



# Transparency to the Rescue?

## Assessing Effectiveness of 'Governance by Disclosure'

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The Global Governance Project is a joint research programme of eleven European research institutions. It seeks to advance understanding of the new actors, institutions and mechanisms of global governance, especially in the field of sustainable development.

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## Abstract

Although transparency is a key concept in the social sciences, it remains an understudied phenomenon in global environmental governance. This paper analyses effectiveness of “governance by transparency” or governance by information disclosure as a key innovation in global environmental and risk governance. Information disclosure is central to current efforts to govern biosafety or safe trade in genetically modified organisms (GMOs). Through analyzing the dynamics of GMO-related information disclosure to the global Biosafety Clearing House (BCH), I argue that the originally intended normative and procedural aims of disclosure in this case -- to facilitate GMO importing country right to know and right to choose prior to trade in GMOs -- are not yet being realized, partly because the burden of BCH disclosure currently rests, ironically, on importing countries. As a result, BCH disclosure may even have *market facilitating* rather than originally intended *market regulating* effects with regard to GMO trade, turning on its head the intended aims of governance by disclosure.

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## Foreword

This working paper was written as part of the Global Governance Project, a joint research programme of eleven European research institutions that seeks to advance understanding of the new actors, institutions and mechanisms of global governance. While we address the phenomenon of global governance in general, most research projects focus on global environmental change and governance for sustainable development. The Project is co-ordinated by the Institute for Environmental Studies (IVM) of the Vrije Universiteit Amsterdam and includes associate faculty members and research fellows from eleven European institutions: Science Po Bordeaux, Bremen University, Freie Universität Berlin (Environmental Policy Research Centre), The Fridtjof Nansen Institute Oslo, London School of Economics and Political Science, Oldenburg University, Potsdam Institute for Climate Impact Research, Vrije Universiteit Amsterdam, Vrije Universiteit Brussel (Institute for European Studies) and Wageningen University.

Analytically, we define global governance by three criteria, which also shape the research groups within the Project. First, we see global governance as characterised by the increasing participation of actors other than states, ranging from private actors such as multinational corporations and (networks of) scientists and environmentalists to public non-state actors such as intergovernmental organisations ('multiactor governance'). These new actors of global governance are the focus of our research group MANUS—Managers of Global Change.

Second, we see global governance as marked by new mechanisms of organisation such as public-private and private-private rule-making and implementation partnerships, alongside the traditional system of legal treaties negotiated by states. This is the focus of our research group MECGLO—New Mechanisms of Global Governance.

Third, we see global governance as characterised by different layers and clusters of rule-making and rule-implementation, both vertically between supranational, international, national and subnational layers of authority ('multilevel governance') and horizontally between different parallel rule-making systems. This stands at the centre of our research group MOSAIC—'Multiple Options, Solutions and Approaches: Institutional Interplay and Conflict'.

Comments on this working paper, as well as on the other activities of the Global Governance Project, are highly welcome. We believe that understanding global governance is only feasible through joint effort of colleagues from various backgrounds and from all regions of the world. We look forward to your response.

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## 1. Introduction

The changing nature of governance is now an established focus of inquiry in the social sciences. Debates in a variety of disciplines revolve around horizontal and vertical shifts in governance (van Kersbergen and van Waarden, 2004) and the distinct nature of private and public-private governance arrangements, compared to the predominantly state-led steering of the past. Much research has focused on analyzing the nature of such shifts and the reasons why they are occurring. This is accompanied by persisting debates about the accountability, legitimacy and effectiveness of new forms of governance (Bäckstrand, 2006; Biermann, 2007; Chan and Pattberg, 2008; Dingwerth, 2007; Dryzek, 1999; Gulbrandsen, 2008; Keohane, 2006; Mason, 2005; Newell, 2005, Pattberg 2007).

One mechanism —*transparency*—is acquiring growing dominance in the quest for accountability, legitimacy and effectiveness of public and private governance initiatives alike. Transparency is a key concept in the social sciences, widely evoked and (often unproblematically) assumed to be essential to accountable and effective governance. Indeed, a transparency turn in global environmental governance can be posited, given the increasingly central role that *information disclosure* plays in governance initiatives at national, regional and global levels. Such ‘governance by disclosure’ ranges from multilaterally negotiated treaties to govern trade in risky substances to private voluntary sustainability reporting or certification schemes<sup>1</sup>. Yet these disclosure initiatives are promoted by diverse actors and the normative rationales underpinning the imperative to disclose can vary widely. Furthermore, how transparency --- in both theory and practice --- contributes to more accountable and effective governance remains under-scrutinized. As I have argued elsewhere, it is thus timely to systematically examine how governance by disclosure is being institutionalized and how it works in the global environmental domain, as a way to illuminate the nature and implications of a transparency turn in governance (Gupta, 2008a; see also Florini, 2008; Mason, 2008)<sup>2</sup>.

Even as the promise of transparency is routinely touted, its potential downsides need consideration as well. The ‘perils and promise’ of transparency have been a long-standing scholarly concern in international finance and security studies (Lord 2006; MacDonald 1998; Soederberg 2001). In a domestic (mostly industrialized country) context, numerous studies analyze the effectiveness of what Ann Florini calls “regulation by revelation” (Florini 1998) in areas ranging from toxic emission reduction to vehicle safety to food safety (e.g. Beierle 2004; Fung et al. 2007; Konar and Cohen 1997). As these and other writings suggest, while the promise of transparency turns on its link to empowerment and to democratic and participatory governance, the perils can include

<sup>1</sup> While these governance initiatives have been much analyzed under the rubric of, for example, risk governance (prior informed consent treaties) or private, market-based voluntary governance (sustainability reporting or certification), they have not been systematically analyzed as examples of governance by disclosure.

<sup>2</sup> See also Langley 2001 and the special issue of *Global Environmental Politics* on Transparency in Global Environmental Governance, forthcoming August 2010.

drowning in disclosure (when too much of a good thing undermines its original intent) or the hijacking of transparency-based governance arrangements by powerful actors to further alternative aims (Gupta 2008; Mol 2006, 2008).

In light of this, whether transparency can be a legitimate and effective governance innovation in a *global* environmental context (characterized by North-South disparities in capacities to access and use information; and a political-economic context of inequality and power disparities) is the key concern here. Governance by disclosure in the global environmental domain is also complicated by the fact that issue-areas such as climate change or biotechnology, for example, require *anticipatory* governance, in light of persisting uncertainties about the nature and extent of risk and harm. As a result, information remains a fundamentally contested entity in governance of such issues-areas. If so, as constructivist writings within science and technology studies and international relations also highlight, information (including scientific information) alone is unlikely to resolve normative and political conflicts (Biermann, 2002; Essex, 2008; Gupta, 2004; Jansen, 2008; Jasanoff 2004; Levidow and Carr 2007).

In such a contested global context, the potential for information disclosure to meet desired governance ends becomes important to consider. I focus here on the workings of information disclosure in ensuring safe global transfers of genetically modified organisms (GMOs). While global GMO politics generate much scholarly attention (Bail et al. 2002; Clapp, 2007; Falkner and Gupta 2009; Gupta and Falkner, 2006; Jansen and Gupta 2009; Lieberman and Grey 2008; Newell 2003), most analysts do not focus specifically on information disclosure. Yet disclosure is a central means by which the Cartagena Protocol on Biosafety, the international treaty negotiated to govern global transfers of GMOs, seeks to attain various governance ends. The Protocol, concluded in 2000 under the Convention on Biological Diversity, mandates importer choice prior to trade in GMOs as a way to ensure safe transboundary transfer – with an essential precondition for choice being disclosure of information about traded GMOs.

Disclosure of GMO-related information is to occur by a variety of means (CP 2000; see also Gupta 2006). One such means is provision of information to an on-line global Biosafety Clearing House (BCH). The BCH was established by the Protocol's Article 20 in order to share biosafety-related information amongst countries, civil society, the private sector and citizens. It has been seen from the outset as essential to effective implementation (and hence effectiveness) of the Cartagena Protocol. A pilot phase was launched in 2001, with a fully operational BCH launched by 2004 (UNEP-GEF, undated). Concurrent with this, many developing countries are also involved in a UNEP-GEF "Project for Building Capacity for Effective Participation in the Biosafety Clearing House of the Cartagena Protocol" (henceforth UNEP-GEF Project). Given the growing global engagement with the BCH and substantial financial and human resources being invested in it, I focus here on the dynamics of disclosure to the BCH, as well as the role of the UNEP-GEF BCH Project therein.

The Cartagena Protocol entered into force in 2003, following ratification by 50 countries. As of December 2008, 149 countries (including the European Union and many developing countries) are Parties to it<sup>3</sup>. It is noteworthy, however, that most GMO producer and exporter countries, such as the United States, Canada and Argenti-

<sup>3</sup> *Cartagena Protocol on Biosafety, Status of Ratification and Entry into Force*. Convention of Biological Diversity (<http://www.cbd.int/biosafety/signinglist.shtml?sts=sign>). Last accessed December 9, 2008.

na, have not ratified the Cartagena Protocol and hence are not bound by its disclosure obligations (unless these are made binding on them bilaterally or through domestic regulations in importing countries). The implications of this for the functioning of BCH disclosure and for goals likely to be met are examined here.

The analysis is based upon primary and secondary documents, including country implementation reports; as well as detailed author scrutiny of over ninety Memoranda of Understanding (MoUs) signed between developing countries and the UNEP-GEF project; and over 60 responses to an author administered questionnaire about the constraints facing countries in providing information to the BCH<sup>4</sup>.

Two arguments are advanced on the basis of the analysis. First, I find that a consequence of most GMO exporting countries not being Parties to the Protocol is that the burden of BCH disclosure has shifted, in practice, from potential *GMO exporting to importing countries*, in particular developing countries (as one of the largest groups of countries who are currently Parties to the Protocol). As a result, the aims of disclosure in this regime -- to ensure an importing country's right to know and right to choose -- risk being turned on their head, with certain categories of information disclosed to the BCH by importing countries more likely to have *market enabling* rather than the originally intended *market regulating* effects with regard to the GMO trade. I argue, furthermore, that the current emphasis on importing country disclosure receives further impetus from the UNEP-GEF Project, given that this project equates "effective participation" in the BCH with ensuring that developing countries 'meet their obligations' as Parties to provide information to the BCH. I conclude that information disclosed via the BCH does not yet further the originally intended aims of ensuring importing country choice and regulatory oversight over GMO transfers.

The remainder of this paper elaborates on these arguments. Section 2 puts forward a broad conceptualization of effectiveness of governance by disclosure, in order to further specify the various ends (and whose ends) disclosure is intended to meet. Section 3 analyzes "who is disclosing what information by what means" to the BCH and the implications for the aims likely to be met. I conclude by discussing the prospects and limitations of governing global GMO flows via information disclosure and the implications for 'effectiveness' of governance by disclosure in global environmental and risk governance.

## **2. Assessing Governance by Disclosure: A Broad View of Effectiveness**

Assessing the promise and perils of governance by disclosure requires assessing its effectiveness in meeting desired ends. If so, it is important to delineate, first and foremost, what such ends are. Unlike with many environmental regulatory instruments, where a key ultimate end is reduced environmental harm, which is then also the key indicator for effectiveness (EEA 2001; Mitchell 1998; Young 1999), the ends sought to be attained by governance by disclosure are broader. Hence its effectiveness, I argue,

<sup>4</sup> This questionnaire was completed by developing country participants in seven Sub-Regional Workshops of the UNEP-GEF Project, held in Egypt in March 2008 over two weeks, parts of which I attended.

needs to be more broadly conceived. Given the variety of aims that transparency is associated with, a three-pronged typology of ends that disclosure seeks to attain can be posited, ranging from *normative* to *procedural* to *substantive* ends.

In line with the broad association of transparency with a ‘right to know’ (e.g. Florini 2007), we can posit, first, that such a ‘right to know’ is the first-order *normative goal* that governance by disclosure may seek to further. For environmental issues, the normative impetus for disclosure is that those exposed to potential harm have a right to know about damaging environmental behaviors or products (Beierle 2004; Rowen-Robinson and Rothnie 1996). If so, the extent to which governance by disclosure furthers such a right to know (and whose right to know) is an essential element in assessing effectiveness in specific instances. This requires analysis of whether a right to know is contested or not and the extent to which it is being *institutionalized* in practice in a given disclosure initiative.

Transparency is also associated, furthermore, with *empowerment* of information recipients in ways that go beyond a ‘right to know’. This is clear from the linkages posited between transparency and related governance goals such as more participatory, accountable, representative or democratic environmental and risk governance (Graham 2002; Gupta 2008; Stasavage 2003, van den Burg 2004). The procedural aims that disclosure may seek to further can thus include enhanced participation in decision-making; holding disclosers accountable; and/or exercising informed choice, depending upon the case at hand, with similar questions arising about the extent to which these goals are accepted and institutionalized in practice.

Finally, as analysts of disclosure have also discussed (e.g. Gouldson 2004; Stephan 2002; see also Mitchell 1998), transparency and information disclosure can aim to further substantive ends such as environmental improvements as well. The most prominent example of disclosure as a means towards reduced environmental harm is the US Toxic Release Inventory, where a key aim is substantive reductions in emissions (Konar and Cohen 1997).

In sum, we can posit that governance by disclosure may aim to inform and empower (and hence enhance the democratic potential of global environmental and risk governance) as well as further substantive regulatory goals such as reduced environmental harm or enhanced oversight over environmentally risky behaviors. Assessing effectiveness would then require, first, systematically distinguishing between these governance aims and delineating which of these are sought; and second, assessing whether they are (or are not) being met in specific instances of governance by disclosure<sup>5</sup>. This ensures a perspective on effectiveness that takes into account the myriad ends associated with transparency and hence one that goes beyond environmental improvements to include normative and procedural effectiveness as well.

In line with this three-part typology, the normative, procedural and/or substantive aims of BCH disclosure can also be further delineated. These aims are linked to the original impetus behind negotiating the Cartagena Protocol on Biosafety and the global cooperation problem that underpins this treaty. In contrast to many other global disclo-

<sup>5</sup> This approach is distinct, for example, from more traditional studies of policy effectiveness that distinguish between output, outcome and impact effectiveness, with impact effectiveness being the most challenging to assess in the environmental domain given causal uncertainties and long time lags (EEA 2001).

sure initiatives, the Cartagena Protocol was negotiated at the insistence of developing countries. These countries were concerned about the spread of novel genetically modified seed and crop varieties into their territories without their knowledge, which they would not have the capacity to discover or regulate. They demanded, therefore, the right to know and the right to choose whether to permit or restrict such transfers, although these demands were opposed throughout by agricultural (and GMO) exporting countries led by the United States<sup>6</sup>.

Information disclosure and its aims in this regime has thus been the subject of intense conflict (Bail et al, 2002; Falkner, 2000; Gupta, 2000). Following a series of compromises, disclosure in the global biosafety regime does aim to promote an importing country's normative right to know about entry into its borders of genetically modified seeds and crops; and seeks to further the procedural goal of importer choice. Such choice can, however, be either to restrict *or* permit trade in GMOs, hence the substantive outcomes that should flow from disclosure are not pre-mandated (unlike in other environmental disclosure initiatives, where an ultimate substantive aim is likely to be to *reduce* harmful effects). The substantive aim, in this case, is to regulate GMO entry into one's borders in line with domestic priorities and biosafety governance criteria, i.e. a substantive *market/trade regulating* aim. In assessing 'effectiveness' of BCH disclosure, I examine, therefore, whether and which of these aims are furthered via disclosure<sup>7</sup>.

For such an analysis, the provision of information to the BCH, its use and effects of such use are all important to consider. This paper focuses primarily on *provision of information* to the BCH. There is currently little evidence available about how information disclosed through the BCH is actually being used, by whom and to what effect, given that this information disclosure apparatus has only recently become operational. Despite this, however, analyzing the dynamics of information provision alone can powerfully reveal the prospects for the normative, procedural and substantive goals to be met and can reveal key challenges facing transparency as a tool of global environmental and risk governance.

Section 3 below examines the *categories of information* currently provided to the BCH as well as *who* is providing information (Section 3.1); the *means* of disclosure, including the role of the UNEP-GEF project in promoting BCH disclosure (Section 3.2); and *constraints* facing disclosure, particularly constraints facing developing countries (Section 3.3).

<sup>6</sup> This group of countries sought, instead, to frame the *raison d'être* of the Cartagena Protocol as being information exchange to ensure harmonized "sound-scientific" domestic GMO decisions, so as to enhance efficiency and thereby facilitate (rather than restrict) GMO trade. For a detailed analysis, Gupta 2000, 2006.

<sup>7</sup> The most controversial aspect of disclosure in the Cartagena Protocol relates to information to accompany GMOs contained in the multi-billion dollar bulk agricultural commodity trade. I analyze this aspect of disclosure and its functioning in detail elsewhere (Gupta, in preparation). This paper focuses on the BCH as the ostensibly less controversial but still central element in facilitating a right to know and choose of importing countries, the functioning and effectiveness of which has, moreover, been little analyzed to date.

### 3. Governance by Disclosure in Practice: Assessing BCH Effectiveness

#### 3.1. Disclosing information to the BCH: who is providing what information?

The objective of the BCH is to “facilitate the exchange of scientific, technical, environmental and legal information on, and experience with, living modified organisms; and assist Parties to implement the Protocol...” (CP 2000, Art. 20)<sup>8</sup>. All countries who have ratified the Cartagena Protocol have obligations to provide (at least some) information to the BCH. The categories of information to be provided to the BCH include, *inter alia*: domestic biosafety laws and regulations; bilateral or regional agreements; summaries of risk assessments or environmental reviews of GMOs; information about competent national authorities and emergency contacts; and final decisions taken domestically regarding imports or domestic approvals of GMOs (UNEP-GEF, undated, p. 20-21).

The obligation to disclose these various categories of information differs across countries, however, depending upon whether a country is a potential GMO importer or exporter (and hence is privy to certain categories of information or not). As a result, disclosure of these varying categories of information will have differing relevance for GMO importing versus exporting countries and thus for the goals that disclosure might further. In particular, information to be provided by GMO producing /exporting countries (such as which GMOs are being approved domestically and are thus likely to enter international trade; or information about illegal releases or movements of GMOs) is most centrally linked to whether the intended normative, procedural and substantive aims of disclosure will be met.

It is thus important to establish what information is being provided to the BCH and by whom. The most up-to-date analyses of the information currently available on the BCH are recent studies by the Secretariat of the Convention on Biological Diversity (SCBD), based on National Implementation Reports provided by Parties in 2007/2008. The SCBD has also undertaken a survey of BCH disclosure for these studies. The SCBD studies reveal that the information currently available on the BCH is very limited (CBD, 2008a; 2008b; 2008c). These studies show that “only 28% of the information required under the Protocol is reported to exist and to have been provided to the Biosafety Clearing House” (CBD, 2008a:3)<sup>9</sup>. Furthermore, this figure of 28% hides within it significant variations in the specific categories of information provided to the BCH.

Such variations, as noted above, are likely to be critical to whether disclosure informs and empowers potential GMO importing countries. As it turns out, the category of information *most comprehensively disclosed*, with information provided by a vast majority of countries, relates to details of the Competent National Authorities and Bio-

<sup>8</sup> The protocol refers to “living modified organisms” rather than the more commonly used term “genetically modified organism”. For an analysis of why this is so and why it matters, see Gupta 2000, 2004.

<sup>9</sup> This figure has to be interpreted keeping in mind that it is based on SCBD analysis of 50 national implementation reports received from Parties (out of a total of 141 Parties). Thus the percentage of information reported to exist and to have been provided to the BCH is likely to be lower than the figure of 28%, given the likelihood that countries not providing a national report are also less likely to provide information to the BCH.

safety Focal Points established by every country to facilitate implementation of the Protocol. A second category where relatively comprehensive information has been provided relates to domestic biosafety rules and regulations. In a summary report, the SCBD concludes from this that, although the overall level of information disclosure to the BCH is far from desirable, “these relatively high numbers cast a more favorable light on the status of implementation regarding the *administrative* requirements under the Protocol” (CBD, 2008a: 4, italics added).

However, this begs the question of the relevance that disclosure of these categories of information – categories designated as ‘administrative’ by the SCBD – have for the normative, procedural and substantive goals to be furthered by disclosure. Comprehensive disclosure of importing country biosafety laws, institutions and contact persons may have the effect of easing the burden, otherwise squarely on GMO exporting countries, to ferret out such information for themselves. Thus, provision of such ‘administrative’ information – yet information that is clearly pertinent for GMO trade to occur – can effectively shift the burden away from GMO exporting countries of seeking out such necessary information for themselves, while not serving to empower potential GMO importing countries to make more informed choices.

In contrast, as the SCBD studies also reveal, categories of information that would in principle facilitate informed choice by potential GMO importing countries are being less than fully divulged to the BCH. Such categories include information about domestic approvals of GMOs in producer countries and associated risk assessments upon which approvals are based, as well as unintended or illegal releases of GMOs (CBD, 2008a: 3-4<sup>10</sup>), categories of information most sought after by developing countries from GMO producing countries during negotiation of the Cartagena Protocol (Bail et al, 2002).

With relatively little such information being provided to the BCH, however, the main purpose of current BCH disclosure appears to be to serve as a global clearinghouse of information about domestic biosafety rules, regulations and contact persons, information that is of direct relevance for GMO trade to occur, and which thus might, paradoxically, have *market enabling* (rather than *market regulating*) effects for the GMO trade. As a result, I argue here that the normative aim of disclosure in this regime – to inform (and hence empower) potential importing countries, and in so doing further a substantive market regulating aim – risks being turned on its head.

Why is only 28% of the information required to be disclosed to the BCH being provided and how can variation in the categories of information provided be explained? First, a partial but straightforward explanation for lack of disclosure to the BCH (and of some categories of information in particular) is that certain information required to be provided simply does not yet exist in many countries. This is, however, more likely to be the case for information that is required to be provided by potential *importing* countries, such as domestic regulations to govern GMO imports or domestic decisions taken with regard to such trade. Where specific regulations or decisions have not yet been developed or taken, such information is unavailable to be provided to the BCH. However, other categories of information, particularly those to be provided by GMO producer

<sup>10</sup> See also Clapp 2007 on lack of voluntary disclosure of such information through private voluntary information disclosure initiatives, such as the Global Reporting Initiative.

countries, such as domestic approvals of specific GMO varieties, risk assessments done, or information about much publicized incidences of illegal releases, clearly does exist but is not being comprehensively divulged to the BCH (CBD, 2008a: 3-4).

The dominant explanation for this lies in *who* is currently obliged to provide information to the BCH. According to the SCBD reports, many industrialized countries claim that they have provided comprehensive information to the BCH and have encountered relatively few constraints in doing so (CBD, 2008a:3). Yet this captures mainly those industrialized countries who are Parties to the Protocol (mainly countries of the European Union) and these countries are predominantly potential GMO importing countries. Industrialized GMO *exporting* countries, such as the United States, Australia and Canada, are not legally obliged to provide information to the BCH, given that they are not Parties to the Protocol. Therefore, what (limited) information exists on the BCH from these countries has been provided voluntarily.

Under such circumstances, with industrialized (exporting) countries not legally required to provide information and industrialized (importing) countries claiming to have provided information, the focus of global debate and action, and the burden of disclosure to the BCH has shifted, ironically, to *developing country* Parties to the Protocol, most of who are potential GMO importing countries. As a result, categories of information likely to be of greatest relevance for them are being less disclosed, even as the burden to disclose shifts to them, with all the attendant consequences of this noted above.

Such a shift in the burden of disclosure from exporting to importing countries is not, moreover, simply the result of the main exporting countries remaining outside the Cartagena Protocol regime. It is, I argue here, receiving added impetus from the UNEP-GEF Capacity Building project launched to help developing countries “participate effectively” in the BCH<sup>11</sup>. This project equates “effective participation” with meeting the legal obligation on (developing) countries to fulfill their obligations to disclose information to the BCH. Such a framing of ‘effective participation’ reinforces the shift in focus to importing country disclosure already underway within this regime. I explore the role of the UNEP-GEF Project in shaping the practices of developing country disclosure to the BCH next.

### 3.2. *Disclosing information to the BCH: elevating means over ends?*

Developing country experiences with information disclosure to the BCH are inextricably linked to the UNEP-GEF Project. As revealed in a number of brochures and other project documents, a primary emphasis of the UNEP-GEF Project is on ensuring that developing countries provide information to the BCH. As stated in the UNEP-GEF Project brochure: “All countries have obligations under the Protocol to make information available through the BCH, but they can also derive important benefits from using the BCH...” (UNEP-GEF, undated, 9). Reference is also made here to the brochure’s

<sup>11</sup> It should be noted that industrialized country Parties *and* non-Parties to the Protocol are providing financial and other assistance to the UNEP-GEF Project. This includes potential GMO importing and exporting countries. In fact, the UNEP-GEF BCH project is only a small component of a much larger UNEP-GEF supported capacity building effort underway worldwide to aid countries in developing domestic biosafety frameworks, with the US taking a leadership role. This highlights the need to scrutinize the global politics of capacity building and their inter-linkages with the norms and practices of global GMO and risk governance.

Annex 2, which “provides a minimum list of information Parties are required to provide to the BCH (ibid, 7). Although benefits receive mention, a central concern is fulfillment of obligations, as also evident in the UNEP-GEF Project’s key requirement that each participating country develop “a long-term strategy for sustaining national participation in the BCH and fulfilling its obligations under the Cartagena Protocol” (ibid, 15).

Analysis of its activities reveals, furthermore, that an overriding focus of the UNEP-GEF Project to date has been on identifying and putting into place the appropriate technical *means* by which developing countries can disclose information to the BCH. As stated in the project brochure, “...in order to comply with these [disclosure] obligations and to take advantage of information sharing through the BCH, countries will need to have a minimum level of information technology infrastructure and technical capacity, including equipment, tools and practical know-how. Building this capacity in developing countries will be a major challenge to the success of the BCH” (UNEP-GEF, undated, 9).

As a result, the UNEP-GEF project has expended significant effort and resources on ensuring that countries develop the technical means to disclose information to the BCH. The assumption is that putting into place an appropriate technical means of disclosure is the primary challenge facing developing countries and the central hurdle to their ‘effective participation’ in the BCH. While a concern with means of disclosure is justified, excessive focus on designing appropriate means of disclosure risks sidelining a focus on *ends* (and whose ends) disclosure is intended to further. I analyze whether this is the case by examining debates and practices relating to the means of BCH disclosure as these have evolved in the project over the last few years.

A variety of options for information provision to the BCH are offered to countries participating in the UNEP-GEF project. Countries select an option when signing a Memorandum of Understanding (MoU) with the Project, which is then implemented with financial and technological assistance from it. As offered by the UNEP-GEF project, countries can choose between three different means of providing their biosafety information to the BCH, each more technologically sophisticated than the previous. These include: first, a *Direct Input* option (entering information directly into the BCH Central Portal); second, a *Pull* option, whereby the BCH Central Portal pulls information from a national web server; and third, a *Push* option, whereby information is pushed from a national web server onto the BCH<sup>12</sup>.

The simplest of these options to implement is ‘Direct Input’ followed by the Pull and Push options. The more technologically complex Pull and Push options require not only existence and maintenance of national web servers and domestic biosafety databases but also compatibility with the BCH Central Portal’s means by which to push or pull information from national web servers<sup>13</sup>. Thus, the options vary significantly in the technological, financial and human resources required for their functioning and sustenance in the long run.

The choices that countries are making with regard to these technical options are analyzed here through examining 91 MoUs that countries have signed with the UNEP-

<sup>12</sup> For those not in a position to use an internet based online information provision method at all, a fourth option is to send information by post, fax, email or CD-ROM to the Secretariat.

<sup>13</sup> These means of information provision are not mutually exclusive. Countries can choose to pursue more than one simultaneously or to provide some data via one means and the remainder via another.

GEF Project, which detail (to greater or lesser extent) the rationales for country choices<sup>14</sup>. Analysis of these MoUs reveals that a majority of the 91 countries (58 in total) selected 'Direct Input to the BCH Central Portal' as their preferred means by which to provide information to the BCH. From a range of reasons offered by these countries, two distinct sets of rationales are identifiable. The first, offered by most countries, is that this is the only technologically and financially viable means of disclosure for the foreseeable future, given that it does not require complex ICT tools or expertise, and can be sustained beyond the life of the UNEP-GEF Project. These countries thus highlight that their chosen means of information disclosure to the BCH is simple and easy to maintain, with no need for costly investments or domestic biosafety databases. Underlying this is, arguably, the recognition that disclosing information to the BCH should not be technically or financially onerous for developing countries, most of whom are potential GMO importing rather than exporting countries.

A second rationale, but one offered by fewer countries, is that a technologically advanced means of providing information to the BCH is not necessary currently. For these countries, direct input of information to the BCH Central Portal is an efficient and sufficient way to provide information to the BCH, even if the infrastructure and capacity to operate a more technologically sophisticated information sharing system were feasible for the country. Some of these countries explicitly note that the information to be placed on the BCH is too minimal currently to merit technologically sophisticated means of information provision. This is likely to be the case for the vast majority of developing countries currently called upon to disclose information to the BCH, whether explicitly stated or not in an MoU.

The remaining 33 of the 91 countries chose the more technologically complex Pull or Push options as their preferred means by which to provide biosafety information to the BCH. As reflected in the MoUs, two distinct sets of rationales can again be identified for this choice. The first is that a country is technically advanced and capable of implementing its chosen technical option, with necessary infrastructural and other components already in place, such as domestic biosafety databases and a national web server. A second is that, although a country does not currently have the technological or human resource capacity to implement the option, it wants to develop such capacity, partly via assistance from the UNEP-GEF project. Particularly for this latter group, it is clear that a desired end, quite apart from the legal obligation to provide information to the BCH, is development of domestic technological capacity, acquisition of infrastructure and ICT-related training via the UNEP-GEF project.

For some others within the sub-set of countries choosing the more complex options, one explicit additional rationale was the desire to also have a *national* biosafety website, in addition to providing information to the BCH. A key dilemma for countries that may have preferred to select the technologically simpler Direct Input option (particularly in early stages of the UNEP-GEF project) was that such a choice appeared to preclude the possibility of having a national biosafety website, since it required only direct input of data into the BCH Central Portal and did not require domestic biosafety databases or national servers.

This situation has changed with the development by the SCBD of two software applications, Hermes and Ajax Plug-In, that go hand-in-hand with the simplest Direct

<sup>14</sup> For a detailed report which also provides information on a per country basis, see Gupta2008b.

Input option and permit a country to have a national biosafety webpage without domestic web-linked databases or national servers and without having to input information twice<sup>15</sup>. In contrast to the earlier situation where selecting the Direct Input option might have implied foregoing a national website, a reason to select this option for countries signing MoUs recently is the possibility to have such a national website, while retaining the other advantages (low maintenance, low cost and sustainability) of the Direct Input option.

This changing context is now influencing country choices. One consequence has been that some countries that initially selected the more technologically challenging Push or Pull options are switching to the simpler “Direct Input” option instead. Countries switching to the simpler option are from all regions, including Africa, Asia, the Caribbean, Latin America and Central and Eastern Europe. In addition to the possibility of having a national website with the Direct Input Option, this switch is also related to a growing realization by countries of the excessive financial and human resource costs associated with development and maintenance of Pull or Push options, as well as a realization that the paucity of biosafety information currently available to be provided to the BCH does not merit such elaborate and technologically complex national support systems for disclosure<sup>16</sup>.

The discussion above reveals that much attention in the UNEP-GEF project has been directed to selecting and implementing a technical means of disclosure. It is also evident, moreover, that this has been a learning process both for developing country participants and the UNEP-GEF Project over time, whereby it has rapidly become clear that the slew of options offered initially (particularly the Pull and Push options) were too complex, too resource intensive and/or unnecessary in order to meet (developing country) desired ends of disclosure. The CBD Secretariat’s attempt to develop software that could be used alongside the simplest technical option but still meet the expressed desire of countries to have a national website reflects this learning process, as well as the intent to respond to developing country needs. Nonetheless, the overriding focus is on operationalizing a specific technical means of disclosure and on developing country legal obligations to disclose information to the BCH.

In light of this, it becomes important to consider what the experiences have been of such countries in actually providing information to the BCH, going beyond selecting the technical means for disclosure. Analysis of an author-administered questionnaire completed during regional workshops of the UNEP-GEF Project reveal a whole slew of hurdles that prevent comprehensive information disclosure to the BCH by most developing countries, even of categories of information that currently do exist in these countries and even if simple means of disclosure have been selected. These constraints to developing country information disclosure are addressed below.

<sup>15</sup> Hermes and Ajax Plug-In work not by pulling or pushing country data from a national database/server to the BCH Central Portal (as do Pull or Push options) but by enabling the flow of data in the opposite direction – i.e. they permit the construction of simple country web-pages which can display (and automatically update) the data that a country has already directly entered into the BCH Central Portal. Detailed information about Hermes and Ajax Plug-In is available at: <http://bch.cbd.int/resources/solutions/>

<sup>16</sup> These observations draw on information contained in the MoUs as well as on informal semi-structured interviews conducted by the author during UNEP-GEF regional workshops in April 2008.

### 3.3. Disclosing information to the BCH: constraints to information provision

As noted in recently completed SCBD analyses of the functioning of the BCH (CBD, 2008a; 2008b; 2008c), a number of factors prevent timely, adequate and up-to-date provision of information to the BCH, particularly by developing countries. These factors, listed in country implementation reports, include “poor internet connectivity; slow response time from stakeholders; insufficient financial and human resources; lack of coordination among different departments; and insufficient public participation” (CBD, 2008b:9).

Analyzing the responses of developing country participants to the questionnaire on “constraints to provision of information” permits us to go beyond the above general observations<sup>17</sup>. Questionnaire respondents were asked to identify constraints to information provision that they faced and to specify constraints as technical, administrative, political and information-related. Clearly, these categories are neither mutually exclusive nor strictly separable. Nonetheless, positing such distinctions was intended to encourage respondents to go beyond generalities and be as specific as possible.

The most oft-mentioned *technical constraints* facing countries included a lack of requisite infrastructure, lack of internet connectivity or its high cost, lack of technically skilled personnel or inadequate power sources and lack of an overall infrastructure for information generation and provision to the BCH. *Administrative-bureaucratic constraints* included lack of coordination among relevant government departments and unclear delineation and division of responsibilities. Such lack of coordination could be related to the fact that existing personnel and departments were overtaxed, with many competing projects demanding attention, even as each institutional authority sometimes wanted sole oversight over the BCH. Changes in bureaucratic personnel also caused coordination problems and delays. Another administrative challenge was that biosafety was an esoteric subject that was not mainstreamed into domestic environmental policy.

Perceived *political constraints* included a lack of priority or support for biosafety issues, the Cartagena Protocol or the BCH nationally and lack of public awareness about the BCH. As some noted, limited domestic activity on GMOs resulted in lack of government priority for the issue, exacerbated by the fact that many countries have only recently ratified the Cartagena Protocol (sometimes only because ratification or a commitment to ratification is a prior condition to receiving capacity building support). In contrast to lack of interest, an opposite political constraint was that biosafety was a polarizing issue domestically, as seen from contentious debates over development of a national biosafety law. Other noted constraints included lack of stakeholder involvement in the BCH or the fact that only technical stakeholders were involved rather than other actors such as the media and the public.

*Information-related* constraints included, first and foremost, that much required biosafety information simply did not exist in many countries, either because national biosafety laws had only just been developed or because no decisions on GMOs had been taken domestically. Or information existed but was hard to find, due to lack of cooperation between government departments or because available information had not been cleared for publication or remained classified or existed in a form difficult to provide

<sup>17</sup> This section is based on responses to the questionnaires (on file with author). A detailed analysis of these questionnaires is contained in Gupta 2008b, a report prepared for the UNEP-GEF Project.

(because it was in a non-UN language or only available as a hard copy or on diskette). Finally, those possessing relevant information were sometimes simply unaware of the existence of the BCH and of the country's obligation to provide various categories of information to it.

The discussion above highlights that despite the 91 MoUs signed with the UNEP-GEF project, each of which specifies how a country will provide information to the BCH, many developing countries are struggling to implement their selected option and significant impediments remain in the ability of countries to provide information to the BCH. The analysis reveals, furthermore, that these impediments are not simply a matter of inadequate capacity or technical expertise. Instead, constraints can be related as much to policy contexts and competing priorities as to technical and infrastructural issues. It thus highlights that overriding concern with means of information disclosure, in the absence of considering whose needs will be met, is unlikely to be empowering. Focusing, as does the UNEP-BCH project, on having developing countries provide updated, comprehensive and "accurate" information – via a suitable technical means – is unlikely to help empower countries to make "better" or more informed decisions<sup>18</sup>.

If so, it suggests that a shift in focus – from ensuring that developing countries meet their obligations to provide information to the BCH to how such countries can *benefit* from the BCH – is a prerequisite to meeting originally intended aims of disclosure. This implies that concern with *constraints to BCH disclosure* – a focus of much global-level discussion at biannual Protocol Meetings of the Parties– needs to be accompanied by analyses of *who* is using BCH information, in order to gain further insight into the varied constituencies the BCH is serving and who benefits from the information currently available on it.

#### **4. Conclusion: Ensuring Biosafety through Disclosure?**

The intent of information disclosure in the Cartagena Protocol is to empower potential importing countries to make informed choices about GMOs that might enter their borders and thereby facilitate regulatory oversight of GMO trade. The analysis above shows that from such an initial framing of the normative, procedural and substantive goals of disclosure, with the main intended beneficiaries being developing countries, the burden of disclosure has shifted in practice onto such countries. Given that most developing countries are potential GMO importers, the information they can provide is, however, more likely to be of direct relevance to GMO exporters and may even be market enabling with regard to the GMO trade. This turns on its head the originally intended aims of disclosure. If so, I conclude that information disclosure as currently institutionalized through the BCH is unlikely to either sufficiently inform or empower potential importing countries to make informed choices and hence to ensure regulatory oversight over incoming GMO transfers.

<sup>18</sup> This claim is in contrast to an oft-persisting assumption that information can help to "rationalize" decision-making, a claim aligned with the call by some for evidence-based environmental governance (for an argument that information can play such a rationalizing role in environmental decision-making, see Esty, 2003)

The analysis thus highlights that transparency's potential to empower and effect change is centrally linked, as Mason (2008) also reminds us, to the question of "transparency for whom"? The governance by disclosure case analyzed here has addressed mandatory state-to-state disclosure via a globally negotiated agreement in a contested and unequal North-South context. The question of "transparency for whom" is equally pressing in proliferating private voluntary disclosure initiatives, such as the Global Reporting Initiative or Carbon Disclosure Project (Brown et al 2009; Pattberg and Enechi 2009). Emerging research on these disclosure initiatives suggests that notwithstanding elaborate, time consuming and resource intensive efforts to generate large amounts of data and disclose it, the utility to intended beneficiaries of disclosed information is often minimal (Kolk et al, 2008).

Whether, in fact, there are takers for disclosed information and the purposes to which disclosed information is put remain fundamental aspects of assessing the effectiveness of governance-by-disclosure, to which continued future research must be directed. The analysis in this paper makes clear that information disclosure is unlikely to rationalize debate or the decision-making process. Rather, its transformative potential lies in its ability to readdress existing vulnerabilities and inequalities and in what ends (and whose) it ultimately furthers.

If so, the question of how best to *design* information disclosure systems (to which much attention is also devoted in a national context, see, for e.g. Graham, 2002) has to be considered in this light. As revealed here, governance by disclosure can become a resource intensive search for elaborate technological infrastructures and disclosure support systems. But such an endeavor is doomed to fail if it exacerbates rather than alleviates inequalities in access to information or in its relevance and usability for those it is meant to empower.

In concluding this analysis, it is important to consider if the varied aims of disclosure would have been realized *even if* all categories of information *were* disclosed to the BCH, also by GMO exporting countries. The litany of hurdles to disclosing information to the BCH in developing countries makes clear that it is not (only) a lack of information that is preventing adequate regulatory oversight of GMO use. Domestic GMO trade choices are influenced by a complex mix of global trade relationships and varying national economic and agricultural priorities and perspectives on risk (see, for e.g. Falkner and Gupta, 2009).

So where does that leave governance by disclosure? Clearly, transparency alone is no panacea in the search for legitimate and effective global governance. But is it, as a scholar of science and technology studies provocatively suggests, a 'red herring'? (Brown, 2002) As Brown and many others have suggested, one response to a perceived crisis of trust in dominant governance institutions, including science, is a demand for greater transparency and accountability and, by extension, greater trust in both public and private decision-making processes and outcomes. A widespread and often unquestioned assumption of such reasoning is that transparency can build trust. Brown argues, however, that this is unlikely because "it is quite possible that the causes of mistrust have nothing to do with how much or how little information is made available. Rather, transparency might well be the 'red herring', so to speak, of modern political culture" (Brown, 2002:1).

The analysis here (partially) supports such a claim, insofar as it shows that how disclosure is designed and how it will function in practice (including how much or how

little information is revealed and by whom) is fundamentally related to larger political-economic and normative conflicts in global GMO governance and beyond. Such a broader context shapes whether and how transparency in practice might diverge from transparency in theory; and how the normative rationales for transparency might vary to begin with. In the global GMO domain, a right to know as a governance norm is, as the analysis here also implies, fundamentally contested and hence incompletely institutionalized, with powerful GMO producing countries remaining outside the Cartagena regime.<sup>19</sup>

If transparency's transformative potential is related to the broader political economic and normative underpinnings of global governance, then it follows that these need to be a crucial component of governance by disclosure analyses. Bernstein (2002) posits, for example, the dominance of the norms of "liberal environmentalism" in a global environmental context, wherein unfettered global markets, for example, are seen as critical to effective environmental governance. He suggests further that the "degree to which [governance] measures stray from such norms, agreement or the ability to implement [them] will be difficult and conflict-laden" (2002, 7). The finding here that BCH disclosure may, in practice, have market enabling rather than market regulating effects supports such a view, as does the finding of a shift in the burden of BCH disclosure from industrialized (GMO exporting) to developing (GMO importing) countries.

The dominance of liberal environmentalism does not, however, go unchallenged, leaving normative change as an ever present possibility. As Bernstein suggests, this can be either because contradictions inherent in a given set of norms (and the institutions premised upon them) can be exploited by those desiring change; or because outcomes flowing from liberal environmentalism are ultimately disappointing for global environmental governance (2002, 13-14). If so, transparency, it would appear, is particularly well placed to recast both entrenched and contested global norms and practices, given its assumed link to "good governance", due process and its potential status as an emerging "constituent principle" of global governance (Picciotto, 2000). Assessing the relationship between transparency as an increasingly potent norm of global governance itself, versus its institutionalization in practice within global environmental governance, is a key area for future global governance research.

<sup>19</sup> For an analysis of how conflicting normative interpretations of this regime's governance aims shapes disclosure and its consequences for GMOs in the bulk agricultural commodity, see Gupta (in preparation).

## References

- Bail C, Falkner R, Marquard H, Eds 2002 *Cartagena Protocol on Biosafety: Reconciling Trade in Biotechnology with Environment and Development?* (Earthscan, London)
- Bäckstrand K, 2006, "Multi-stakeholder Partnerships for Sustainable Development. Rethinking Legitimacy, Accountability and Effectiveness", *European Environment* **16** (5) 290-306
- Beierle T, 2004, "The Benefits and Costs of Disclosing Information about Risks: What do we know about Right-to-Know?" *Risk Analysis* **24** (2) 335-346
- Bernstein S, 2002, "Liberal Environmentalism and Global Environmental Governance" *Global Environmental Politics* **2** (3) 1-16
- Biermann F, 2002, "Institutions for scientific advice: Global environmental assessments and their influence in developing countries" *Global Governance* **8**(2) 195-219
- Biermann F, 2007, "Earth system governance' as a crosscutting theme of global change research" *Global Environmental Change* **17** 326-337
- Brown H, de Jong M, Levy D, 2009, "Building institutions based on information disclosure: Lessons from GRI sustainability reporting" *Journal of Cleaner Production* **17** (6) 571-580
- Brown N, 2002, *Transparency – the very idea* Paper presented at the Royal Society for the Arts seminar on Transparency in Public and Corporate Life, UK 19 Sept 2002
- CP [Cartagena Protocol] 2000, *Cartagena Protocol on Biosafety* Adopted 2000 under the Convention on Biological Diversity At: <http://www.cbd.int/biosafety/protocol.shtml>
- CBD [Convention on Biological Diversity] 2008a *Monitoring and Reporting Under the Protocol (Article 33): Analysis of information contained in the first national reports* Note by the Executive Secretary. UNEP/CBD/BS/COP-MOP/4/13, 4 February
- CBD [Convention on Biological Diversity] 2008b. *Operation and Activities of the Biosafety Clearing House* Note by the Executive Secretary UNEP/CBD/BS/COP-MOP/4/3, 29
- CBD [Convention on Biological Diversity] 2008c. *Report of the 2007 Survey of Biosafety Clearing-House Users*. Note by Executive Secretary. UNEP/CBD/BS/COP-MOP/4/INF/20, 3 March
- Clapp J, 2007, "Illegal GMO releases and corporate responsibility: questioning the effectiveness of voluntary measures" *Ecological Economics*, **66**(2-3) 348-358
- Chan S, Pattberg P, 2008, "Private Rule-Making and the Politics of Accountability: Analyzing Global Forest Governance" *Global Environmental Politics* **8**(3)103-121
- Dingwerth K, 2007 *The New Transnationalism: Transnational Governance and Democratic Legitimacy*. (Palgrave, Basingstoke)
- Dryzek J, 1999, "Transnational Democracy" *The Journal of Political Philosophy*, **7**(1) 30-51
- Esty D, 2003 *Environmental Protection in the Information Age*. Yale Law School Research Paper Series, paper no. 58. At: <http://papers.ssrn.com/abstract=429580>

- Essex J, 2008, "Biotechnology, sound science, and the Foreign Agricultural Service: a case study in neoliberal rollout" *Environment and Planning C: Government and Policy* **26** 191-209
- EEA [European Environment Agency], 2001 *Reporting on environmental measures: Are we being effective?* Environmental issue report No 25, EEA
- Falkner R, Gupta A, 2009, "Limits of Regulatory Convergence: globalization and GMO politics in the South" *International Environmental Agreements* **9** (2) 113-133
- Falkner R, 2000, "Regulating Biotech Trade: The Cartagena Protocol on Biosafety" *International Affairs* **76**(2) 299-313
- Florini A, 1998, "The End of Secrecy" *Foreign Policy* **111** (Summer) 50-63
- Florini A, Ed 2007 *The Right to Know: Transparency for an Open World* (Columbia University Press, New York)
- Florini A, 2008, "Making Transparency Work" *Global Environmental Politics* **8**(2) 14-16
- Fung A, Graham M, Weil D, 2007 *Full Disclosure: The Perils and Promise of Transparency* (Cambridge University Press, Cambridge)
- Graham M, 2002 *Democracy by Disclosure: the Rise of Technopopulism* (Brookings Institution Press, Washington D.C)
- Gouldson A, 2004, "Risk, Regulation and the Right to Know: Exploring the Impacts of Access to Information on the Governance of Environmental Risk" *Sustainable Development* **12** 136-149
- Gulbrandsen L, 2008, "Accountability arrangements in non-state standard organizations: instrumental design and imitation" *Organization* **15**(4) 563-583
- Gupta A, 2000, "Governing Trade in Genetically Modified Organisms: the Cartagena Protocol on Biosafety" *Environment* **42** (4) 23-33
- Gupta A, 2004, "When Global is Local: Negotiating Safe Use of Biotechnology" in *Earthy Politics: Local and Global in Environmental Governance* Eds S Jasanoff, M Long-Martello (MIT Press, Cambridge) pp 127-148
- Gupta A, 2006, "Problem Framing in Assessment Processes: the Case of Biosafety" in *Global Environmental Assessments: Information and Influence* Eds R Mitchell, W Clark, D Cash, N Dickson (MIT Press, Cambridge) pp 57-86
- Gupta A, Falkner R, 2006, "The Influence of the Cartagena Protocol on Biosafety: Comparing Mexico, China and South Africa" *Global Environmental Politics* **6** (4) 23-55
- Gupta A, 2008a, "Transparency Under Scrutiny: Information Disclosure in Global Environmental Governance" *Global Environmental Politics* **8** (2) 1-7
- Gupta A, 2008b, *Effective Participation in the Biosafety Clearing House: Participation Options and Impediments to Information Provision*. A report prepared for the UNEP-GEF Biosafety Clearing House Capacity Building Project, Geneva. Available at: <http://www.enp.wur.nl/UK/scienceforimpact/Technical+reports/>
- Gupta A, in preparation, "Transparency as Contested Political Terrain: Who knows What about the Global GMO trade and Why does it Matter?" On file with author.
- Jansen K, 2008, "The Unspeakable Ban: The Translation of Global Pesticide Governance into Honduran National Regulation" *World Development* **36**(4) 575-589
- Jansen K, Gupta, A, 2009, "Anticipating the future: 'Biotechnology for the poor' as unrealized promise?" *Futures* **41**(7) 436-445

- Jasanoff S, 1990 *The Fifth Branch: Science Advisors as Policy Makers* (Harvard University Press, Cambridge) Jasanoff, S, Ed, 2004 *States of Knowledge: the Co-Production of Science and Social Order* (Routledge)
- Keohane R, 2006, "Accountability in World Politics" *Scandinavian Political Studies* **29** (2) 75-87
- Kolk A, Levy D, Pinkse J, 2008, "Corporate Responses in an Emerging Climate Regime: The Institutionalization and Commensuration of Carbon Disclosure" *European Accounting Review* **17**(4) 719-745
- Konar S, Cohen M, 1997, "Information as Regulation: The Effect of Community Right to Know Laws on Toxic Emissions" *Journal of Environmental Economics and Management* **32** 109-124
- Langley P, 2001, "Transparency in the Making of Global Environmental Governance" *Global Society* **15** (1) 73-92
- Levidow L, Carr S, 2007, "Europeanising advisory expertise: the role of 'independent, objective, and transparent' scientific advice in agri-biotech regulation" *Environment and Planning C: Government and Policy* **25** 880 – 895
- Lieberman S, Gray T, 2008, "GMOs and the Developing World: A Precautionary Interpretation of Biotechnology" *British Journal of Politics & International Relations* **10**(3) 395 - 411
- Lord K, 2006 *The Perils and Promise of Global Transparency* (SUNY, New York)
- MacDonald S, 1998, "Transparency in Thailand's 1997 Economic Crisis: The significance of Disclosure" *Asian Survey* **38** (7) 688-702
- Mason M, 2005 *The New Accountability: Environmental responsibility across borders*. (Earthscan, London)
- Mason M, 2008, "Transparency for Whom? Information Disclosure and Power in Global Environmental Governance" *Global Environmental Politics* **8**(2) 8-13
- Mitchell R, 1998, "Sources of Transparency: Information Systems in International Regimes" *International Studies Quarterly* **42** 109-130
- Mol A, 2006, "Environmental governance in the Information Age: the emergence of informational governance" *Environment and Planning C: Government and Policy* **24** 497-514
- Mol A, 2008 *Environmental Reform in the Information Age: the contours of informational governance* (Cambridge University Press, Cambridge)
- Newell P, 2003, "Globalization and the Governance of Biotechnology" *Global Environmental Politics* **3**(2) 56-71
- Newell P, 2005, "Citizenship, accountability and community: the limits of the CSR agenda" *International Affairs* **81**(3) 541-557
- Pattberg P, Enechi O, 2009, "The Business of Transnational Climate Governance: Legitimate, Accountable, and Transparent?" *St Anthony's International Review* **5**(1) 76-98
- Pattberg P, 2007 *Private Institutions and Global Governance. The New Politics of Environmental Sustainability* (Cheltenham, UK: Edward Elgar)
- Picciotto S, 2000, Democratizing the New Global Public Sphere. Working Paper, Lancaster University. Available at <http://www.lancs.ac.uk/staff/lwasp/demglobpub.pdf>
- Rowen-Robinson A, Walton W, Rothnie J, 1996, "Public Access to Environmental Information: A Means to What End?" *Journal of Environmental Law* **8**(1) 19-42

- Soederberg S, 2001, "Grafting stability onto Globalization? Deconstructing the IMF's recent bid for transparency" *Third World Quarterly* **22**(5) 849-864
- Stephan M, 2002, "Environmental information disclosure programmes: they work but why?" *Social Science Quarterly* **83** 190-205
- Stasavage D, 2003, "Transparency, Democratic Accountability and the Economic Consequences of Monetary Institutions" *American Journal of Political Science* **47**(3) 389-402
- UNEP-GEF, [Undated] *Building Capacity for Effective Participation in the Biosafety Clearing-house (BCH) of the Cartagena Protocol on Biosafety* UNEP-GEF BCH Project Brochure, UNEP-GEF Biosafety Unit, Geneva, Switzerland
- van den Burg S, 2004, "Informing or Empowering? Disclosure in the United States and the Netherlands" *Local Environment* **9**(4) 367-381
- van Kersbergen K, van Waarden F, 2004, " 'Governance' as a bridge between disciplines: Cross-disciplinary inspiration regarding shifts in governance and the problems of governability, accountability and legitimacy" *European Journal of Political Research* **43** 143-171
- Young O (ed.), 1999 *The Effectiveness of International Environmental Regimes: Causal Connections and Behavioral Mechanisms* (MIT Press, Cambridge)

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    Appeared in parts and revised in *Global Environmental Change: Human and Policy Dimensions* 17: 3–4 (2007), 326–337.
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    Appeared revised in *Climate Policy* 5 (2005), 273–290.

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- 15 *Managers of Global Governance. Assessing and Explaining the Influence of International Bureaucracies.* By Frank Biermann and Steffen Bauer. Global Governance Working Paper No 15. 2005.
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- 13 *Does Effective International Environmental Governance Require a World Environment Organization? The State of the Debate Prior to the Report of the High-Level Panel on Reforming the United Nations.* By Steffen Bauer and Frank Biermann. Global Governance Working Paper No 13. 2004.  
 Reprinted excerpts from Frank Biermann and Steffen Bauer, editors. 2005. *A World Environment Organization: Solution or Threat for Effective International Environmental Governance?* Aldershot (UK): Ashgate.
- 12 *Global Environmental Governance. Conceptualisation and Examples.* By Frank Biermann. Global Governance Working Paper No 12. 2004.  
 Appeared revised in *International Environmental Politics*, edited by M. M. Betsill, K. Hochstetler and D. Stevis. Basingstoke: Palgrave Macmillan, 2006, 237–261.
- 11 *Proceedings of the 2002 Berlin Conference on the Human Dimensions of Global Environmental Change: ‘Knowledge for the Sustainability Transition. The Challenge for Social Science’.* Edited by Frank Biermann, Sabine Campe and Klaus Jacob. 2004. ISBN 3-00-014956-2.
- 10 *Europe and Multipolar Global Governance. India and East Asia as New Partners?* By Frank Biermann and Hans-Dieter Sohn. Global Governance Working Paper No 10. 2004.
- 9 *The Institutionalisation of Private Governance: Conceptualising an Emerging Trend in Global Environmental Politics.* By Philipp Pattberg. Global Governance Working Paper No 9. 2004.  
 Appeared revised in: *Governance. An International Journal of Policy, Administration, and Institutions* 18: 4 (2005), 589–610.
- 8 *International Organisations as Learning Agents in the Emerging System of Global Governance. A Conceptual Framework.* By Bernd Siebenhüner. Global Governance Working Paper No 8. 2003.

- 7 *The Changing Role of Nation States in International Environmental Assessments*. By Bernd Siebenhüner. Global Governance Working Paper No 7. 2003.  
 Appeared revised in: *Global Environmental Change* 13 (2003), 113–123.
- 6 *Globale Politiknetzwerke und ihre demokratische Legitimation* [The democratic legitimacy of global public policy networks]. By Klaus Dingwerth. Global Governance Working Paper No 6 (German version). 2003.  
 Appeared in: *Zeitschrift für Internationale Beziehungen* 10: 1 (2003), 69–109.
- The Democratic Legitimacy of Global Public Policy Networks. Analysing the World Commission on Dams*. By Klaus Dingwerth. Global Governance Working Paper No 6 (English version). 2003.  
 Appeared revised in: *Global Governance* 11: 1 (2005), 65–83.
- 5 *Implementing the Kyoto Protocol Without the United States: The Strategic Role of Energy Tax Adjustments at the Border*. By Frank Biermann and Rainer Brohm. Global Governance Working Paper No 5. 2003.  
 Appeared shortened and revised in *Climate Policy* 4: 3 (2005), 289–302.
- 4 *Global Environmental Change and the Nation State: Proceedings of the 2001 Berlin Conference on the Human Dimensions of Global Environmental Change*. Edited by Frank Biermann, Rainer Brohm and Klaus Dingwerth. PIK Report No 80. 2002.  
 Selected articles appeared as special issue of *Global Environmental Politics* 4: 1 (2004), 1–114 (edited by Frank Biermann and Klaus Dingwerth).
- 3 *Strengthening Green Global Governance in a Disparate World Society: Would a World Environment Organization Benefit the South?* By Frank Biermann. Global Governance Working Paper No 3. 2002.  
 Appeared revised in: *International Environmental Agreements* 2:4 (2002), 297–315.
- 2 *Weltumweltpolitik: Global Change als Herausforderung für die deutsche Politikwissenschaft* [World environmental policy: Global change as a challenge for German political science]. By Frank Biermann and Klaus Dingwerth. PIK Report No 74. 2001.  
 Appeared revised and shortened in *Zeitschrift für Umweltpolitik und Umweltrecht* 4 (2004), 505–29.
- 1 *The Rising Tide of Green Unilateralism in World Trade Law: Options for Reconciling the Emerging North-South Conflict*. By Frank Biermann. PIK Report no 66. 2000.  
 Appeared revised in *Journal of World Trade* 35: 3 (2001), 421–48.

