

## Aarti Gupta and [Michael Mason](#) Transparency

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## <ct>39. Transparency

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### <a>Introduction

<text>Transparency is currently one of the most bandied-about words in both multilateral negotiations on climate change and private climate governance arrangements. In the multilateral context of the United Nations Framework Convention on Climate Change (UNFCCC), interventions by country delegates, international organizations, civil society groups and corporate actors invariably reiterate the need for (various types of) transparency to fulfill myriad climate governance ends. These include building trust between developed (Annex 1) and developing (non-Annex 1) countries, enhancing accountability, assessing performance, and/or assessing the environmental effectiveness and adequacy of current climate engagements. Corporate actors involved in private initiatives such as the Carbon Disclosure Project are also embracing transparency, through voluntarily disclosing their carbon emissions or other climate mitigation actions, in an ostensible bid to (comparatively) assess, be held accountable for and/or improve their environmental performance, as well as facilitate the functioning of carbon markets (see Dingwerth and Green this volume).

Yet does transparency further such varied, and often highly politically contested, objectives? As a growing body of social science research reveals, transparency does not always deliver on its transformative promise, and the presumed links between transparency and greater accountability, and more democratic and effective decision-making, remain tenuous in practice (Etzioni 2010; Fung et al. 2007; Graham 2002; Hood and Heald 2006; Lord 2006). Although the concept of transparency can be understood in multiple ways, ranging from a general openness to increased flows of information, we focus in this chapter on a specific manifestation of transparency in global environmental governance—the targeted disclosure of information intended to evaluate and/or steer the behavior of specific actors. We term this phenomenon ‘governance by disclosure’ (Gupta 2008, see also the extended discussion in Gupta and Mason 2014a), and explore its uptake and institutionalization in the global climate realm. Transparency’s transformative effects in global climate governance remain particularly important to consider, given the increasingly heterogeneous and fragmented nature of such governance—encompassing treaties, transnational municipal networks, subnational actors,

bilateral agreements and voluntary corporate initiatives (Biermann et al. 2010; Pattberg and Okechukwu 2009; Zelli and van Asselt this volume). In such contexts, the demand and supply of transparency is multidirectional, rather than flowing only from governments to interested publics.

In assessing the transformative potential of transparency in the climate realm, we focus, first, on contentious debates within the UNFCCC around measuring, reporting and verification (MRV) systems that seek to make transparent who is doing what, how and to what end in combating climate change. Second, we focus on private carbon disclosure initiatives and transparency arrangements that underpin voluntary carbon offset markets. Our core argument is that the transformative potential of transparency is being compromised by an increasing privatization and marketization of disclosure initiatives in the climate realm. In the next section, we locate the theoretical grounds for our claims in what we label a ‘critical transparency studies’ approach.

<a>Theorizing transparency: towards a critical transparency studies lens

<text>There is a diverse scholarly literature addressing the embrace of transparency in domestic and global environmental governance. National-level legal and economic analyses of environmental policy were among the first to draw attention to what Florini (1998) labeled ‘regulation by revelation’ in specific developed country contexts (Fung et al. 2007; Gouldson 2004). Within the fields of comparative politics and international relations, most academic work on transparency and information disclosure in global environmental governance has followed either an institutionalist or critical theoretical perspective. *Institutionalist* perspectives view information disclosure as central to more effective and accountable (global) governance. The basic premise is that institutions—organized clusters of rule-making and collective behavior—can increase cooperation among states by correcting for information asymmetries and rationalizing decision-making (Keohane 2006; Mitchell 1998).

Two strands of institutionalism—liberal institutionalism and rational institutionalism—have generated significant work on the importance of information disclosure in global environmental governance. *Liberal institutionalism* posits that transparency in international environmental rule making promotes inter-state cooperation by publicizing shared interests and actor commitments (Mitchell 1998). The institutionalization of information disclosure in

international environmental regimes ranges from multilateral obligations on notification and prior-informed consent in governing transfers of hazardous substances, to the transnational diffusion of voluntary sustainability reporting standards. In analyzing such cases of transparency in international politics, liberal institutionalists are apt to attribute the lack of effective disclosure-based governance to shortfalls of design or capacity, and concurrent failure to embed transparency within the decision contexts of both disclosers and recipients (Bauhr and Nasiritousi 2012; Florini 2007; Fung et al. 2007).

As a set of distinct but related perspectives, *rational institutionalists* view institutions as sets of incentives presenting actors with strategic, interest-based calculations. In this economic approach, the structured disclosure of environmental information assures relevant actors that free-riding polluters are easier to identify and thereby sanction. The nature and scope of institutionalized disclosure is argued to affect the payoff functions of polluters, whether these are firms (Garcia et al. 2009; Peck and Sinding 2003) or states (Barrett 2003; Bosetti et al. 2013). Dysfunctionalities in transparency arise or are explainable by actor preferences being distorted or skewed by the disclosure of incomplete or unreliable data, or the lack of comparability, comprehensibility or accessibility of environmental information. Climate governance research informed by this approach has focused on international climate negotiations, deploying varieties of game theory to model the means by which greater information flows (on actor incentives, bargaining power and the properties of governance structures) can facilitate effective cooperation (Di Canio and Fremstad 2013; Madini 2013).

In contrast to institutionalism, a *critical theoretical perspective* on transparency emphasizes that its uptake, institutionalization and effects need to be analyzed within broader, often contested, political-economic and normative contexts within which disclosure is being deployed. Such a lens, which we label a ‘critical transparency studies’ perspective (Gupta and Mason 2014a, pp. 8–12; see also Lord 2006), emphasizes the historicity and socio-political conditioning of transparency and disclosure practices; and acknowledges the unavoidable normativity (value-laden structure) of transparency. It draws on important strands of transparency-relevant research advanced by constructivism and critical political economy scholarly traditions. *Constructivist analyses* of science, knowledge, and information dwell on the social forces framing global environmental problems, identifying deep-seated normative and scientific uncertainties over what is valid knowledge and whose information counts (Jasanoff this

volume). If so, agreeing on what is ‘more and better’ information, that is, on the scope and quality of transparency, is inevitably subject to the dynamics of power (Forsyth 2003; Jasanoff 2004). Related scholarship on climate change has focused more on the social construction of climate change knowledge—and the role of expertise therein—than on the governance implications of general or targeted disclosure of climate information (e.g., Demeritt 2001; Pettenger 2007). Nevertheless, its critical stance suggests an analytical interest in laying bare *whose information counts and is accorded political primacy*, in contrast to the functionalist preoccupation with reducing information asymmetries as a means to rationalize decision-making.

A critical transparency studies lens also draws on the insights of international *political economy* scholarship (e.g., Clapp and Helleiner 2012; Levy and Newell 2005; Stevis and Assetto 2001). This strand of scholarship emphasizes the current political hegemony of what Steven Bernstein (2001) labels ‘liberal environmentalism’—an authoritative complex of norms framing environmental governance challenges according to market liberal rights and values. For Newell and Paterson (2010), global responses to climate change are heavily conditioned by neoliberalism, prioritizing the creation and expansion of carbon markets over mandatory restrictions on fossil fuel use (see also Bond 2011). From such a perspective, transparency in climate governance is structured by a global political economy in which private actors have a pivotal role in deploying, shaping and potentially limiting public modes of information disclosure. Transparency, in this view, is likely to have minimal market-restricting effects, and may even serve to reinforce socially and ecologically harmful concentrations of public and private power.

The above discussion allows us to distill a set of (potentially competing) drivers of transparency’s uptake in governance, with consequences for its transformative effects. First, as much of the current scholarship noted above documents, a growing embrace of transparency in global politics is partly stimulated by a rights-based democratic push for individual liberty, choice and participation (Graham 2002; Mason 2008). We label this a *democratization* driver of transparency’s uptake in governance, one that also underpins the spread of ‘right to know’ and freedom of information laws across the globe over the last quarter century (Florini 2007). Such a democratization driver of transparency is also assumed to foster greater accountability of governance, insofar as disclosure of relevant information is seen as a necessary step in holding actors to account for their (in-)actions, according to set environmental standards. Insofar as

information is disclosed by those responsible for decisions that significantly affect the interests of others, such disclosure should facilitate individual and institutional answerability and redress, according to expected standards of behavior (Biermann and Gupta 2011; Keohane 2006; Mason 2005; see also Fox 2007). In climate governance, however, such interlinkages are likely to be unevenly conceptualized and institutionalized, given political conflicts over the nature and direction of accountability, deriving from broader contested debates about historical responsibility for climate change.

Tensions arise, furthermore, from the fact that a democratization and accountability imperative for disclosure may clash with another dominant driver of transparency's uptake in environmental governance—a neoliberal privileging of market-based solutions to global sustainability challenges (Gupta and Mason 2014b; Mason 2008). Such a *marketization* driver of transparency's uptake in global environmental and climate governance is reflected, we claim, in the growing embrace of voluntary transparency as a default governance option to avoid more stringent or costly action pathways (Haufler 2010). A marketization imperative for transparency also stems from the need for specific types of information to *create new markets* in environmental goods and services, such as those for carbon or genetic resources. Transparency is thus increasingly essential to the payment for ecosystem services (PES) trend in global environmental governance. If so, the uptake of transparency may well be actively promoted by powerful actors, such as corporations and policy elites, in order to create and *facilitate* markets.

Taken as a whole, the discussion above suggests a climate-related critical transparency studies research agenda that calls for assessing how the imperatives of democratization and marketization shape uptake and effects of governance by disclosure in this realm, and the extent to which these drivers work in complementary or conflicting ways. In assessing these dynamics, another important question becomes the extent to which governance by disclosure *decenters state-led regulation and opens up political space for new actors* (Gupta and Mason 2014a, p. 17; see also Mol 2014). A critical transparency studies perspective posits that private actors and civil society are crucial agents in institutionalizing disclosure-based governance, particularly in neoliberal political-economic contexts (e.g., Langley 2001). Institutionalized disclosure may thus *decenter* state-based regulation if it facilitates the generation and dissemination of information beyond the legal and epistemic control of governments, as may be the case with private climate disclosure initiatives. However, it may also *qualify* existing state sovereign authority by means of

differentiated regulatory impacts on different categories of states, as we note below in the case of transparency requirements in the UNFCCC.

We turn next to evaluating the drivers of transparency's uptake and its institutionalization in global climate governance, focusing on multilaterally negotiated disclosure in the UNFCCC, as well as private disclosure initiatives.

#### <a>Evaluating transparency in state-led climate governance

<text>Transparency has been a recurring theme within the UNFCCC negotiations since at least the 2007 Bali climate conference, where the general (and for developing countries, voluntary) reporting and review obligations in the UNFCCC and the Kyoto Protocol were recast as a need for all future climate-related 'commitments, actions and support' to be 'measurable, reportable, and verifiable' (MRV) (UNFCCC 2007, p. 3). The focus on MRV is, in our view, aligned with the growing uptake of transparency in global environmental governance. Such systems are also often implicated in the ascendancy of neoliberal environmental governance, which emphasizes creation of new markets and performance-based compensation as key to securing environmental aims (Duffy and Moore 2010).

The multiple aims of MRV in the UNFCCC context are to assess that all countries are complying with and can be held accountable for their climate mitigation commitments or actions. MRV is also a precondition to compensate non-Annex I climate mitigation actions or offset Annex I country emissions.

However, the modalities of MRV, i.e., what has to be measured, reported and verified, how and by whom, remain subject to extensive negotiation and political conflict, given that such systems can impinge upon national sovereignty and/or recast governance authority away from (some) states to 'international experts' or other non-state actors. These dynamics have been evident in UNFCCC debates over 'international consultation and analysis' of voluntary developing country mitigation actions, and MRV relating to REDD+ (reducing emissions from forest-related activities), both of which we briefly consider below.<sup>1</sup>

#### <b>Transparency of Voluntary Non-Annex I Actions: International Consultation and Analysis

<text>Negotiations over MRV for both Annex I and non-Annex I actions came to a head in the 2009 Copenhagen climate conference, with the much publicized standoff between the US and

China over the US demand for international verification of domestic (voluntarily undertaken) mitigation actions of non-Annex I countries. China strongly opposed this demand, viewing it as an infringement of sovereignty (Niederberger and Kimble 2011).

The resulting Copenhagen Accord contained compromise language on MRV, which was subsequently included within the 2010 Cancún conference decisions. These included International Assessment and Review (IAR) of climate mitigation actions for Annex I countries, to be undertaken by UNFCCC designated international experts; and International Consultation and Analysis (ICA) to ‘increase transparency of mitigation actions and their effects’ of non-Annex I countries (UNFCCC 2010, Articles 44 and 63). Both are intended to facilitate transparency of mitigation actions, but the ICA process is the first to make this mandatory for the voluntarily assumed mitigation actions of non-Annex I countries.

As a result, extensive debates have turned since 2010 on the modalities of ICA, including the imperative for it to be ‘non-intrusive, non-punitive and respectful of national sovereignty’ while also being cost-effective and within reach of all non-Annex I countries (UNFCCC 2010, para 63). Beyond issues of capacity and resources, a fundamental question is whether accepting international (i.e., third party) ‘consultation and analysis’ relating to voluntary actions by non-Annex I countries constitutes an irrevocable first step towards dismantling the current ‘firewall’ between Annex I and non-Annex I countries regarding binding climate mitigation obligations. This is the position taken, for example, by Sunita Narain of the Center for Science and Environment (CSE), India, who argues that the ICA will result in ‘a de facto binding regime [for all], as countries’ domestic targets would be verified and *progress reported internationally*’ (CSE 2010, emphasis added). This suggests that transparency may well force more broad-based accountability in global climate governance efforts, yet the legitimacy of doing so remains contested, and the burdens of doing so are likely to be unevenly distributed.

<b>Transparency of Supported Non-Annex I Actions: MRV for REDD+

<text>Similar debates are discernible in relation to the UNFCCC REDD+ mechanism, wherein forests are conceptualized as providing the ecosystem service of carbon sinks, with a carbon mitigation potential that can be measured, valorized, compensated and/or marketed. Such valorization is to occur at national level, with states centrally involved with REDD+ MRV systems, and with varying degrees of national flexibility permitted with regard to divergence in



scope, techniques, and data sources (Herold and Skutch 2011; Romijn et al. 2012). Furthermore, whether REDD+ compensation will be organized through markets or international fund transfers from Annex I countries remains undecided in global policy. As an experiment in payment for ecosystem services, REDD+ thus unfolds in an unequal geopolitical context, whereby distribution of, and control over, the ecosystem service of carbon sinks varies, as does the capacity to valorize and be compensated for it. REDD+ MRV systems are thus closely implicated in these exigencies of politics, insofar as they determine what is made transparent, by whom and with what consequences for compensation (Gupta et al. 2014; Turnhout et al. this volume).

Following Copenhagen in 2009, where REDD+ was seen as one of the few points of general agreement, the 2010 Cancún agreements developed further guidance about REDD+ MRV systems, noting that these should be ‘available and suitable for review as agreed by the conference of the parties’ (UNFCCC 2010). However, an ‘independent review’ of REDD+ MRV outcomes remains a high-level political conflict over potential infringements of national sovereignty (Herold and Skutsch 2011, p. 2).

Such concerns resulted in the collapse of REDD+ negotiations in 2012 Doha climate conference, given unresolvable disagreements between Annex I (led by Norway) and non-Annex I countries (led by Brazil) over the need for ‘robust’ international *verification* of forest emission reductions as a basis for REDD+ performance-based payments (Conservation International 2013). The political significance of REDD+ MRV systems is underscored by this outcome, notwithstanding the framing of such matters as ‘technical’ within the UNFCCC context. The disagreement highlighted that some states, including China, India and Brazil, can contest or block perceived infringements on national sovereignty by determining the scope of their own REDD+ MRV systems or contesting the need for international verification, yet others will be less able to do so. One outcome can be exclusion from participating in REDD+. As McAlpine et al. (2010, p. 339) argue, international MRV standards can lead to a ‘disproportionate representation of some countries [in the REDD+ mechanism] at the expense of others.’ In sum, REDD+ and its MRV systems constitute a still unstable climate governance project, with the jury out on how such systems will develop, and how they might enhance accountability or environmental integrity in global climate governance. As such, they merit further scrutiny, also

in light of the neoliberal and technocratic thrust to global climate governance within which they are being developed, as we discuss further below.

<a>Evaluating transparency in private climate governance

<text>A neoliberal thrust to transparency's uptake in climate governance is clearly discernible within regulated carbon markets associated with the CDM and beyond. Voluntary markets in carbon offsets exist parallel to the compliance markets, but without the state-centered, hierarchical structure of the former: alongside lack of centralized mechanisms for issuing credits, there are competing quality standards and disparate, individualized contracts (Bumpus and Liverman 2008, pp. 137–139; Newell and Paterson 2010, pp. 118–125). As Newell and Paterson (2010, p. 125) note, in voluntary carbon markets, there is a lack of transparency and access to information about project designs, methodologies and carbon pricing. A contradiction arises here, because the case for business investment in voluntary carbon offsets is that they reduce climate-related financial risks (e.g., regulatory and reputational risks) caused by existing information deficits as to the potential costs of climate change to corporations (Harmes 2011, pp. 110–111). The contradiction reveals the growing opportunity to extract economic value from selective climate information—e.g. proprietary intelligence on carbon price trends or climate-related cost vulnerabilities of business competitors—at the same time as general transparency on mitigation (and adaptation) actions is supported in the UNFCCC.

To be sure, there are major private interests and civil society organizations constructing corporate carbon disclosure as a *public good*, whether this is information on the purchase of voluntary emissions reductions or on greenhouse gas emissions from corporations. Founded in 2007, the Offset Quality Initiative (OQI), comprising six non-profit member organizations, has as one of its primary objectives to serve as a credible source of information on greenhouse gas offsets, leveraging the knowledge and experience of OQI members (Offset Quality Initiative n.d.). The self-representation of OQI as a public information resource for policymakers and other stakeholders responds to concerns, across both regulatory and voluntary offset markets, about the environmental and business integrity of what OQI labels the offset commoditization chain. Reliable information about carbon markets addresses persistent, if divergent, demands for legitimation from civil society and finance capital interests.

The Carbon Disclosure Project (CDP), the most prominent voluntary mechanism promoting disclosure of corporate greenhouse gas emissions, has similarly emerged as a non-profit organization facilitating public dissemination of climate information, in order to incentivize their climate change mitigation efforts (Kolk et al. 2008; MacLoed and Park 2011; Knox-Hayes and Levy 2014). Set up in 2001, the CDP represents a consortium of institutional investors holding, by 2013, \$87 trillion of assets (CDP 2013). The CDP's core disclosure-based climate governance strategy revolves around an annual questionnaire submitted to the world's largest companies requesting information on climate-related risks and opportunities, as well as their carbon management strategies. There is now a substantial level of reporting: according to the CDP, more than 3,000 companies responded to the 2011 questionnaire, including 81 percent of the Global 500 (CDP 2013). Aggregate scores for disclosure and performance are released annually on the CDP website, while CDP signatory investors and disclosing companies can access private comparative analysis of reported data.

For both the voluntary carbon markets and the CDP, the initial impetus for public transparency of emissions trading and greenhouse gas emissions came from environmentalist non-governmental organizations (NGOs) and investor networks, who viewed carbon finance as an effective means to realize climate mitigation goals. Yet this democratic take on emissions-related information has been overtaken by a marketization imperative, skewing the institutionalization of disclosure. For the voluntary carbon markets this reflects, since 2005, private enterprises overtaking non-profit organizations as the main source of investment (Marcello 2011, p. 155), and the growing role of carbon market businesses in controlling the transparency agenda, such as the International Carbon Reduction and Offset Alliance, which promotes self-regulation of the voluntary carbon markets. For Paterson (2009, p. 249), the displacement of NGO-led carbon certification standards by industry-led schemes suggests a 'corporate capture of the verification process.' There is also a trend to commodify disclosed information under the CDP: the generation of extensive paywalls behind which enhanced interpretive products are available weakens its claims to public transparency.

It may be argued that these private and voluntary mechanisms carry little governance weight compared to the UNFCCC regime and its compliance carbon markets: despite their rapid recent growth, by 2012 voluntary carbon markets were worth only 0.03 percent (\$576 million) of the compliance markets (Ecosystem Marketplace and Bloomberg New Energy Finance 2012).

However, their transparency norms and practices significantly shape the role of private authority in tackling climate change, and bleed into the state-centered governance architecture. Voluntary carbon markets are parasitic on mandatory schemes to the extent, for example, that their opportunities to monetize emissions reductions often derive from pre-registered and even rejected CDM projects. The opacity of the voluntary markets has created a high level of fraud risk that, some commentators claim, has contributed to the recent decline in the value of emission reductions (both voluntary and certified) by exposing threats to their credibility (Martin and Walters 2013, p. 38). According to Interpol, the lower scrutiny and lack of transparency of the voluntary carbon markets invites illegal activity, including the fraudulent manipulation of information and misleading claims (Interpol 2013, pp. 10–11; see also Transparency International 2011). Furthermore, the voluntary carbon markets have been the testing ground of forest carbon credits not yet part of the compliance carbon markets, and there is already ample evidence that the information deficits and hypothetical emission baselines associated with forest carbon calculations are prone to fraud (Jacobs 2013). This highlights as well the challenges facing establishment of credible MRV systems for supported UNFCCC REDD+ actions.

In a quest to increase trust through transparency, the CDM Executive Board launched a voluntary questionnaire in a meeting in April 2014 on the sustainable development benefits of projects, claiming that this would enhance transparency of credits for certified emissions reductions. The desire to reassure participants in compliance carbon markets characterized by weak demand and low prices points to problems of trust impacting the entire offset sector: it is fair to say that disclosure-based governance of voluntary carbon offsets has exacerbated the concerns of states and civil society actors over the credibility of carbon markets. Similarly, the CDP's voluntary corporate disclosure of emissions has been criticized for the lack of usability of this publicly disclosed information, in particular, to make meaningful comparisons between firms and thereby raise accountability claims against particular companies (Knox Hayes and Levy 2014). Such questioning of private climate governance disrupts the wider legitimacy of market-based responses to climate change.

#### <a>Conclusion

<text>Transparency, as information disclosure, is becoming a widely accepted norm and set of practices in global climate governance. Disclosure of climate-related information is mainly seen

as a way to monitor and/or reward various actors' climate mitigation actions, thereby contributing, at least in principle, to the accountability both of private disclosers for their (non-)performance, and also of public policymakers for the reach and effectiveness of governance outcomes. Across both public and private global climate governance arrangements, the call for transparency about mitigation actions derive largely from a democratization impetus; that is, a call for inclusive communication on governance responses to climate change, which transcends the territorial scope of liberal democratic states. While in a private context, such an impetus issues from environmental NGOs and sympathetic investor networks, a democratization imperative for disclosure within the UNFCCC becomes implicated in broader contested narratives about historical responsibility for climate change. As such, rendering climate governance actions transparent is inextricably linked to political and normative disagreements about whose actions should be made transparent, by whom and to what end, ensuring that transparency itself becomes a site of political conflict.

As our analysis has also shown, the institutionalization of disclosure in climate governance partially corroborates the proposition advanced earlier in this chapter that governance by disclosure may decenter and qualify state regulation, and open up political space for non-state actors (see also Dingwerth and Green this volume). The 'qualification' of sovereignty of those states that join the multilateral UNFCCC regime stems from permitting verification (or 'analysis') of disclosed information about climate mitigation actions that goes over and above mere self-reporting, with a growing mandatory role for third parties (ranging from international technical experts to accountancy firms) in climate-related MRV, and with varying implications across non-Annex I countries.

Furthermore, the growing role of private actors in delivering global climate governance, whether interacting with the multilateral regime (e.g., compliance carbon markets) or through fostering voluntary disclosure mechanisms, also strengthens the claim that state-based climate regulation is being decentered—and arguably diluted—by the multiplicity of non-mandatory governance practices. Indeed, the disorganized and sometimes misleading disclosure of information on carbon emissions and stocks (e.g., forest carbon) in voluntary carbon markets has unsettled the legitimacy of the UN climate change regime.

In sum, our analysis suggests that the institutionalization of transparency in global climate governance underpins a neoliberal privileging of market-based solutions to climate

change. The growing governance role of carbon markets—within and beyond the UNFCCC—is predicated on the disclosure of information necessary to create a fungible commodity from intangible physical processes. Given that these are manufactured markets, information credibility is essential to their daily functioning, although continuing information deficits and asymmetries elicit gaming by state and private actors. Carbon markets are thus also central to the marketization of climate transparency, with this institutional driver also manifesting itself in other climate disclosure mechanisms, such as the CDP.

The skewed character of market-based climate transparency compromises its transformative potential, particularly as a mechanism for enhancing public accountability of those states and private enterprises generating substantial or otherwise disproportionate greenhouse gas emissions. The more privatized climate information becomes, the less likely it is that inclusive communication by affected parties can take place on the desirability or direction of climate governance choices, even as there is little sign that voluntary carbon disclosure systems are shifting production and investment strategies of corporations in a low-carbon direction.

As we have also shown, the prospects for greater transparency to enhance accountability of those needing to take the most urgent mitigation actions remains limited, given that such disclosure is inextricably tied up with persisting geopolitical and normative disagreements over equity and reciprocity of actions to mitigate climate change.

#### <a>Note

<note>1 Transparency is also key to the Kyoto (market-based) Clean Development Mechanism (CDM), hence we briefly discuss its disclosure provisions vis-à-vis voluntary offset markets in the subsequent subsection on private governance.

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