

Civic Epistemologies

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Overview

This chapter discusses the concept of ‘civic epistemology’ in relation to the Intergovernmental Panel on Climate Change (IPCC) and the governance of climate change. Civic epistemology refers to ‘the institutionalised practices by which members of a given society test and deploy knowledge claims used as a basis for making collective choices’ (Jasanoff, 2005: 255). Differences in civic epistemologies seem to be directly related to how scientific climate knowledge, presented in IPCC assessment reports, relates to political decision-making at different scales – national, regional, global. The concept is especially rich because it enables a nuanced understanding of the role of IPCC assessments in national climate governance and in meeting the challenges of building more cosmopolitan climate expertise. Both of these aspects are important if emerging institutional arrangements that seek to govern global environmental change are to be understood. Through a critical review of the civic epistemology literature related to the IPCC, this chapter investigates how the cultural dimensions of the science–policy nexus, in different national and geopolitical contexts, conditions the legitimisation and uptake of IPCC knowledge.

23.1 Introduction

Environmental governance regimes are enacted and legitimised by states and epistemic networks. The role of science in such regimes has been the subject of much debate, and many have considered knowledge consensus-building to be a crucial factor in shaping policy (Haas, 1992). However, the history of the IPCC shows that the influence of climate change knowledge is not restricted to a linear idea of agreed-upon science directing policy (see **Chapter 22**). For example, scientific consensus often appears less relevant for policy than the persuasive

powers of those speaking *for* science (Jasanoff, 2011). Understanding the science–policy interface therefore requires explaining how scientific claims gain policy-relevance in specific, sometimes divergent, ways across different countries (Agrawala, 1998a; Hulme & Mahony, 2010). At the national level, scientific consensus becomes one factor among many in the public deliberation of how to govern climate change or how to incorporate scientific claims into national or local policies (Hulme, 2009).

The IPCC has attempted with relative success to provide a common and reliable scientific knowledge base for international climate dialogues, but its credibility in the eyes of citizens and policymakers varies significantly from country to country. The multiplicity of modes of validation of the legitimacy of knowledge and the different forms of interaction between science and politics (Beck, 2012) challenges the supposedly abstract universality of climate science – represented as the ‘view from nowhere’ (Borie et al., 2021) institutionally maintained by the IPCC. This poses several problems for understanding the IPCC’s role in global politics. Several authors have called for the building of a more ‘cosmopolitan climate expertise’ as a way to navigate these challenges (Hulme, 2010; Beck, 2012; Raman & Pearce, 2020). Cosmopolitan knowledge has been defined as expertise which is comfortable with multiplicity and ambiguity, yet amenable to integration in a critical debate and a ‘reasoning together’ about a broader public good (Raman & Pearce, 2020: 3).

This chapter explores this challenge by using the concept of ‘civic epistemologies’ (Jasanoff, 2011), an idea which alludes to the historical, social and political dimensions of the different publicly accepted and institutionally sanctioned ways of performing trust and validating knowledge. We will explore the case of Global South nations – Brazil and India – to show how the reception and appropriation of knowledge organised by the IPCC occurs in contexts of scant public participation in the assessment and deliberation of science. We reiterate that the idea of civic epistemologies moves beyond the linear model of science for policy. We emphasise how this idea helps to understand the politics of climate knowledge not just in the Global North – for which there are many examples in the literature on the IPCC – but also in the Global South, even though there are fewer published examples available.

23.2 Civic Epistemologies and Climate Change

The concept of civic epistemologies emerged in science and technology studies (STS) and refers to ‘the institutionalised practices by which members of a given society test and deploy knowledge claims used as a basis for making collective choices’ (Jasanoff, 2005: 255). These practices include the following:

institutionalised or explicit norms, protocols and systematic ways of producing and testing knowledge; tacit and implicit forms of deliberating; cultural predispositions and value judgements; and historical traditions that impinge upon the ways knowledge helps order social and institutional life. These epistemologies include 'the styles of reasoning, modes of argumentation, standards of evidence, and norms of expertise that characterise public deliberation and political institutions' (Miller, 2008: 1896). They make it possible to analyse and understand the myriad ways publics and states arrive at agreements collectively regarding how knowledge can become a foundation for public decisions.

To illustrate how the idea of civic epistemologies can be applied to climate change, Jasanoff (2011) compared three cases: the United States, Britain, and Germany. These nations share many cultural, technological and political characteristics, but have fundamentally divergent understandings of how climate science relates to climate policy. In the United States, a country 'founded on common law's adversary system' (Jasanoff, 2011: 135), information is usually generated by parties with vested interests in the issues at hand and tested in public through overt confrontation, for example in courts. In opposition to the United States, 'the British approach has historically been more consensual. Underlying Britain's construction of public reason is a long-standing commitment to empirical observation and common-sense proofs' (Jasanoff, 2011: 136). The trustworthiness of the individual expert is the focus of concern in Britain. In Germany, by contrast, it is believed that 'building communally crafted expert rationales, capable of supporting a policy consensus, offers protection against a psychologically and politically debilitating risk consciousness . . . The capacity to form inclusive consensus positions functions as a *sine qua non* of stability and closure in German policy making' (Jasanoff, 2011: 138, 140). Through this comparison, Jasanoff shows how practices of public reasoning and validation of knowledge are culturally situated. These examples demonstrate that scientific consensus does not move policy in the same directions in different countries; simple applications of the linear concept of the science-policy relationship are therefore questionable.

23.3 Brazil and India: Epistemic Sovereignty and Political Culture

One factor related to civic epistemologies that Jasanoff (2011) did not explore concerns the geopolitical influences on the acceptance of the IPCC reports by different countries. Developed nations produce climate science that is well-represented in the IPCC's scientific assessments. This is not the case with Global South countries, where issues related to a lack of 'epistemic sovereignty' over climate

change knowledge (Mahony & Hulme, 2018) might be far more important for influencing national policy than the existence of a ‘global consensus’.

Being represented in IPCC assessments through patterns of authorship (see **Chapter 7**) can begin to explain differential national uptake and trust in the assessments produced. Studies show that the United States, Britain, and Germany are the highest contributors to the IPCC in terms of the number of authors (El-Hinnawi, 2011). For nations like India and Brazil – albeit less present in terms of IPCC authorship – having large populations and extensive territory makes them central players in any global effort to curb climate change. One of the common characteristics of the civic epistemologies of these latter countries is that lower participation in the IPCC’s assessments – alongside other political and economic variables – may be associated with a reduced level of trust in the associated scientific conclusions and weaker engagement with the political agendas that emerge from them.

After the Fourth Assessment Report (2007) (AR4), climate change became an increasingly charged political issue in India and Brazil in different ways and with divergent consequences in terms of political action in these countries. A series of errors were discovered in the AR4 report, including one claim that Himalayan glaciers might completely disappear by 2035. This statement was challenged by the Government of India in the review process. Still, it remained in the final report and, three years later, circulated publicly in international media as a warning to the subcontinent about the perils of climate change and the need – for India as much as for the rest of the world – to act. The claim even appeared in a speech by John Kerry, then the US Senate Foreign Relations Committee chair, who argued that unchecked climate warming could reignite geopolitical tensions between India and Pakistan. The Indian Government responded by commissioning local glaciologists to conduct their own assessments of the prospects of Himalayan glaciers and by setting up what some dubbed an ‘Indian IPCC’ – the Indian Network for Climate Change Assessment (Mahony, 2014b). This example suggests that the absence of locally accepted knowledge on glaciers – or the presence of claims produced by an international assessment with little participation of Indian scientists and with potentially disruptive political consequences – drove the Indian state to produce counter-assessments to the IPCC. This relates both to the specificities of Indian civic epistemologies and to India’s specific political history under British colonisation.

In the case of Brazil, dissatisfaction with what some dubbed ‘Northern’ framings of climate change – most notably concerning deforestation and the role of the Amazon in the carbon cycle – caused controversy about the validity of scientific claims for directing national policy. Northern climate models used

parameters that were considered inadequate by local scientists for simulating the effects of tropical forests on the carbon cycle. Among elected officials, the historical view that the Amazon region should be integrated into the national economy through economic exploitation was pervasive throughout the twentieth century. In that context, Brazilian Government officials felt that scientific assessments, such as those of the IPCC, directed deliberations over mitigation strategies towards the interests of global North countries (Lahsen, 2009; 2016). The Amazon historically occupies a sensitive spot in Brazil's environmental policy, and fears over foreign interference have long roots (Monteiro et al., 2014). Like elsewhere, local histories and cultures therefore condition how deliberation over technical expertise is applicable to environmental policy, specifically expertise produced outside the country in question. Brazilian civic epistemologies, like those in India, are related to longstanding concerns over sovereignty, albeit for different reasons.

The question of scientific credibility in the Brazilian case was not just about whether models and observations assessed by the IPCC were right or wrong. It was about fundamental inequities in national capacities to produce and frame knowledge (Miguel et al., 2019). For the historically dominant Brazilian civic epistemology, local scientists working in national scientific infrastructures are seen as more trustworthy and credible than those from the global North, especially in politically sensitive issues like Amazon deforestation. The creation of a Brazilian Panel on Climate Change (BMPC) to produce systematic reviews of the scientific literature clearly reflects concerns of scientists and decision-makers about epistemic sovereignty (Duarte, 2019). This is in direct relation to Brazil's role in international negotiations on greenhouse gas emissions and securitisation extended to territorial control.

One important shared idea of civic epistemologies emerging from Global North countries discussed by Jasanoff (2011b) is that governmental decisions pertaining to climate change should be deemed acceptable by the public and directed by scientific principles. It can also be noted that these nations have well-established and well-funded scientific infrastructures, well-educated publics, and pathways of public deliberation about science. However, these political cultures and infrastructural conditions are radically different in the Global South. Issues of sovereignty, for countries like Brazil and India, play a role in different ways than in other places when technical decision-making is concerned; these issues become important elements of both scientific and political discussions related to climate change.

Civic epistemologies in Latin America for example – as part of broader political cultures – tend to be marked by top-down, non-participatory approaches to

decision-making, which relate to the historical role of military dictatorships in the region. In addition, scientific systems and infrastructures were built across the continent in waves of centrally induced rapid modernisation; these mixed technocracy and the radical depreciation of local, popular forms of understanding reality. Such hierarchical patterns of deliberation are a legacy of authoritarianism and often persist intermingled with democratic processes. These structural elements weaken the inclusion of civil society in the assessment of government and expertise, and limit public participation in the decision-making processes related to climate governance. Lahsen (2009: 360), for example, argues that science and decision-making on matters of environmental risk in Brazil reflect a general attitude that assumes that ‘high-ranked decision-makers can be trusted to define national policy single-handedly, and that they better serve the common good than the processes of democratic politics’. In Brazil, a ‘technocratic civic epistemology’ keeps decision-making centralised in the hands of experts located in government bodies, which constantly alienates civil society from technically based political decisions.

In the Indian case, the emergence of civil society organisations after India’s independence – with objectives ranging from popularisation to the democratisation of science and related policy making – pressed against the Indian government’s resistance to public debate around scientific questions. The country also adopted a technocratic model of governance, directed at furthering the geopolitical interests of the state. At the same time, the memory of British colonialism in the country built a political culture focused on the search for sovereignty and the need to place political and scientific processes under the central control of the government (Agarwal et al., 1982; Mahony, 2014b).

Comparing the Indian and Brazilian cases with the UK, United States, and Germany, two factors emerge as distinct in their respective civic epistemologies. First, for nations of the Global North the issue of the authorship of scientific works assessed by the IPCC is not seen as a problem of legitimacy. In contrast, in many nations of the Global South, epistemic sovereignty is an important factor in the legitimacy of science in politics. Second, while the Global North frames climate science as an object of public scrutiny, Global South countries tend to frame climate science as a ‘science for the administration of the state’ and thus as part of the geopolitical process. These examples illustrate the different ‘epistemic geographies of climate change’ (Mahony & Hulme, 2018) and the importance, for users and observers of the IPCC, of knowing about different civic epistemologies. Box 23.1 offers another case – that of Russia – which helps to illustrate the diversity of climate change civic epistemologies in non-Western nations.

Box 23.1

Russia: the ‘policy-follower’ civic epistemology

Elena Rowe (2012) discusses how internationally produced expert knowledge claims are taken up domestically in climate policy-making and debates in Russia. This provides an example of the national reception of international expert knowledge such as offered by the IPCC and ‘the role of experts in a quasi-democratic State’ (Rowe, 2012: 712). Rowe’s argument is that Russia’s successful engagement in international climate policy is likely to be based on appeals to the country’s political and economic interests and power aspirations, rather than on scientific knowledge that involves Russian authors or scientific institutions (Rowe, 2012). According to Rowe, Russian IPCC participants ‘did not seem to play a role in deliberative processes leading to key decision-making moments’ (Rowe, 2012: 713). However, ‘these experts were certainly called to legitimise decisions taken for other political and economic reasons’ and also to provide ‘input and guidance’ to Russian policy-makers in ‘navigating’ international forums and deliberative processes (Rowe, 2012: 713). The international scientific consensus is thus received in Russia as part of a ‘political package deal’ (Rowe, 2012: 723). Rowe concludes: ‘in a climate-politics “follower” State like Russia, the intervention of Russian experts was not needed to ensure that international science would diffuse into Russian policy circles’ (Rowe, 2012: 723).

23.4 Achievements and Challenges

In this chapter, we have shown the rich potential of the concept of civic epistemology to make sense of difficulties in enacting global climate governance through the IPCC. We have illustrated the need for further comparative research into how global environmental assessments result in robust policy impact across different countries, notably in non-Western ones. From our discussions about different civic epistemologies of climate change, a central question arises: Can the IPCC stimulate a more effective scientific and political arena for climate governance in the face of such globally diverse civic epistemologies?

Authors have suggested that the IPCC could prioritise a more cosmopolitan climate expertise (Raman & Pearce, 2020). The promise of cosmopolitan knowledge is to recognise the diversity and ambiguity of forms of knowledge-making and knowledge appropriation as a strength rather than a weakness for engaging with climate change. However, matters of epistemic sovereignty pose a more profound question related to inequality in the production of global climate science. How can the IPCC deal with the claim that climate science produced in developed countries does not fully represent underdeveloped nations in global climate governance? Global governance means dealing with global inequalities on

several levels, two of the more important ones being unequal means of producing knowledge, and unequal access to economic and scientific resources that are essential to adaptation and mitigation of climate change. These inequalities condition how countries enter global climate debates and engage with policy development. They also influence the variety of civic epistemologies that condition how international scientific assessments, such as the IPCC, and global governance structures are accepted, deemed legitimate, and incorporated into national and local governance.

Three Key Readings

Miller, C. A. (2008). Civic epistemologies: constituting knowledge and order in political communities. *Sociology Compass*, 2: 1896–1919. <http://doi.org/10.1111/j.1751-9020.2008.00175.x>

This article reviews the concept of civic epistemology, exploring its intellectual origins and its heuristic potential for political and social analysis, including current issues like globalisation and sustainability.

Jasanoff, S. (2011). Cosmopolitan knowledge: climate science and global civic epistemology. In: Dryzek, J., Norgaard, R. B. and Schlosberg, D. (eds.), *Oxford Handbook of Climate Change and Society*. Oxford: Oxford University Press. pp. 129–143. <http://doi.org/10.1093/oxfordhb/9780199566600.001.0001>

This book chapter discusses the need for culturally situated understandings of science and its place in climate governance, incorporating distinct civic epistemologies and suggesting institutional changes to build cosmopolitan knowledge for climate action.

Beck, S. (2012). The challenges of building cosmopolitan climate expertise: the case of Germany. *Wiley Interdisciplinary Reviews: Climate Change*, 3(1): 1–17. <http://doi.org/10.1002/wcc.151>

This article advances the discussion on the situated ways in which countries incorporate supposedly universal scientific expertise in relation to climate change, focusing on the case of Germany. It also offers a discussion on the concept of a more cosmopolitan climate knowledge using the example of the Climategate controversy.