Chapter **18**

Conclusions on Policy Effectiveness

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18.1 Overview of the outcomes

This chapter presents a set of conclusions for Part B of the sixth Global Environment Outlook (GEO-6), reached through the findings of the previous chapters about policy effectiveness (Chapters 10-17). It summarizes for policymakers what is known to work best and why, including a synthesized discussion of the limitations of the evidence available to date for policy effectiveness. We also make reference to Part C (Outlooks), which will examine the promising emerging policies for the future.

There is considerable innovation in policy approaches and instruments across all the environmental themes covered by the sixth Global Environment Outlook (GEO-6) (Chapters 12-17). New institutions, policies and policy instruments have been developed and introduced all over the world. Environmental policy innovation takes place not only in Western industrialized countries, but also in emerging and developing economies. Policies are developed that go beyond technical fixes by increasingly addressing social and economic practices.

Environmental policy innovation also takes place to address issues of equity and environmental protection at the same time. Examples of this include the territorial rights for fishing in Chile, or the free basic water allocation in South Africa, both of which are measures to secure access to natural resources for low-income communities while at the same time promoting sustainable management.

Environmental policies aim to reduce emissions and depletion of resources by encouraging behavioural change or limiting the choices of consumers, enterprises and communities. Different modes of intervention are being used: persuasion, economic incentives and regulation.

There is no single instrument for complex environmental problems, and policy mixes are more effective, often combining different modes of governance that mutually reinforce each other (referred to as 'hybrid governance'). Combining measures on the demand side, for taxing and labelling environmentally harmful consumption, with measures on the production side, to limit emissions, is one example that can mutually reinforce environmental innovation, and create markets for it.

Environmental policies are also defining the processes that enable and encourage actors to reflect on their environmental performance – environmental impact assessments, planning procedures and environmental management systems, for example.

Chapters 12-17 also show that environmental actors within and beyond governments are being established or strengthened by many environmental policies, showing an unfolding of effects on environmental performance. Environmental policies and institutions do not determine resource use and emissions on their own – there is also the role of policies in sectors such as housing, infrastructure, agriculture, industry, energy, and so on. A further mechanism that promotes effective environmental policy – albeit a difficult one to achieve –lies in the integration of environmental concerns into other sectoral policies.

While policy integration promises to settle conflicts between environmental and other objectives (Nilsson *et al.* 2012; Runhaar, Driessen and Uittenbroek 2014; Mullally and Dunphy 2015), the analysis in the previous chapters demonstrates that this has rarely been achieved in practice. There is a lack of systematic evidence on how sectors such as agriculture, transport, urban planning and water management can incorporate environmental standards to prevent, reduce or mitigate harmful environmental effects. Changes in policy mixes are often compelled by pressure from different groups and sectors that have opposing stakes on a resource, environmental asset or ecosystem service.

Many countries (and some international organizations) have begun to adopt integrated approaches or instruments to assess the potential impacts of proposed legislation on stakeholders and their well-being, economic sectors, and the environment (Radaelli 2009; Jacob *et al.* 2011; Adelle and Weiland 2012; Adelle *et al.* 2016; European Environment Agency [EEA] 2017). Such integrated policies may help to achieve the broader set of Sustainable Development Goals (SDGs) in a cost-efficient way, overcoming existing barriers and trade-offs.

Environmental policy integration tools include regulatory impact assessment, environmental and health impact assessment, and strategic environmental assessment. These evidence-based policymaking tools are increasingly being adopted to demonstrate the need for improved environmental policies. Considerable experience is emerging in the use of these tools, particularly in the European Union.

To date, however, there is little evidence to measure the level of policy integration or the actual outcomes from applying various tools. Among the few exceptions is the Partnership for European Environmental Research (Mickwitz *et al.* 2009), which assessed climate policy integration in Europe, at multiple scales. A key lesson from the project is that cities and municipalities have begun to integrate climate aims into their strategies and plans, and that such authorities sometimes have more ambitious goals than national governments.

An important argument in favour of environmental policy integration is the expected economic and social co-benefits from implementing environmental policies. These co-benefits include additional economic growth spurred by innovation, savings from the conservation of natural resources, and the avoided costs of environmental damage. The United Nations Environment Programme (UNEP) estimates that two per cent of global gross domestic product (GDP) in green investment would deliver long-term economic growth while minimizing the adverse impacts of climate change, water scarcity and loss of ecosystem services (UNEP 2011).

The analysis in GEO-6 of environmental policies and their integration demonstrates the diversity of institutional and cultural frameworks in which policymaking takes place. The roles of law, values, administrative capacities, socioeconomic conditions, and so on, are important in how effective policies can be. The design of policies that reflect on this set of conditions is important.

The effectiveness of the thousands of policy innovations cannot be assessed comprehensively; a case-by-case approach is needed to make evaluations. The effectiveness of different policy instruments cannot be compared given the multiple market failures, including, among others, the lack of price signals, lack of information and network effects. There is no evidence, for example, to support claims of a general superiority of market-based instruments over regulatory or persuasive ones. The analysis presented here by GEO-6 does show evidence, however, for the need to combine different policies into complementary policy mixes of clusters. Despite the recognition that coherent policy mixes are often more effective than stand-alone policies, the interplay of instruments within mixes is not well understood, aside from the rather broad understanding that some policy instrument types do not necessarily work well with others.

Effective and ambitious environmental policies are often contested by the sectors affected. Their design, and the level of ambition, is usually the subject of negotiation in the policy process, during which environmental actors usually need to find compromise. Second-best environmental policies are often adopted as a result. For many issues and in many countries, environmental policy does not make use of potentially powerful mixes of price signalling and hard regulation. Instead, mechanisms of persuasion, self-regulation or subsidy are introduced. Chapters 12-17 also find, finally, that vested rights and interests are often not touched on, with environmental policies instead focusing on new products or sites, by having permitting procedures for development projects, for example.

Once environmental policies have been established successfully, their scaling up has been observed. Moreover, new opportunities and capacities for advancing policies, and for raising the level of ambition over time have been observed once the technical, social and economic feasibility has been demonstrated and markets for environmentally friendly alternatives have been created. In a few cases, these opportunities were built into the policy design from the very beginning. The commitment for a continuous improvement of policies over time could be applied much more often than it is today, in the manner of the so-called ratchet mechanism of the Paris Agreement on climate change (United Nations Framework Convention on Climate Change [UNFCCC] 2015).

In view of the challenges outlined above, there is an emerging consensus that the design of policy instruments is at least as important as the choice of the instrument, for the effectiveness of individual policies and policy mixes (Yin and Powers 2010; Flanagan, Uyarra and Laranja 2011; Kemp and Pontoglio 2011). The temporal dynamics of policy change, how and why specific policies stick (or fail to stick) and how policy choices interact in an increasingly complex policy mix all need to be better understood. As these lessons are learned over time, the level of ambition is expected to increase – especially, as the GEO-6 finds, if environmental policies prove to have economic and social co-benefits.

Added to the observation that environmental policies are being scaled up within national borders, they are also diffusing across jurisdictions. Other countries, regions or communities are taking up and adapting the examples of pioneering countries. Some publicly available data sets aim to facilitate the charting of this diffusion, particularly for policies on climate

change and renewable energy. The Climate Change Laws of the World database from the London School of Economics (Grantham Research Institute on Climate Change and the Environment 2017), for example, compiles information on national-level climate policies ranging from transport policy to adaptation and mitigation. Similarly, REN21's Global Status Report (Renewable Energy Policy Network for the 21st Century [REN21] 2018) charts the use of renewable energy policies across a large sample of national and subnational jurisdictions. InforMEA, finally, is the United Nation's portal for information on multilateral environmental agreements (UNEP, Food and Agriculture Organization of the United Nations [FAO] and United Nations Educational, Scientific and Cultural Organization [UNESCO] 2018).

Despite the prolonged interest in the spatial diffusion of environmental policies, and efforts to provide systematic policy information on it, knowledge about this particular aspect of policy development remains limited, especially outside the specific policy field of renewable energy. There is also a lack of research on the role of local contexts on the effectiveness of policies adopted from abroad. There is some evidence that less ambitious policies (e.g. distributional rather than re-distributional policies) are the subject of policy diffusion more often than cross-jurisdictional policies. This is in spite of the fact that policy diffusion may be considered a positive mechanism for learning across different jurisdictions – often facilitated by international regimes and multilevel governance.

The GEO-6 analysis finds that the importance of good policy design for the effectiveness of environmental policies cannot be overstressed. Mickwitz *et al.* (2009, p. 12) list some common elements of good design:

❖ set a long-term vision and avoid crisis-mode policy decisions, through inclusive, participatory design processes;
❖ establish a baseline, quantified targets and milestones;
❖ conduct *ex ante* (before implementation) and *ex post* (after implementation) analyses of cost-benefit or cost-effectiveness to ensure the best use of public funds;
❖ build in monitoring regimes during implementation, preferably involving affected stakeholders; and
❖ evaluate the policy outcomes and impacts, to close the loop for improving future policy design.

Despite this comprehensive list, assessments of policy effectiveness both *ex ante* and *ex post* against a baseline are usually missing, even for well-designed policies. The analysis finds that policy evaluation tools are rarely used. An evidence base for measuring policy effectiveness is therefore lacking because it is difficult in many cases to attribute effects to environmental policies, and whether these effects would have taken place without the policies. Impact assessments and policy evaluations are not being applied in a systematic way. Therefore, while the analysis of indicators, and the distance still to go to reach the goals, suggests that environmental policies are not yet sufficiently effective to achieve sustainable development, the analysis cannot reveal which policies and policy instruments are more effective or efficient than others.

There is no universally accepted methodology that can show causal relationships between the effects and the policies adopted, and unequivocal answers on policy effectiveness

18

unfortunately cannot be provided. It is rarely feasible or ethical in the environmental domain to conduct policy experiments that show the counterfactual – that is, what would have happened had there been no policy?

Further, the literature shows the importance of various constraining and enabling factors, such as institutional capacity and political will. Policies also rarely stand alone, and the importance is stressed, as discussed earlier, of coherent, synergistic policies, or policy mixes. It is important, too, to recognize co-benefits and unintended side effects. Finally, spillover effects need to be recognized, especially where these involve transboundary concerns.

Accordingly, a two-track process was adopted for the assessment of policy effectiveness (Chapter 10) in GEO-6. For the top-down perspective, the author teams identified typical policy approaches that have been employed to solve key environmental problems in the areas of air, biodiversity, oceans, land, fresh water (surface and groundwater), and cross-cutting issues (Chapters 12-17). To illustrate experience in the implementation of these policy approaches in greater detail, specific case studies were selected, and effectiveness criteria derived from the literature were used to provide a qualitative assessment of policy effectiveness.

The second track, bottom-up, was to identify policy-sensitive indicators, meaning that one should be able to construct, again from the literature, a plausible story around why each indicator appears to be improving in response to a policy or policy mix. Within Chapters 12-17, the subsections on indicators therefore cover:

❖ their descriptions and their relation to SDGs or other multilateral environmental agreements;
❖ how data are collected for each indicator;
❖ a plausible line of argument for how an observed improvement in the indicator across multiple countries could be due, at least partly, to one or more policies;
❖ what other factors might explain the improvement; and
❖ what alternative indicators could verify the role of policies.

The narrative is interspersed with infographics. Depending on the availability of data in the literature, these help to show: correlations between the adoption of certain policies by countries and improvements in the indicators; trend analysis showing improvement in the indicator; or the numbers of countries reporting on the indicator over time.

From the limited number of case studies that could be addressed in GEO-6, it is apparent that there are very few cases where all the effectiveness criteria have been comprehensively covered at the policy design, implementation or post-evaluation stages of the policy cycle. In many cases, no quantifiable baseline was established, making it difficult to show quantitative evidence that the policy was improving environmental outcomes as intended. In most cases, there was no *ex ante* cost-benefit or cost-effectiveness analysis, making it uncertain that the best policy choice had been made. While co-benefits were often identified, in most cases through hindsight, there was no evidence of a deliberate, prospective attempt to ensure policy coherence and synergies. While most policies specifying a timeframe had been conducted within that period,

a surprising number of case studies appeared to be open ended, with no specific time for closure, evaluation or renewal. Many of the case studies were linked to global processes and agreements, which suggests that comprehensive environmental agreements like the Paris Agreement and the SDGs do provide an overarching policy framework that guides national policy processes.

The findings from GEO-6's assessment of policy effectiveness, as well as from its assessment of the evaluation methods used, have the potential to help develop a baseline for future research and global assessments. Continued efforts on policy evaluation would also help to close these gaps in data.

18.2 Connections to future policy

The analysis above of policy effectiveness inevitably comes after a lag in time because policymakers do not know if a policy has been effective until some years after its initial implementation, especially if part of the indication of effectiveness is viewed to be implementation across multiple countries. This means that Part B has not been able to showcase new emerging, promising policy approaches, which are instead addressed in Chapter 24 (The Way Forward). Future editions of GEO will need to assess the eventual effectiveness of these policy approaches following their implementation. Policymakers have the opportunity meanwhile to examine the effectiveness criteria selected in GEO-6 and to use these when designing the new generation of policies and planning their evaluation.

Improved policies and governance arrangements will form an essential part of crafting pathways towards sustainability. It is likely that the emerging and promising policies covered in Part C (Outlooks) will come into this picture – because the current set of policy approaches are unlikely, with the required urgency, to achieve the SDGs, Paris Agreement and other multilateral environmental agreements. One example of the need for new innovative policy is that the setting of national standards, as part of the normal command-and-control policy approach to combating pollution, is too slow and unwieldly to keep up with the thousands of new chemicals, materials, genetically modified organisms and nanotechnologies being released into the environment every day.

18.3 Gaps in knowledge

The policy-effectiveness analysis conducted for GEO-6 has struck out into a new direction for UN Environment. Policymakers want to know which policies work and why, but assessments should not stray too far into policy advocacy. The costs of inaction and inordinate delays in policy implementation also need to be studied, as well as the effectiveness of policy action. The key gap, surprising many of the authors, was the paucity of well-documented evaluations of the selected case studies that illustrate the importance of the science-policy interface. It appears that in most countries it is either not the practice to conduct post-evaluations of policies, or if such evaluations are conducted then the results are not in the public domain.

We suggest that UN Environment works with member countries to extract those policy evaluations not currently in the public domain to create a section for policy effectiveness in the online data portal, Environment Live. Researchers and

Policies, Goals, Objectives and Environmental Governance: An Assessment of their effectivess

policy think tanks should also be encouraged to conduct policy-effectiveness studies to provide the independent analysis that appears to be in short supply.

The need for a universally acceptable methodology to assess policy effectiveness represents another critical gap. The challenge for researchers and policy think tanks is to conduct such analyses regularly, and for policymakers to apply this information in advancing policymaking.

Another gap in knowledge relates to the policy-sensitivity of indicators. Among the hundreds of indicators selected for the SDGs, which of these are policy-sensitive? Of the indicators that are policy-sensitive, what are the corresponding policies that they are sensitive to? Which of these should governments be considering to achieve accelerated progress on the indicators? Of the SDG targets that UN Environment is responsible for, which are policy-sensitive, and what should be the role of UN Environment in not only tracking these but also analysing policy effectiveness?

Finally, there is also a gap in relation to the analysis of social and economic policies, such as sectoral policies, that have important effects on environmental conditions. It is not sufficient to analyse only environmental policies. Tools such as Environmental Impact Assessments (EIA) and Strategic Environmental Assessments (SEA) can be used to examine the environmental consequences of projects, policies, plans and programmes. More importantly, however, sectoral agencies should engage with environmental experts for help with avoiding adverse environmental consequences to planned activities.

18.4 Key lessons from the analysis

Consider policy effectiveness at the design stage. Most of the weaknesses identified in environmental policy approaches stem from inadequate analysis at the design stage. The empirical analysis in GEO-6 demonstrates that, too often, environmental policy decisions are knee-jerk reactions to environmental crises rather than part of a deliberative, long-term process of policy selection and design to avoid environmental damage.

Establish a verifiable, quantitative baseline. A quantitative baseline that is science-based and verifiable, with firm targets, is an essential component of effective policies. For policies that will take a long time to reach fruition, quantitative milestones will also help to ensure that policy implementation is on the right track.

Conduct cost-benefit or cost-effectiveness analysis at the policy design stage. For most environmental problems there are multiple alternative policies that could achieve the desired outcomes. Water pollution, for example, could be controlled by regulations to change production processes, by the establishment of ambient or discharge standards, by imposing discharge fees, or through dilution from upstream reservoirs – or some combination of these. An examination needs to be made at the policy-design stage on what is the most effective use of public and private funding. This needs to be checked

subsequently to ensure that the right policy choice has been made.

Ensure policy coherence and synergy. There is strength in numbers. Generally, a single, stand-alone policy will not be as effective as a mix of policies that work together towards the same policy goal. Equally important, however, is to examine policies that might adversely impact or conflict with the policy objective. For example, policies to promote renewable energy may be undermined by continued subsidies to thermal power plants.

Conduct independent post-evaluation studies. The literature examined for this report found that there were few independent post-evaluation studies of policies. Evaluation by governments is necessary and important, but greater confidence may be achieved by unbiased, independent studies. A crucial role for funding agencies, therefore, is to provide the necessary resources for more of these, particularly in developing countries, where there is a dearth of good policy assessment.

Engage key actors in all aspects of the policy cycle. A complex web of stakeholders who need to be involved in each part of the policy cycle is revealed by the case studies. This implies a need for transparency in the policy process. Inclusive policy processes will generally be more effective than those which exclude some of the actors. There may be a cost and additional time constraint in being inclusive, but this tends to be compensated during implementation, whereas protests or legal challenges could delay implementation plans.

Identify the indicators that are policy-sensitive and can demonstrate causal links. Establish a clear linkage from the indicators in the SDGs and other multilateral environmental agreements to known effective policies. The case studies showed the importance of multilateral agreements in the specific areas of air, biodiversity, oceans, land, fresh water (surface and groundwater), and in several cross-cutting areas. While such agreements are often unenforceable at the global level, they do carry moral suasion and provide peer pressure to embody the agreed approach in national and subnational policies, plans and programmes. Only weak links have been made so far between indicators and effective policy, however, and additional work needs to be done in establishing these connections.

Conduct additional research on policy effectiveness. Researchers often finish their assessments with a call for more research, but in this case, it is justified. There are remarkably few well-documented case studies of policy effectiveness that follow the policy decisions throughout the policy cycle, from design to post-evaluation. The future work of UN Environment needs to strengthen the link between policies and environmental outcomes, particularly since the indicators for SDGs are being monitored nationally and reported on globally. Further studies are needed on the political ecologies and stakeholder dynamics that underpin, drive or constrain the formation and movement of policies designed for environmental issues and sustainable development.

References

Adelle, C. and Weiland, S. (2012). Policy assessment: The state of the art. *Impact assessment and project appraisal* 30(1), 25-33. https://doi.org/10.1080/14615517.2012.663256

Adelle, C., Weiland, S., Dick, J., González Olivo, D., Marquardt, J., Rots, G. *et al.* (2016). Regulatory impact assessment: A survey of selected developing and emerging economies. *Public money & management* 36(2), 89-96. https://doi.org/10.1080/09540962.2016.1118930

European Environment Agency (2017). *Perspectives on Transitions to Sustainability.* Copenhagen. https://www.eea.europa.eu/publications/perspectives-on-transitions-to-sustainability/at_download/file.

Flanagan, K., Uyarra, E. and Laranja, M. (2011). Reconceptualising the 'policy mix' for innovation. *Research policy* 40(5), 702-713. https://doi.org/10.1016/j.respol.2011.02.005.

Grantham Research Institute on Climate Change and the Environment (2018). *Climate change laws of the world.* [London School of Economics http://www.lse.ac.uk/GranthamInstitute/climate-change-laws-of-the-world.

Jacob, K., Weiland, S., Ferretti, J., Wascher, D. and Chodorowska, D. (2011). *Integrating the Environment in Regulatory Impact Assessments.* Paris: Organisation for Economic Co-operation and Development. https://www.oecd.org/gov/regulatory-policy/Integrating%20RIA%20in%20Decision%20Making.pdf.

Kemp, R. and Pontoglio, S. (2011). The innovation effects of environmental policy instruments—A typical case of the blind men and the elephant? *Ecological Economics* 72, 28-36. https://doi.org/10.1016/j.ecolecon.2011.09.014.

Mickwitz, P., Aix, F., Beck, S., Carss, D., Ferrand, N., Görg, C. *et al.* (2009). *Climate Policy Integration, Coherence and Governance.* PEER Report. Helsinki: Partnership for European Environmental Research. http://library.wur.nl/WebQuery/wurpubs/fulltext/3987.

Mullally, G. and Dunphy, N. (2015). *State of Play: Review of Environmental Policy Integration Literature.* Research Series Paper. Dublin: National Economic and Social Council. https://cora.ucc.ie/handle/10468/3029.

Nilsson, M., Zamparutti, T., Petersen, J.E., Nykvist, B., Rudberg, P. and McGuinn, J. (2012). Understanding policy coherence: Analytical framework and examples of sector–environment policy interactions in the EU. *Environmental Policy and Governance* 22(6), 395-423. https://doi.org/10.1002/eet.1589

Radaelli, C.M. (2009). Measuring policy learning: Regulatory impact assessment in Europe. *Journal of European Public Policy* 16(8), 1145-1164. https://doi.org/10.1080/13501760903332647.

Renewable Energy Policy Network for the 21st Century (2018). *Renewables 2018 Global Status Report. A Comprehensive Annual Overview of the State of Renewable Energy.* Paris. http://www.ren21.net/wp-content/uploads/2018/06/17-8652_GSR2018_FullReport_web_final_.pdf.

Runhaar, H., Driessen, P. and Uittenbroek, C. (2014). Towards a systematic framework for the analysis of environmental policy integration. *Environmental Policy and Governance* 24(4), 233-246. https://doi.org/10.1002/eet.1647.

United Nations Environment Programme (2011). Supporting the transition to a global green economy. In *Towards A Green Economy: Pathways to Sustainable Development and Poverty Eradication.* Nairobi. chapter Part III. https://wedocs.unep.org/bitstream/handle/20.500.11822/22025/green_economyreport_final_dec2011.pdf?sequence=1&isAllowed=

United Nations Environment Programme, Food and Agriculture Organization of the United Nations and United Nations Educational, Scientific and Cultural Organization (2018). *Access information on multilateral environmental agreements.* https://www.informea.org/ (Accessed: 17 October 2018.

United Nations Framework Convention on Climate Change (2015). *Paris Agreement.* Paris. https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf.

Yin, H. and Powers, N. (2010). Do state renewable portfolio standards promote in-state renewable generation? *Energy Policy* 38(2), 1140-1149. https://doi.org/10.1016/j.enpol.2009.10.067.