

Australasian Journal of Environmental Management

Adaptive governance and climate change is a timely, cogent and to some degree provocative contribution to the growing literature on climate change policy solutions that argues the need to open the established climate change regime to additional approaches to science, policy and decision making, such as adaptive governance.

The book casts the challenge for national and international policy on climate change in the context of growing recognition of the scientific and political complexity and contested nature of climate change and the disappointing failure of policy initiatives to address effectively the dangers of climate change, particularly given the magnitude of the perceived task ahead. It acknowledges the broadening agreement that both adaptation and mitigation are required to address these perceived dangers and thus reduce losses of things society values. Finally, the authors refer to the policy 'attention frame' being monopolised by an agenda of scientific management that currently is focused on 'scientific assessments by the IPCC and others, the quest for mandatory legally binding targets and timetables to reduce greenhouse gas emissions under the UNFCCC, and defenses . . . against critiques by climate change skeptics' (p. 300). The authors argue this agenda relies on a global framing of the problem via models of the total earth systems and international cooperation as prerequisites for a global solution, to the neglect of opening up the agenda to alternative climate change policies concerned with helping advance 'the common interests of the world's many diverse communities' (p. 261).

The basic tenet of the book is the need for change in our way of thinking that recognises the progress made by local, community-based initiatives in addressing the realities of climate change through the implementation of policy alternatives lying largely outside the constraints of the scientific management agenda. In a way reminiscent of the adage 'think global, act local', the authors propose the solution lies in 'factoring the problem into thousands of local problems, each of which is more tractable scientifically and politically than the global one and somewhat different' (p. 6). This requires a shift away from a predominantly centralised, top-down policy approach framed in the tradition of scientific management, towards one complementing such initiatives with informed alternatives that embody a reframing of climate science, policy and decision-making in the context of adaptive governance. The book describes adaptive governance as 'an emerging pattern of science, policy and decision-making, and so far a missed opportunity for reducing net losses from climate change on larger scales at all levels in the international system, from local to global' (p. ix). This entails a largely bottom-up approach focused on advancing the common interests on contested issues at the local or regional level.

Recognising scientific management and adaptive governance as 'different but not mutually exclusive approaches to simplifying the complex realities of climate change for purposes of understanding and action' (p. 103), the authors argue that initiatives based on the established scientific management frame for the most part have restricted the policy focus to only part of the relevant picture. In contrast, adaptive governance provides 'a means of directing attention to otherwise neglected parts that can help reduce our vulnerability to climate change' (p. 6). The book provides detailed cases of adaptive governance emerging at the local level almost spontaneously 'as a loosely coordinated array of pragmatic responses to manifest failures in scientific management' (p. 5).

This well structured and informative book develops its thesis in five chapters. Chapter 1, 'Clarifying the problem', selectively maps the history of major climate change initiatives framed in traditional scientific management. It develops an idealised framework that characterises 'scientific management' as centralised decision making, technical rationality and extensive science and, in contrast, 'adaptive management' as decentralised decision making, procedural rationality and intensive science. It posits an adaptive approach which provides 'an opportunity for field-testing in parallel and in series thousands of alternatives for adapting to those climate changes we cannot avoid and for mitigating those we can' (p. 29).

Chapter 2, 'The regime evolves', documents the evolution of the established scientific management agenda on climate change and exceptions to it that point towards adaptive governance, which has emerged largely spontaneously and independently of these established agendas. In Chapter 3, 'Barrow was microcosm', the authors provide a fascinating, detailed historical account of the experience of the high latitude Barrow community in north Alaska, where climate change is recognised as not an issue but a reality. Arguing this experience is a microcosm of things to come as signs of climate change become more obvious at lower latitudes, the authors show how adaptive governance fostered the necessary diversity and innovation within the Barrow community for climate change adaptation to emerge.

Chapter 4, 'Opening the regime', draws on historical case material from Barrow and other places (including Australia) and relevant theoretical material to develop a substantive case for an alternative frame of action on climate change. Arguing that opening up the frame does not mean replacing it, Chapter 5, 'Reframing the context', then places adaptive governance 'as matters of collective action in the larger context of a transition from the relevant past to possible futures' (p. 262). It analyses the policies developed in Barrow and other places and proposes that they could be adopted by other communities to address emerging climate change issues. The authors also identify the critical need for incorporating appraisals of community-based initiatives in terms of policy outcomes and processes 'that are sensitive to problems likely to arise in a culture of scientific management' (p. 270), such as tendencies towards centralised planning, premature programme expansion or subordinate collective problem solving. They also re-emphasise 'the basic choice is not between scientific management or adaptive governance; as the saying goes, we can walk and chew gum at the same time' (p. 315).

Although adaptation is now more widely accepted than in the past, it is a relatively neglected area that is constrained by the culture of scientific management. The book concludes that adaptive governance is a change in our way of thinking that can significantly advance understanding and action on climate change for specific contexts. If the book has a shortcoming, it is that it does not venture further and draw on the lessons learned from the cases presented to make recommendations on adaptation strategies for mitigating specific impacts in particular climate change contexts.

Surprisingly, there have been few contributions to the climate change policy debate that provide comprehensive documentation and analysis of historical cases of community experiences in adaptive governance in response to the realities of climate change. This book seeks to fill this void and in so doing it provides a worthwhile read, particularly 'for those scientists, environmentalists, administrators, policy makers, and other citizens of the world who are sufficiently dissatisfied with disappointing outcomes to

date, or sufficiently concerned about the magnitude of the task ahead, to consider changes in business as usual' (p. 6).

--Jenny Bellamy, The University of, Queensland, # 2011, Jenny Bellamy