Change

The Economics of Climate Change
The Stern Review

- The Stern review made clear the future costs of inaction to show that preventive early action would be cheaper than dealing with the effects of climate change.

- Dealing with the costs of climate change could be between 5% and 20% of GDP, but preventive action would only cost 3% of GDP.
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- The Stern review prompted changes in EU and UK climate change policy.
The phase-out of leaded petrol

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- IQ loss could be translated to lower earnings over a lifetime and therefore to a social cost.
‘Discounting’ for the time value of money
Discounting presents a problem

- Future costs of inaction (and therefore future benefits from action) are not equivalent to current costs of preventive action.
Discounting presents a problem

• Future costs of inaction (and therefore future benefits from action) are not equivalent to current costs of preventive action

• We can make these two costs comparable by means of a ‘discount rate’, but establishing a discount rate is highly complex and is likely to remain an ongoing problem in environmental policy
Accounting for the ‘time value of harm’...

How could we measure the value of a one-year decline in life expectancy for this boy?
Accounting for the ‘time value of harm’...

How could we measure the value of a one year decline in life expectancy for this boy?

Would it be the same as a one year reduction in life expectancy for his grandfather?
..and the time value of time itself...

Problems include:

- How to value human lives?
- How to value years in human lives
- How to value periods of greater and lesser health at different stages of life
.and the time value of time itself...

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- How to value years in human lives
- How to value periods of greater and lesser health at different stages of life

These calculations may make it easier to assess policy decisions, but they are highly complex, and will always be the subject of dispute.
Nitrates and scientific uncertainty

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- Where science is uncertain, it is not possible to provide an accurate assessment of the costs of inaction
- This means there is a role for a risk-based approach, and for ‘cross-referencing’ of different policy goals. For example, in the case of nitrates, decreasing a health risk will also decrease water eutrophication.
- The precautionary principle is more important than ever
Thank you!

Jacqueline McGlade
jacqueline.mcglade@eea.europa.eu