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Eva Lövbrand

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Eva Lövbrand

Abstract

This paper examines the close links between knowledge making authority and decision making authority in the multilateral negotiations on terrestrial sinks of greenhouse gases. Drawing upon social constructivist science studies and public sphere theories in international relations, the paper traces the communicative contexts in which state actors have struggled to bring meaning to the sink concept and hereby translated the production and validation of knowledge claims into political authority. In particular focus are instances of “epistemic chaos” when the lack of consensual knowledge and shared normative commitments has forced states to publicly interpret and justify what counts as credible carbon cycle expertise and good terrestrial carbon management. The empirical tracing of such justificatory arguments begins at the third conference of the parties (COP3) to the United Nations Framework Convention on Climate Change in Kyoto in 1997, and ends at COP 10 in Buenos Aires in 2004. Although scientific expertise emerges a central avenue for political bargaining in this negotiation process, the paper does not interpret expert politics as a mere reflection of material power and dominant state interests. Rather, when approaching authoritative knowledge as a product of social relations, the course and outcome of global climate governance appear more inclusive and open-ended.

Introduction

Is there a tension between democratic governance and professional expertise? In recent years a growing literature has suggested so and thus called for increased citizen participation in science driven policy-making processes. In an age when expert knowledge is “tightly woven into the very fabric of our existence” (Fischer, 1990, p. 13), science and technology scholars talk about the need to open up scientific expertise to public scrutiny and other ways of knowing (Irwin, 1995; Nowotny et al., 2001; Fischer, 2005; Leach et al., 2007). In order to counter elite governance that advocates specialised expertise as the dominant way of organising political power (Fischer, 1990), citizens should, it is argued, be invited to challenge decisions that affect their lives and

thus be engaged in the basic social choices embedded in scientific and technological discourse and development.

In this paper I bring this scholarly debate to the global level and the multilateral climate negotiations. A central starting point for my study is the recognition that global governance is remote from citizens and domestic ideals of democratic politics. As pointed out by Rosenau (1998), globalised space lacks the constituencies, scope and support necessary for exercising democratic accountability and responsibility. Although citizens are connected to global governance arrangements via national parliaments and governments, the links are in practice very weak. The relationship between national governments and global governance agencies mainly flows through unelected officials who lack any direct connection with voters (Scholte, 2005, p. 88). This paper explores how this “democratic deficit” in world affairs plays out in an expert-driven arena such as climate change. In focus are the close links between expert authority and political authority in the controversy over terrestrial sinks of greenhouse gases. The sink concept was introduced early in the multilateral climate negotiations, and is in the United Nations Framework Convention on Climate Change (UNFCCC) broadly defined as “any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere” (UN, 1992, Article 1.8). Since the Kyoto meeting in 1997 the interpretation of the sink concept has, however, been limited to greenhouse gas removals by land use change and forestry activities (LULUCF), and specified to afforestation, reforestation, deforestation, revegetation, forest management, cropland management and grazing land management (UNFCCC, 1997a, Article 3.3; UNFCCC, 2001).

The determination of these LULUCF activities has been one of the most controversial undertakings in the Kyoto negotiations. It is also one of the most complex and expert driven, characterised by what Fischer (1990) has called “the politics of expertise”. Drawing upon a long-standing critique of technocracy and instrumental modes of rationality, Fischer (1990, p. 28) defines expert politics as the selective use of expert knowledge by political elites to gain support for their pre-defined policy agendas. From this macro-political vantage point, expertise emerges a key resource in the governance of modern society that limits critique of political arrangements to those with access to technical knowledge. In this paper I employ Fischer’s concept to trace how

expert arguments have played into states' bargaining strategies in the Kyoto negotiations on LULUCF. However, in order to move beyond a static reading of the international order in which the exercise of power and authority takes place, the paper advances a more open-ended interpretation of the communicative spaces created in the making of international sink policy. Noting that the politics of expertise also refers to the influence of experts over the deliberative frameworks within which actors' preferences and policy agendas are interpreted and justified (Fischer, 1990, p. 29), I use the concept to examine the micro-political contexts of meaning-making in which state and non-state actors have translated the production and validation of knowledge claims into political authority in the Kyoto process (Miller, 2007, p. 327). Hence, while the paper traces the analytical heritage of Fischer's politics of expertise back to the early Frankfurt School and its profound critique of technological rationality, it also draws upon social constructivist science studies and public sphere theory in international relations (IR) to move beyond the deterministic legacy of the concept.

In the first section I contrast technological modes of rationality with deliberative ideals of reason-giving that, in the words of Miller (2007, p. 343); "expand the range of voices that participate in the construction and deliberation of epistemic frameworks designed to underpin global policymaking." Whereas global politics informed by technological rationality reduces the exchange of knowledge claims into a strategic bargaining among powerful and self-interested actors, shaped by the positions they occupy in the international order, the deliberative ideal builds upon an open-ended arguing process that, according to Risse (2000; 2004), gives state and non-state actors equal opportunity to justify and challenge the legitimacy of the objectives, rules and meanings that inform global climate governance. A constructivist reading of this communicative process draws attention to the microfields of reason-giving in which shared understandings of what counts as authoritative knowledge and rightful moral claims are articulated, represented and defended (Jasanoff, 2005, p. 249). Rather than approaching social objectives and meanings as fixed, constructivists imagine the social as a constitutive domain in which actors make sense of the social reality and (re-)interpret their own interests and identities. Hence, what counts as authoritative knowledge is not merely understood as an effect of resourceful actors' power *over* communication (i.e. who is allowed to speak), but also a reflection of social relations and the power *in* communication (i.e. what counts as salient speech) (Pellizoni, 2001, p. 61).

Balancing between this macro- and micro-political reading of expert politics, the second section of the paper traces the Kyoto negotiations on LULUCF. In particular focus are phases of “epistemic chaos” (Adler & Bernstein, 2005, p. 303) when the lack of consensual knowledge and shared normative commitments has forced states to publicly interpret and justify what counts as authoritative carbon cycle expertise and good terrestrial carbon management. My empirical tracing of such justificatory arguments begins in the months prior to the third conference of the parties (COP 3) in Kyoto in 1997 when state actors struggled to bring meaning to the sink concept and to establish its role in the Kyoto Protocol. As a second step I follow the negotiations into the expert domain of the Subsidiary Body of Scientific and Technological Advice (SBSTA), and examine how the politics of expertise played out through the justification of appropriate definitions and accounting methods for the LULUCF sector. My empirical analysis ends in the less contested period after the Bonn compromise in July 2001, when the truth status of most expert arguments was agreed upon and institutionalised through the Marrakesh Accords and the Good Practice Guidance for LULUCF. The empirical reading of these communicative phases is primarily based on country submissions to the UNFCCC secretariat as well as daily reports from COP and SBSTA meetings provided by the two non-governmental organisations (NGOs) the International Institute for Sustainable Development (IISD) and the Climate Action Network (CAN). Whereas the IISD’s Earth Negotiations Bulletin (ENB) offers a more or less direct inroad to the technical discourse of the interstate negotiations, the CAN takes on the role as rule-interpreter and provides a more critical account of the LULUCF negotiations in its ECO-reports.

In the concluding section I reflect upon the modes of communication employed in the Kyoto negotiations on LULUCF and ask what they tell us about the politics of expertise in global climate governance. On the one hand my empirical findings point to a great deal of bargaining in the negotiation process. Following Fischer’s structural reading of expert politics, I note that resourceful Northern states have used their access to cutting-edge forestry and carbon cycle research to exercise power over the multilateral dialogue. On the other hand, the epistemic chaos created by the lack of consensual scientific knowledge and shared interpretations of good terrestrial carbon management challenges the notion that hegemonic actors have managed to dominate the communicative spaces created throughout the Kyoto negotiations on LULUCF.

Rather, the political struggle to assign meaning to the ambiguous sink concept, and to validate the truth status and moral rightness of the various arguments at play, indicates that what counts as rational and good terrestrial carbon management has been constituted in close relation to the making and validation of authoritative knowledge. Hence, I conclude that the politics of carbon cycle expertise cannot be reduced to a mere give-and-take by the materially resourceful. When interpreting the multilateral dialogue as a social process of justification and meaning-making, the course and outcome of global climate governance appear more inclusive and open-ended.

From technological to communicative rationality

In the wake of World War II, scholars such as Max Horkheimer, Theodor W. Adorno and Herbert Marcuse developed a philosophical and social critique of the use of reason and rationality in modern industrial society. Fundamental to their critical social theory was the belief that ideas, norms and standards, formally accepted as purely rational, may come to serve particular interests and thus undermine the authority or their presumed rationality (McCarthy, 1994, p. 20). The political use of science and technology in modern society was a central target of this critique. While techno-scientific achievements have enabled higher standards of living and a comfortable life for a large part of the population in Western societies, the Frankfurt scholars argued that individuals pay the price through a loss of autonomy and critical thought. From Marcuse's critical vantage point, advanced industrial society fosters a technological rationality that identifies things according to their function and turns man and nature into objects of rational control and calculation (Marcuse, 2002). In this one-dimensional technical world, scientific reason is effectively used by political elites to establish prevailing norms and practices as facts and thus repress opposing values, aspirations and modes of thought. By erasing all opposition and dissent in society, Marcuse claimed (2002, p. 14) that modern society has turned emancipating concepts such as reason and rationality into instruments of conformity and domination.

Whereas the early Frankfurt scholars lost their faith that reason could help to liberate humanity in face of European fascism, Soviet communism and the rise of capitalist mass society, they paved the way for a second generation of critical theorists who have aimed to restore the beneficent power of reason (Seidman, 1998, p. 186). Following the work of Jürgen Habermas, this eclectic mix of theoretical perspectives shares a common commitment to critical consciousness and

human emancipation. By questioning and exposing the values and power relations within existing social arrangements and institutions, they both seek to analyse the causes of, and prescribe solutions for, domination and injustice (el-Ojeili & Hayden, 2006, p. 10). Contemporary calls for more democratic modes of expertise in the science and technology studies (STS) literature resonate with this academic project. In line with the Frankfurt scholars' profound distrust in technological rationality, STS writings on expert democratisation rest upon a general critique of the scientisation of modern social life and politics. Too often, it is argued, the social and ethical dimensions of policy problems are framed in scientific and technical terms, turning politics into a struggle between those who have access to authoritative expertise and those who have not (Fischer, 2005, p. 23). However, instead of reifying the early Frankfurt scholars' technopessimism and deterministic reading of expert politics, the contemporary STS scholarship nurtures an optimistic vision of citizens' ability to repoliticise policy discourse.

The commitment to more democratic forms of expertise draws upon social constructivist interpretations of categories such as "science" and "expertise" as negotiated and contingent social kinds. As argued by Jasanoff (2005, p. 19), the field of science and technology studies has for long concerned itself with the nature and power of the categories and objects by which we organise our knowledge about the world. Rather than taking these categories for granted, STS scholars have been attentive to the micro-political relations of power that give knowledge meaning and authority in social settings. By examining the fluid and provisional boundaries that separate good science from bad, expertise from non-expertise, this scholarship has not only sought to deconstruct the social practices that constitute "certified knowledge" (cf. Gieryn, 1995). By asking who counts as an expert and whose knowledge is deemed relevant in different political settings (Jasanoff & Martello, 2004, p. 344), writings on expert democratisation also seek to open up a communicative space in which marginalised voices may reenter policy discourse. The emancipating message, grounded in Habermas' theory of communicative action, is that the critical reason of citizens can be mobilised against the technological reason of political elites, bureaucrats and technocrats. By fostering a public sphere where political representatives are asked to give reasons for their decisions, citizens may challenge (so it goes) the implicit social meanings and value preferences that otherwise are imposed through seemingly rational and objective decision processes (Wynne, 2007, p. 81). Through an ongoing critical testing of

normative claims, including those in scientific statements, the public sphere is thought to open up hidden assumptions and hierarchies in policy discourse and thus help less privileged citizens in their struggles to better understand and examine the social choices that affect their lives (Fischer, 2005, p. 145).

Whereas the contemporary STS literature primarily locates such public engagement in technoscientific discourse within the nation state and the national citizenry, public sphere theories in international relations (IR) have extended the emancipatory potential of Habermas' communicative ideal beyond national communities or territories. In the absence of a self-governing community or demos in international politics, critical IR theorists talk about transnational public spheres as the realm of unconstrained communication beyond national borders (Dryzek, 2002; Bohman, 2007). Some have envisioned international regimes as sites of dialogue where transnational public spheres can be institutionalised (Samhat & Payne, 2003). Although interstate communication often is severely distorted by states' unequal bargaining power, the flexing of muscle by powerful states, cultural differences, or the incomplete time for deliberation (Eckersley, 2004, p. 41), public sphere theorists do not interpret all multilateral diplomacy as "cheap talk". According to Risse (2004, p. 299) there are many instances in multilateral negotiations when strategically motivated and dominant actors need to engage in serious dialogue and reason-giving with their counterparts in order to influence the course and outcome of the negotiations. When justifying why they prefer certain courses of action or why their interests are valid, states use arguments based on independent sources of knowledge, evidence and proof rather than demands, threats or promises (Risse, 2004).

When interpreting expertise as an unevenly distributed resource that reproduces the privileges of structure, we may expect resourceful states to dominate such exchange of arguments. By employing knowledge and evidence strategically, hegemonic actors may restrict weaker actors' access to the communicative process or impose epistemic limits on legitimate modes of reason giving. However, in situations when the truth status of expert arguments are contested or no widely accepted norms exist, Risse (2000) suggests that the logic of arguing changes the communicative dynamics and increases the likelihood for materially less privileged actors to challenge the epistemic framework underpinning the multilateral dialogue. The introduction of

new voices may not only bring about alternative understandings of what legitimate knowledge means and thus intensify the micro-political struggle to classify, map and make sense of global problems (Miller, 2007, p. 330). Public sphere theorists also hope that the presence of non-state actors in such deliberations may increase the pressure on states to justify their action to global publics and thus foster more accountable forms of global governance (Eckersley, 2007). Nanz and Steffek (2004) talk about civil society networks as an important discursive interface between formal rule-making bodies and the publics affected by the rules. Ideally, civic observers “channel down” the consequences of interstate negotiations to domestic constituencies, and “channel up” public problem-framings and viewpoints to the multilateral setting (Eckersley, 2007, p. 335). By giving those affected by international decision-making a voice in multilateral arenas, civil society organisations are thought to bridge the gap between citizens and global policy elites and thus challenge technocratic forms of global governance (Nanz & Steffek, 2004).

However, even if we approach the making and validation of expert authority as a vantage point for broader participation in global governance, the presence of civic actors is no guarantee for increased democratic accountability. In order to realise their potential, Scholte (2005) argues that civic groups need resources to speak credibly in global settings, good relationships with ruling authorities in order to gain access to regulatory arenas, a culture of citizenship to attract members, and accountability mechanisms through which they themselves can answer to stakeholders for their actions and omissions. Beyond these institutional challenges, political theorists have also pointed at the need to cultivate a sense of moral responsibility and justice across North-South lines in order to foster an open and dialogue among transnational publics that includes the voices of the marginalised, excluded and dispossessed (Dobson, 2003, p. 23). In view of these challenges, the normative project to foster more democratic forms of expertise in global arenas may appear as a far away ideal with limited value. However, apart from providing a normative standard against which global practice can be evaluated, I argue that this scholarly project also may open up a useful analytical space in the study of expert politics in global governance. By drawing attention to the contingent communicative contexts in which knowledge-making authority is constituted and justified, it introduces a micro-political dimension to the analysis of decision-making authority. In the following section of the paper I make use of this analytical space as I trace the Kyoto negotiations on land use change and forestry.

Making sense of the sink concept

Global climate governance is a site where issues of morality are played out. Questions such as who is responsible for the elevated concentrations of greenhouse gases in the atmosphere, who will bear the burden of a changing climate, or what is a fair distribution of the costs for doing something about it, have all been central in the multilateral negotiation process. The controversy over sinks of greenhouse gases taps into all of these questions. Since 1995, when the negotiations on “strengthened commitments” began at the first conference of the parties (COP 1) to the UNFCCC in Berlin, state and non-state actors have sought to justify and challenge the use of sink as a morally acceptable strategy for greenhouse gas mitigation. Whereas the unequal material capabilities of states have given some actors more voice than others in this multilateral debate, the justification of moral claims has taken place in the context of great scientific uncertainty. Hence, as I seek to show in the following sections of this paper, efforts to establish the moral rightness to sequester atmospheric carbon in biomass and soils cannot be separated from the knowledge claims that make such activities imaginable, measurable and controllable.

The political struggle to bring meaning to the sink concept began in the months prior to COP 3 in Kyoto in 1997. At this point in time states were invited to submit their views on sinks to the Ad Hoc Group on the Berlin Mandate (AGBM). According to the official decision from COP 1 in Berlin, the AGBM was to arrive at quantified emission limitation and reduction objectives (QELROs) for anthropogenic greenhouse gases in time for the Kyoto meeting (UNFCCC 1995, decision 2a). Even though clear targets and timetables for emission reductions were the core of the AGBM process, the nature of the QELROs was a source of great disagreement. In line with the first principle in the convention, developing states expected rich states in the North to take a moral responsibility for the climate problem by accepting strict cuts in domestic emissions. In the first protocol proposal presented by the Alliance of Small Island States (AOSIS) in September 1994, this demand was translated to a 20 percent reduction of Northern CO₂ emissions by year 2005 (Obethür & Ott, 1999, p. 115). While the EU member states soon aligned themselves with the Southern calls for binding targets, the United States stressed the high social and economic costs of reducing domestic emissions (Grubb et al., 1999). Together with its allies in the

JUSCANNZ group (Japan, Switzerland, Canada, Australia, Norway and New Zealand), the US instead advocated voluntary, cost-effective and flexible means to manage the climate problem.

When AGBM 8 convened in late November in 1997, greenhouse gas removals by sinks emerged as a central component in this flexible approach. In time for this meeting thirteen states had submitted their interpretations of the sink concept to the ABGM (UNFCCC, 1997b). Nine of these reports were written by industrialised states (Australia, Canada, Iceland, UK/EU, Denmark, Japan, USA, New Zealand and Norway), two by the AOSIS (the Marshall Islands and Nauru), and another two by Group 77 members (Kenya and Peru). In the lengthy country submissions by the United States, Australia, New Zealand and Norway, an active enhancement of the natural uptake of atmospheric carbon in terrestrial ecosystems was presented as the most cost-effective response to the climate problem, and central for flexible action by large emitters. As argued by New Zealand, the adjustment to a less fossil fuel intensive future is expensive. Hence, “including sinks on an appropriate basis will mean that a more ambitious target emerges from Kyoto” (UNFCCC, 1997b, p. 36). The JUSCANNZ members used scientific arguments to justify a generous interpretation of such “appropriate basis”. The United States reminded its counterparts that the uptake of greenhouse gases in terrestrial ecosystems is a critical component of the global carbon cycle. It would therefore be “illogical not include both sources and sinks, in net, in the QELROs of Parties” (UNFCCC, 1997b, p. 51). Following a similar scientific rationale, Australia proposed that “all terrestrial land areas should be included to ensure a comprehensive coverage and assessment of all greenhouse gases, all emissions, sources and sinks” (UNFCCC, 1997b, p. 5).

Despite the powerful support for this “comprehensive approach” to national greenhouse gas accounting, the country submissions also gave voice to less materially resourceful actors. The most fundamental critique against a net accounting system (i.e. sources minus sinks) tapped into developing states’ moral claim that Northern states should take the first step to reduce domestic emissions. As argued by the Marshall Islands, “the inclusion of sinks in the QELRO would tend to delay early action to tackle emissions at source. It would in effect shift the burden of pollution control to a sector which is not the major contributing sector. This has major social and equity implications which need to be fully considered” (UNFCCC, 1997b, p. 20). If parties nevertheless decided to include sinks in a future treaty, Nauru, another vocal member of the AOSIS, suggested

that the many scientific uncertainties and methodological weaknesses associated with terrestrial carbon uptake would make it virtually impossible to draw a line between “legitimate sink enhancement and bogus efforts to avoid significant actions to benefit the climate” (UNFCCC, 1997b, p. 27). During the ensuing Kyoto meeting, China and Brazil tapped into this scientific critique and claimed that a comprehensive greenhouse gas accounting endangered the credibility of the proposed emission targets for industrialised states. Brazil argued that the large uptake of carbon in managed forests even would give Northern states a license to increase their emissions by 30 percent (IISD, 1997a).

Outside the official negotiation corridors, environmental NGOs also criticised the comprehensive approach for magically and effortlessly transforming emission increases into emission reductions (CAN, 1997a). In order to convince states that sinks represented a “disastrous loophole” that must be kept out of any agreement (CAN, 1997b), the Climate Action Network (CAN) pointed at the poor scientific monitoring of terrestrial carbon pools and the overriding risk that states would be tempted to replace biodiverse natural forests with fast-growing industrial tree-plantations. Despite these moral and scientific objections, sinks could not be kept off the negotiating agenda in Kyoto. When the JUSCANNZ group made an agreement on QELROs conditional to the flexibility offered by carbon offsets in terrestrial ecosystems, vocal members of the AOSIS, the G77 and the EU instead struggled to restrict the interpretation of eligible sinks in the Kyoto Protocol. These efforts resulted in Article 3.3 that limits removals by sinks to net changes in greenhouse gas emission generated by direct human induced “afforestation, reforestation and deforestation activities since 1990, measured as verifiable changes in carbon stocks” (UNFCCC, 1997a). A wider interpretation of sinks was left open for future negotiations through Article 3.4.

The politics of definitions and accounting methods

During the Kyoto meeting the full implications of a net accounting system was unknown to most parties. At the opening plenary, the chair Raúl Estrada Oyuela noted that the AGBM had failed to sort out methodologies to quantify removals by sinks and thus left their role in the “new instrument” most unclear (IISD, 1997b). The Kyoto agreement on Articles 3.3 and 3.4 did by no means settle the epistemic chaos that dominated this first phase of the sink negotiations. On the contrary, the complex treaty text bears witness of the lack of consensual knowledge and shared

normative beliefs in the interstate dialogue. As a consequence, the COP decided to continue the negotiations in the SBSTA. Miller (2001, p. 251) describes SBSTA as a key site where questions about the proper organisation of science advice are addressed and, occasionally, settled. Whereas the official mandate of this body is to provide the COP with “timely information and advice on scientific and technological matters relating to the Convention” (UN, 1992, Article 9), Miller (2001) notes that SBSTA deliberations are marked by a constant struggle to find generally accepted criteria and procedures for selecting experts and weighing evidence. Since this “boundary work” (Gieryn, 1995) is open to all parties to the convention as well as accredited non-state observers, the SBSTA represents a dynamic communicative arena for the sink controversy and the politics of carbon cycle expertise.

When the eighth session of the SBSTA opened in June 1998, the UNFCCC secretariat raised a number of pressing issues relating to Articles 3.3 and 3.4 that required urgent consideration by the negotiating parties. In order to turn the sink provisions operational, the secretariat called for common forest definitions, a specification of what counts as direct human induced activities, consistent methodologies to measure changes in carbon stocks, and a decision on which additional LULUCF activities that should be included in Article 3.4 and be made eligible under Joint Implementation and the Clean Development Mechanism (UNFCCC, 1998a). The SBSTA delegates responded to the secretariat’s call by inviting all signatory states to submit new information relating to the implementation of Article 3.3 (UNFCCC, 1998b). The SBSTA also requested the Intergovernmental Panel on Climate Change (IPCC) to prepare a special report on land use change and forestry that would set the overall scientific context for the ensuing negotiations (UNFCCC, 1998b). Due to the lack of a shared understanding of the sink concept, the political pressure on the report was high. Fogel (2005) has described the politics of expertise that played out inside the IPCC during the planning and writing of the special report on LULUCF. Although the IPCC chair Robert Watson sought to maximise the neutrality and scientific integrity of the process, Fogel notes (2005, p. 199) that government representatives monitored the content and tone of the report closely and frequently sought to shape its findings into those that they preferred.

In its lengthy submission to SBSTA in August 1998, the United States continued to advocate a “full and comprehensive treatment of all anthropogenic emissions and sinks of greenhouse gases under the Framework Convention and under the Kyoto Protocol” and therefore called upon the IPCC to use a full anthropogenic carbon stock accounting as its reference point (UNFCCC, 1998c, p. 53-54). During the government review of the report the US framed this call in terms of “sound science” and insisted that the IPCC authors “scrub the text” from any “unscientific” phrases that would weaken the case for a broad interpretation of sinks in Article 3.4 of the Kyoto Protocol (Fogel, 2005, p. 291). The EU, on the other hand, contested the soundness of this “default approach” to carbon accounting and instead asked the IPCC to consider a “reliable, consistent and accurate emission inventory for the land use change and forestry sector” as the way forward (UNFCCC, 1998c, p. 9). Whereas the EU view on sinks had been rather ambiguous prior to Kyoto, the member states now affirmed that sink activities should not undermine industrialised states’ responsibility to reduce greenhouse gas emission at source. Following a macro-political reading of expert politics, one would expect less resourceful actors to speak with less weight and credibility in this debate. And indeed, among the ten country submissions received by SBSTA in August 1998, only one report was produced by a G77 member (the Phillipines). Hence, when the IPCC special report on LULUCF finally was presented at SBSTA 12 in June 2000, the G77 immediately asked the SBSTA to organise additional workshops to help developing states to build capacity and offer their own take on the complex IPCC findings (IISD, 2000a).

However, the non-state observers present during the SBSTA deliberations were by no means silenced by the technical character of the many expert arguments. Members from the CAN followed the politics of definitions and accounting methods closely and fed their own interpretations of Articles 3.3 and 3.4 into the IPCC special report (CAN, 1998). The CAN also complained about the stifling effect the lack of country specific data on greenhouse gas removals, and pointed at the difficulty to assess the full effect of the various definition and accounting scenarios (CAN, 1999). At SBSTA 12, the UNFCCC secretariat gave fuel to this critique. In its compilation of updated country data on net greenhouse gas emissions from the LULUCF sector, the secretariat pointed at the great variation in reported emissions for 1990 (see Table 1). According to the secretariat’s report, this variation was a direct effect of accounting methods,

emission factors, land use definitions and the number of sources and sinks included in the estimates (UNFCCC, 2000a, p. 25).

Table 1 Net CO₂ emissions (Gg) from LULUCF in 1990 (modified from UNFCCC, 2000a)

Country	Data from first NC ^a	Data from year 2000	Percentage change	Total CO ₂ emissions in 1990 ^b (Gg)	Kyoto target ^c
Australia	130 843	69 436	-47	288 965	108
France	-32 168	-59 617	85	366 536	92
Japan	-90 000	-83 903	-7	1 173 360	94
New Zealand	-16 716	-20 888	25	25 530	100
Russia	-587 200	-392 000	-33	2 388 720	100
Spain	-4 178	-28 970	593	260 654	92
UK	-61 137	21 412	-449	584 078	92
USA	-436 000	-1 142 200	162	4 957 022	93

a) A negative value indicates removals and a positive one indicates emissions.

b) Data based on the first national communications submitted before 11 December 1997 (UNFCCC, 1997b)

c) Quantified emission limitation or reduction commitment. Percentage of 1990 emissions.

Whereas all states listed in Table 1, except Australia, reported net carbon removals from the land use sector in their first national communications, the recalculation in year 2000 increased the estimated sink for some states and decreased it, or even transformed it into a source, for others. When comparing the magnitude of changes in states' LULUCF estimates with their emission targets from Kyoto, it is possible to grasp the politics lurking in seemingly technical questions such as how to define a forest, which pools to include in the definition of a carbon stock, or how to distinguish between natural and human-induced sequestration. As clarified by the CAN (2000a), a skilled use of definitions and accounting methods allows states to water down their targets and claim credits for doing nothing. However, the complexity of the SBSTA deliberations challenges the idea that states were able to use the epistemic chaos in this phase of the negotiations as an instrumental means of control and power. Although the knowledge gap between North and South appears to have given Northern voices more room in the interstate dialogue, the range of expert arguments exchanged by state and non-state actors was by no means

obvious to interpret or make sense of even for the materially resourceful. As a consequence, SBSTA 12 decided to once more ask the signatory states to submit information on sinks.

The technical frenzy of The Hague failure

In the months that followed SBSTA 12 in June 2000, it was clear that the IPCC special report on LULUCF had not brought an end to the epistemic chaos generated by the sink concept. Although time was short to reach an agreement on Articles 3.3 and 3.4 in time for the planned COP 6 in The Hague in November the same year, the negotiations were still swamped by competing technical arguments for and against certain definitions, accounting methodologies and additional LULUCF activities. At SBSTA 13 in August 2000, the chairman presented a consolidated synthesis of the proposals submitted by states earlier the same month (UNFCCC, 2000b). Whereas the synthesis text contained detailed proposals on forest definitions, additional activities to include in Article 3.4, and appropriate accounting rules, it reflected a continued disagreement over the truth status and moral rightness of the various expert arguments.

The JUSCANNZ group continued its quest for maximised response flexibility, by proposing either no requirements for the definition of a forest or the use of country-specific definitions (UNFCCC, 2000b). In order to include as much land as possible under Article 3.3, Canada suggested very flexible definitions of afforestation and reforestation.¹ To move closer to the original comprehensive approach, the United States in turn called for a broad inclusion of additional LULUCF activities in Article 3.4 and the use of “a single consistent system for full greenhouse gas accounting on all managed lands”. Through a comprehensive accounting system the US hoped to avoid the requirement in Article 3.3 to separate, or factor out, carbon uptake generated by natural processes or indirect effects, such as CO₂ or N fertilisation, from direct human induced sequestration (UNFCCC, 2000b, p. 58-59, see also Lövbrand, 2004). The EU responded to these attempts to expand the role of sinks in the Kyoto Protocol by proposing stringent forest definitions for Article 3.3,² and by suggesting that no additional activities should

¹ In the Canadian proposal it is suggested that parties may define forest in accordance with their own circumstances. Afforestation is defined as “a change in land-use that, through the establishment of a stand of trees, forms a forest“, and reforestation is “a land-use practice that, through the establishment of a stand of trees, forms a forest” (UNFCCC, 2000b, p. 7- 15).

² In the EU proposal, a forest is defined as a “land with tree crown cover (or equivalent stocking level) of more than 10% and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5 m at maturity in situ.

be used under the provisions of Article 3.4 until “the issues of scale, uncertainty and risk” had been resolved (UNFCCC, 2000b, p. 33). If additional activities nevertheless were agreed upon, the EU proposed that countries either must use statistical tests and deterministic modeling techniques to prove that the activities have had detectable and intentional human-induced effect on carbon stocks, or accept significant limits on credits gained from Article 3.4 (UNFCCC, 2000b, p. 46).

The range of civil society representatives present during the run-up for COP 6 in The Hague criticised the technical frenzy of negotiations and worried that the focus on technical details would black-box the moral and political issues at stake (CAN, 2000b). In the attempt to disclose the politics lurking in the technical debate, the CAN explained that the JUSCANNZ “pick and choose approach” to forest definitions would allow large forest nations in the North to claim credits for activities on land which could not ordinarily be described as a forest (CAN, 2000c). The NGO community also criticised the proposal that land use and forestry projects should be made eligible within the Clean Development Mechanism (CDM). In contrast to the politics of definitions and accounting methods for Articles 3.3 and 3.4, this debate gave voice to a number of Latin American states. As potential hosts of forestry projects under the CDM, Bolivia, Costa Rica and Chile used scientific and legal arguments to persuade sink skeptics to accept land use change and forestry projects as eligible CDM activities (UNFCCC, 2000b, p. 72-75). Many civic observers resisted the scientific framing of forestry projects in developing countries and instead talked about sinks in the CDM as a “biodiversity disaster” and a threat to the people whose livelihood depend upon the forests at stake (CAN, 2000b; 2000d). In contrast to the interstate dialogue that, according to Fogel (2004, p. 111) aimed for “standardized carbon units produced through standardized sequestration projects in standardized developing countries”, civic groups pointed at the rich biological diversity of the forests at stake and the cultural diversity of the communities living in and of them.

Forests may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground; or of open forest formations with a continuous vegetation cover in which tree crown exceeds 10 percent.” The EU defines afforestation as “conversion to forests of land that has not supported forests for a period of at least 50 years” and reforestation as “conversion to forest of land that has supported forest within the past 50 years, but has been converted to other land-uses for a period of at least 20 years prior to the start of the commitment period” (UNFCCC, 2000b, p. 9-15).

The politics of definitions and accounting methods culminated in November 2000 and contributed to the collapsed COP 6 in The Hague. Even though progress had been made on forest definitions and additional activities under Article 3.4, the scale and uncertainty management of the sink provisions remained open questions (IISD, 2000b, p. 21). So did the role of forestry projects in the CDM. Despite a last minute compromise text by the COP 6 chair Jan Pronk, the parties could not agree upon a shared interpretation of the sink concept before the end of the meeting. Instead they decided to resume their deliberations before COP 7 the following year.

The Bonn compromise and beyond

When the US government in March 2001 declared that it would not continue down the Kyoto road, the sink negotiations entered a new phase. At the opening plenary of the resumed COP 6 in Bonn in July 2001, the EU members announced that they were ready for compromises with all parties to reach an agreement that would respect the environmental integrity of the Kyoto Protocol *and* be economically efficient and flexible (IISD, 2001, p. 5). Since the EU needed support from the United States' former allies in the JUSCANNZ group in order to secure the entry into the force of the protocol, European negotiators made use of the additional LULUCF activities in Article 3.4 to strike a deal. After many years of disagreement, the negotiating parties hence decided to include cropland management, grazing land management, revegetation and forest management as voluntary activities under Article 3.4 (UNFCCC, 2001). Despite an 85 percent discount rate (used to factor out carbon uptake by natural and indirect human effects) and a three percent cap on the forest management values reported in by respective state, the scale of eligible sinks hereby increased drastically (see Schultze et al., 2002). Beyond this agreement on Article 3.4, the Bonn compromise also allowed industrialised states to claim credits for afforestation and reforestation projects in the CDM, limited to one percent of the base year emissions for each year in the Kyoto commitment period (2008-2012) (UNFCCC, 2001).

When the Bonn agreement was translated into legal text at COP 7 in Marrakesh in November the same year, the epistemic chaos generated by the sink concept reduced in intensity. As noted by Adler and Bernstein (2005, p. 303), epistemic chaos is not sustainable as a form of governance since authority is not possible without a shared social reality and standards of validity. By specifying which forest definitions and land use activities that apply for Articles 3.3 and 3.4, the

Marrakesh Accords mark a first step towards epistemic validity in the Kyoto negotiations on LULUCF. Although a number of outstanding technical issues remained unsolved in Marrakesh (IISD, 2001), the agreement institutionalised the moral rightness of terrestrial carbon sequestration as greenhouse gas mitigation strategy and turned the imagining of a global sink market into a social reality. The sink proponents' interpretation of good climate governance was hereby accepted as a valid normative framework for the continued negotiations. However, the Marrakesh Accords at the same time manifested the sink critics understanding of scientifically sound greenhouse gas accounting. Following the AOSIS and EU members' more cautious approach, COP 7 invited the IPCC to prepare a report on "good practice guidance and uncertainty management relating to the measurement, estimation, assessment of uncertainties, monitoring and reporting of net carbon stock changes and anthropogenic greenhouse gas emissions by sources and removals by sinks in the land use, land-use change and forestry sector" (UNFCCC, 2001, p. 55).

In contrast to the IPCC special report on LULUCF that turned into a "lightning rod for efforts to create "epistemic chaos"" (Miller, 2007, p. 340) in the previous SBSTA deliberations, the IPCC Good Practice Guidance (GPG) for Land Use Change and Forestry was subject to less political bargaining. When presented at COP 9 in Milan in 2003, the report was without much debate adopted as the legitimate accounting framework for national greenhouse gas inventories under the UNFCCC. The epistemic authority of the complex accounting methods was further consolidated when the IPCC GPG on LULUCF, after a few additional rounds in the SBSTA, became the accepted accounting standard for the sink provisions in the Kyoto Protocol. Only occasionally, the interpretation of good terrestrial carbon accounting has resurfaced as a site for the politics of expertise in the Kyoto negotiations on LULUCF. The rules and provisions for forestry projects in the CDM is one such example. In time for the 16th session of the SBSTA in Bonn in June 2002, the parties had once more submitted views on appropriate LULUCF definitions and modalities. This time for afforestation and reforestation projects in the CDM (UNFCCC, 2002). In the EU report, the member states continued to emphasise the importance of a rigorous accounting system that controls the uncertain future of sink projects in developing countries and their potentially negative effects on native forests and local communities. In response to critique from the NGO community, the EU called for an inclusive dialogue with

indigenous peoples and other forest dependent communities in order to gain their views on seemingly technical matters such as definitions, baselines, additionality, leakage and crediting periods (UNFCCC, 2002, p. 7-8).

Canada and Australia, on the other hand, responded to the EU members' attempt to open the negotiation process to affected stakeholders by emphasising the need for efficient and science-based solutions. According to Canada, the work process for forestry projects in the CDM should be restricted to state actors and a limited number of technical experts in order to ensure a "single, concise and solution-oriented document" in time for COP 9 in Milan 2003 (UNFCCC, 2002, p. 13). In an Earth Negotiations Bulletin from SBSTA 20 in Bonn in June 2004, lay observers criticised this focus on science-based solutions. Seven years after the Kyoto meeting, the IISD noted that the LULUCF negotiations had reached a point where the technical procedures to secure the environmental integrity of the Kyoto Protocol openly compromised the level of access and transparency in the interstate dialogue (IISD, 2004, p. 13). At SBSTA 20, several African countries voiced concern about their inability to keep up with the overly complex and technical accounting procedures for the LULUCF sector. As a consequence, a process to simplify the rules for small-scale forestry projects in the CDM began. At COP 10 in Buenos Aires in December the same year, the UNFCCC secretariat was also asked to make additional funds available to ensure an effective implementation of the complex IPCC standards for terrestrial greenhouse gas accounting (UNFCCC, 2004). Whereas this decision appear as a result of weaker states' attempts to resist the effects of the rule-making process, it at the same time manifested the epistemic authority of the IPCC accounting framework and hereby put an end to (at least temporarily) the political struggle to classify and make sense of the sink concept.

Revisiting the politics of expertise

What lessons can be drawn from the complex and expert-driven Kyoto negotiations on land use change and forestry? At first glance the sink story suggests scientific expertise is a central avenue for political bargaining in global climate governance. Since the AGBM negotiations in 1997, state actors have used scientific knowledge claims as a resource to establish their preferences as scientifically sound and thus mould the multilateral dialogue to their favour. Proponents of flexible and low cost mitigation strategies have continuously advocated a comprehensive

accounting of all sources and sinks of greenhouse gases as the only science-based way to manage the climate problem. By contrast, proponents of strict emission targets and timetables have instead used expert arguments to point at the many scientific uncertainties associated with terrestrial carbon management and the necessity for a restrictive accounting of LULUCF activities in the Kyoto Protocol. By justifying their preferences in scientific terms, the decision-making authority of states has hereby been closely tied to their knowledge-making authority (cf. Miller, 2007). When following Fischer's macro-political account of the politics of expertise, one finds that states' position in the international order have given them unequal knowledge-making authority.

As indicated by my empirical tracing of the Kyoto negotiations on LULUCF, industrial states with access to cutting-edge forestry and carbon cycle research (e.g US, Canada, EU, Australia, New Zealand) were able to raise their voices with more effect in the political struggle over definitions and accounting methods in the SBSTA deliberations. Whereas small island states and large tropical forest nations in the South, at times, offered competing standards of validity, African and Asian states had difficulties to produce credible knowledge claims and were, as a consequence, largely excluded from the multilateral dialogue. The lack of credible voice among weaker states in the sink controversy mirrors a more general North-South knowledge divide in the international science community. In a study of nine top-ranked environmental science journals, Karlsson et al. (2007) found that almost 95 percent of the papers were published by scientists based in OECD countries. The majority of developing states were not represented at all in the journals considered. This pattern is reproduced in the climate science community and reflected in the IPCC special report on LULUCF. Although the IPCC has sought to secure a balanced geographic representation of its lead authors, Fogel notes (2005) that most of the authors and peer reviewers of the special report were based in a handful of states. A vast majority of these were either JUSCANNZ or EU members. These unequal patterns of knowledge generation and advice suggest that some government negotiators have had more expertise to draw upon when forming and justifying their preferences than others.

However, when interpreting expertise as a resource that actors possess and use instrumentally to shape the actions and conditions of others, we tend to overlook its contingent and negotiated

character. As indicated by the plentiful country submissions to SBSTA, the ambiguous sink concept has time and again forced government representatives to justify why a certain forest definition or greenhouse gas accounting strategy is more valid than another. Since the range of expert arguments at play in this communicative process have been subject to multiple interpretations, it has been inherently difficult for actors to control which knowledge claims that gain credibility and authority. By offering arguments for or against certain standards of validity, state actors have instead been engaged in an open-ended process of meaning-making. In instances when the interstate dialogue has shifted from bargaining to an arguing or sense-making mode, it has not only destabilised pre-given understandings of who counts as an expert or what constitutes valid knowledge. It has also changed the communicative dynamics and offered entry points for new voices to engage in the epistemic framework underpinning global climate governance. Among the most vocal non-state actors in the SBSTA deliberations are the IPCC and the CAN.

As a representative of “certified knowledge”, the IPCC has been pivotal in the making and classification of the sink concept as an ontological kind (Miller, 2007). Although the special report on LULUCF became a focal point for state bargaining and the politics of definitions and accounting methods before and after SBSTA 12 in June 2000, the IPCC’s engagement in the sink controversy enabled the imagining of terrestrial carbon sequestration as a scientifically sound greenhouse gas mitigation strategy. Through its Good Practice Guidance on LULUCF, the IPCC further consolidated the interpretation of what counts as good terrestrial carbon management and thus formalised the epistemic framework upon which present and future political practitioners can draw to know their bearings (Adler & Bernstein, 2005, p. 301). Whereas the IPCC has performed this central epistemic function under the banner of neutrality and scientific objectivity, the CAN has acted as an explicit rule interpreter. By transcending the complex and technical LULUCF terminology and highlighting the politics lurking in methodological issues and science-based solutions, this transnational advocacy network has constantly tried to open up the knowledge claims of powerful actors to civic scrutiny and debate. By channelling up the perspectives of more than 300 national and international environmental NGOs to the multilateral arena, and channelling down the science-based claims in the interstate dialogue to its members, the CAN has functioned as an important discursive interface between state and non-state actors from North and South.

Whether the presence and voice of actors such as the IPCC and the CAN is a sign of more democratic forms of expertise in global climate governance does, however, remain an open question. Although the appeal to reason, fact and knowledge in expert arenas such as the SBSTA may give space for deliberative engagement with the knowledge claims of powerful actors (Miller, 2007, p. 351), this study suggests that actors by no means participate on equal terms in such deliberations. As argued by Jasanoff & Martello (2004, pp. 345-346), “(t)he new institutions that have sprung up to manage the global domain produce, as we have seen, their own parochial cultures, with distinctive rules of participation and deliberation. It takes considerable “local knowledge” to penetrate these closed institutional preserves, knowledge that first-time players and other disadvantaged groups rarely possess”. As in most cases of global governance (Scholte, 2005, p. 92), the civic monitoring of the sink controversy has thus mainly been conducted by Northern, urban, elite and English-speaking civil society professionals from resourceful NGOs such as Greenpeace, Friends of the Earth and World Wide Fund for Nature (WWF). Even though these civic actors have sought to represent the voices of marginalised groups, in particular those of indigenous and local communities in tropical regions who live in and of the forests at stake in the Kyoto negotiations on LULUCF, Duwe (2001) notes that the CAN suffers from its own internal knowledge hierarchies and accountability problems. Since Northern NGOs are greater in number and institutional capabilities, they have come to dominate the agenda and process in the CAN at the expense of its Southern counterparts (Duwe, 2001, p. 183).

Although there is no reason to expect that marginalised knowledge claims are more innocent than those of elite groups, it is of course troubling to find that debates with far-reaching implications such as that on global climate change seem to disqualify state and non-state actors alike that do not command the language of science. To see this pattern play out along North-South lines may appear even more troublesome. If we approach the politics of expertise as a reflection of structural patterns of knowledge generation and use, we may expect future climate governance arrangements to continue to benefit those states, institutions, NGOs that already command existing global environmental and development repertoires (Fogel, 2004, p. 113). However, if we instead interpret authoritative knowledge as a social construction that cannot exist apart from the social relations that constitute and legitimate it, the politics of expertise in global climate

governance appears more dynamic and open-ended. In a time when the Kyoto Protocol's commitment period has begun and the negotiations on a post-2012 treaty are intensifying, we may expect state actors to once again use knowledge claims to justify the moral rightness of their actions. Rather than approaching the outcomes of this exercise as pre-determined by the capacities and privileges of structure, social constructivists tell us that the knowledge and practices people use to order and make sense of the world are conditional to socially and culturally contingent contexts. Hence, as the multilateral dialogue enters the post-2012 era, new understandings of what counts rational, fair and good terrestrial carbon management may indeed gain ground.

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