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**EPISTEMIC SELECTIVITIES AND THE VALORISATION OF NATURE: THE CASES OF  
THE NAGOYA PROTOCOL AND THE INTERGOVERNMENTAL SCIENCE-POLICY  
PLATFORM FOR BIODIVERSITY AND ECOSYSTEM SERVICES (IPBES)**

Ulrich Brand and Alice B.M. Vadrot

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## ARTICLE

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# 1

## INTRODUCTION

Despite worldwide recognition that the loss of biodiversity must be stopped due to the enormous and interrelated problems it is causing – from the destruction of local livelihoods and potential resources for the development of drugs and seeds to implications for climate change and, not least of all, the intrinsic value of biological diversity<sup>1</sup> – efforts to achieve the target of halting the loss of biodiversity have failed.<sup>2</sup> At the Conference of the Parties to the Convention on Biological Diversity (CBD) in Nagoya in October 2010, it had to be acknowledged that the ‘2010 target’ – formulated in April 2002 as the aim to reduce the growth rate of biodiversity degradation – was missed. Twenty years after the CBD came into force in December 1993, the existing biodiversity governance system, of which the CBD constitutes a key element, is increasingly pictured as deficient, fragmented, and unstructured.<sup>3</sup> The results of the United Nations Conference on Sustainable Development held in Rio de Janeiro in June 2012 complement this picture. The concept of the ‘Green Economy’ and accompanying reform of the UN structure as a means of reinvigorating international environmental politics and policies represents an awkward attempt to mainstream environmental issues and to remove complex problems at hand. The vision is that economic valuation of natural resources and the development of market-based environmental and new innovative financial policy instruments will contribute to

solving environmental problems without dismissing the idea of economic growth.<sup>4</sup> In this respect, commodification framed in terms of identifying and justifying new financial sources and markets for the protection of nature is a ‘new’ trend in environmental policy-making based on the premise ‘[...] that the natural environment can best be safeguarded by valuing and managing ‘nature’s services’ as tradable commodities’.<sup>5</sup> The concept of ‘Green Economy’ and the proposed market-based policy instruments are attractive to international policymakers because they blame ‘[...] biodiversity destruction on abstractions: ‘market failure’ and ‘policy failures’ [...] [purporting] to provide an objective metric for estimating the values of all components of nature worldwide [...]’.<sup>6</sup>

The coining of the term ‘biodiversity’ by Rosen in 1985 represented a critical point in the development and evolution of biodiversity research, especially with regard to the economic value of biodiversity. More recently the publication of both the *Millennium Ecosystem Assessment* and *The Economics of Ecosystems and Biodiversity* (TEEB) have emphasised the

1 Millennium Ecosystem Assessment, *Ecosystems and Human well-being: General Synthesis* (Washington DC: Island Press, 2005) [hereafter MA 2005] and TEEB, *The Economics of Ecosystems and Biodiversity: An Interim Report* (Cambridge UK: Banson Production, 2008) [hereafter TEEB report].

2 Status of Implementation of Goals 2 and 3 of the Strategic Plan Focusing on Implementation of National Biodiversity Strategies and Action Plans and Availability of Financial Resources: An Overview, UN Doc. UNEP/CBD/WG-RI/2/2 (2007).

3 Benoît Martimort-Asso and Philippe LePrestre, Issues Raised by the International Environmental Governance System (Paris: IDDRI, Working Papers No.12/2004, 2004).

4 UNEP, *Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication* (Nairobi: UNEP, 2011) [hereafter Green Economy Report], World Bank, *Massive Show of Support for Action on Natural Capital Accounting At Rio Summit*, Press Release, 20 June 2012, available at <http://www.worldbank.org/en/news/2012/06/20/massive-show-support-action-natural-capital-accounting-rio-summit>; WBCSD – World Business Council for Sustainable Development, *Vision 2050. The New Agenda for Business* (2012), available at <http://www.wbcsd.org/vision2050.aspx> and for a critique, Ulrich Brand, ‘After Sustainable Development: Green Economy as the Next Oxymoron?’ 21/1 *GAIA - Ecological Perspectives for Science and Society* 28 (2012).

5 Kathleen McAfee and Elizabeth N. Shapiro, ‘Payments for Ecosystem Services in Mexico: Nature, Neoliberalism, Social Movements and the State’ 100/3 *Annals of the Association of American Geographers* 580 (2010).

6 Kathleen McAfee, ‘Selling Nature to Save It? Biodiversity and Green Developmentalism’ 17 *Environment and Planning D: Society and Space* 133, 151 (1999). In a later article, McAfee refers to the term ‘selling nature to save it’ in order to grasp the implications of international payment for ecosystem services (PES) projects financed by biodiversity banking and carbon-offset sales. See Kathleen McAfee, ‘The Contradictory Logic of Global Ecosystem Services Markets’ 43/1 *Development and Change* 105 (2012).

advantages of an anthropocentric view of biodiversity and related research on the interrelations between biodiversity, ecosystem services, and human well-being. In the introduction to the famous book, *Biodiversity*, Edward O. Wilson claims that 'Biodiversity must be treated more seriously as a global resource, to be indexed, used, and above all, preserved'.<sup>7</sup> Some scholars interpret this history to be an indicator of the crucial role of biologists and natural scientists in setting the political agenda on biodiversity and in pointing to the value of biodiversity and the necessity of related research.<sup>8</sup> More recently, a more effective interplay between biodiversity science, policy, and valuation is promoted on both scientific and political terrains as impetus for more effective biodiversity governance and implementation of the CBD. The coupling of these three elements has supplemented the efforts of those arguing that 'IPCC for biodiversity' is likely to contribute to more effective and efficient policy and politics of nature conservation. After seven years of consultations and negotiations, the *Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services* (IPBES) was finally established in April 2012 in Panama as an independent and intergovernmental science-policy interface for strengthening the link between science and policy for biodiversity.<sup>9</sup>

The implementation problems of the CBD are, however, more diverse. It is widely recognised that these relate to the inefficiency of Multilateral Environmental Agreements (MEAs), the overlapping and fragmented structure of the biodiversity governance system, the UN negotiation principles, and the intangible scope of the CBD, especially

regarding the objective to couple the conservation and use of biodiversity with '[...] the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources [...]'<sup>10</sup>. However, an understanding of the underlying causal mechanisms like the political economy of biodiversity and related conflicts requires a more sophisticated understanding of both international biodiversity politics and the relationship between science and policy, i.e. how problem perceptions and framings and the institutions, concepts and instruments developed to 'solve' these problems become accepted and hegemonic. An analysis of underlying causal mechanisms and their theoretical explanation is insofar important and challenging as the process through which the modes of dealing with the ecological crisis become accepted is hegemonically structured and conflictual at the same time. For instance, the discrepancies regarding the expectations of states from the Global North and from the Global South of the impact of the CBD on the realisation of national interests and agendas affect the content, negotiation, and forms of compromises.<sup>11</sup> But, in the end, the CBD's '[...] global economic paradigm pins the fate of diversity on the outcome of competition among economically powerful bidders in the 'global' market who may at best have a temporal interest in the conservation of one or a few elements of diversity exercised from their eco-social context'.<sup>12</sup>

7 Edward O. Wilson ed, *Biodiversity* 3 (Washington: National Academy Press, 1988).

8 David Takacs, *The Idea of Biodiversity: Philosophies of Paradise* 1 (Baltimore: The Johns Hopkins University Press, 1996); Markku Oksanen, 'Biodiversity Considered Philosophically: An Introduction', in Markku Oksanen and Juhani Pietarinen eds, *Philosophy and Biodiversity* 1, 4 (Cambridge: Cambridge University Press, 2004) and Cheryl L. Dybas, 'Biodiversity: The Interplay of Science, Valuation, and Policy' 56/10 *BioScience* 792 (2006).

9 Report of the second session of the plenary meeting to determine modalities and institutional arrangements for an intergovernmental science-policy platform on biodiversity and ecosystem services, 24 January 2012, UN. Doc. UNEP/IPBES/MI/2/9 (2012) [hereafter Panama Outcome].

10 Article 1 of the CBD. Overview in: Ulrich Brand and Christoph Görg, 'Regimes in Global Environmental Governance and the Internationalization of the State: The Case of Biodiversity Politics' 1/1 *International Journal of Social Science Studies* 110 (2013).

11 Ulrich Brand et al., *Conflicts in Environmental Regulation and the Internationalisation of the State. Contested Terrains* (London/New York: Routledge, 2010) and Kristin G. Rosendal, 'The Convention on Biological Diversity: Tensions with the WTO TRIPS Agreement over Access to Genetic Resources and the Sharing of Benefits', in Sebastian Oberthür and Thomas Gehring eds, *Institutional Interaction in Global Environmental Governance: Synergy and Conflict among International and EU Policies* 79 (Cambridge/Massachusetts: The MIT Press, 2006). Note that within the political and public debate of Northern countries, confusion between biological diversity and species conservation remains; c.f. Beate Jessel, 'Zwischen Anspruch und Wirklichkeit. Das Übereinkommen über die biologische Vielfalt und sein Einfluss auf die Naturschutzpolitik' 21/1 *GAIA* 22 (2012).

12 See McAfee, *Selling Nature to Save It*, note 6 above, at 151.

Bearing this in mind, we argue that the regulation of knowledge on biodiversity plays a crucial role in sustaining and implementing this global economic paradigm of valorisation. Hence, the features of international biodiversity politics, which is mainly institutionalised through the CBD, can better be understood when we consider two dimensions:<sup>13</sup> first and quite explicitly, the interplay between biodiversity science, policy, and valorisation in the framework of the CBD in general and the Nagoya Protocol in particular and the problem diagnosis of a too narrow (scientific) knowledge base that has shaped the negotiations leading to the establishment of the IPBES. And, second, the trend towards a further commodification of nature under the auspices of the concept of ecosystem services that 'has reached the highest level of global environmental governance and development policy'.<sup>14</sup>

Against this background, the aim of this article is to analyse the interplay between biodiversity science, policy, and the tendency towards economic valorisation. This is visible in the negotiations leading to the establishment of the IPBES and the Nagoya Protocol by detecting the 'pay to conserve logic' and the explicit and implicit assumption that the valuation of biodiversity leads to better arguments for its conservation and sustainable use from the struggles over meaning and power involved. In order to do so, this article departs from the premises of the strategic-relational approach

assuming that political action takes place under structured conditions, i.e. a strategically selective, pre-existing context, which favour certain strategies over others. This means in our understanding that the knowledge actors have on both the institutional and discursive context within which they act and their interpretation of the means by which the object should be governed to best realise their interest and strategies, is selectively structured. Moreover, the means by which they understand, interpret, and construct this context influences, though selectively, the equally selectively strategic constitution of the underlying structure and the object to be governed.

In order to clarify the role of knowledge and science in policy-making processes, the concept of epistemic selectivities is introduced and serves as an analytical tool that guides the analysis. The concept is based on a specific understanding of selectivities as a political mode of the political economy of international biodiversity politics. It takes (a) the discursive power of 'knowledge and truth' into account as well as the fact that (b) the CBD is part of the internationalised state, which is a mechanism that tends to privilege certain interests and worldviews over others,<sup>15</sup> and, at the same time, creates a terrain to deal with manifold societal and political conflicts. Consequently, we detect important roots of governance ineffectiveness or failure not only in the absence of political will or diverging political interests but also in the contradictory dynamics of modern capitalist economies and societies and more particularly in its tendency towards the commodification of nature as an overall trend and as an often plausible way to deal with problems. Moreover, the political

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13 Of course, actual climate change policies also constitute a platform of discourses and mechanisms to deal with controlling what ought to be governed, e.g. in the Amazon. And, indeed, the development of concepts and instruments shows similarities and overlaps, as in the case of REDD+ (Reducing Emissions from Deforestation and Forest Degradation) and payment ecosystem services (PES), which are market-based environmental policy instruments that both aim to set the financial value of natural resources and processes in order to establish global markets. The overlapping processes which constitute the objects of governance could be a separate research agenda. However, in this article we focus on the CBD and related mechanisms.

14 Jessica Dempsey and Morgan M. Robertson, 'Ecosystem Services: Tensions, Impurities and Points of Engagement within Neoliberalism' 36/6 *Progress in Human Geography* 758 (2012) and Erik Gómez-Baggethun and Manuel Ruiz Pérez, 'Economic Valuation and the Commodification of Ecosystem Services' 35/5 *Progress in Physical Geography* 613 (2012).

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15 For an interesting example relating to the struggles of different worldviews with regard to the recognition of 'biocultural rights' throughout the negotiations of the Nagoya Protocol, see Kabir Bavikatte and Daniel F. Robinson, 'Towards a People's History of the Law: Biocultural Jurisprudence and the Nagoya Protocol on Access and Benefit Sharing' 7/1 *Law Environment and Development Journal* 37 (2011). 'Biocultural jurisprudence then is the theory and practice of applying a biocultural rights framework to law and policy, when such law and policy affects a community whose peoplehood is integrally tied to their traditional stewardship role and fiduciary duties vis-à-vis their lands and concomitant knowledge'. *Id.*, at 50.

economy of biodiversity politics considers its embeddedness in North–South relations and related forms of knowledge and truth.

In the following sections, we first elaborate the theoretical consideration which our analysis is based on by introducing the notion of epistemic selectivities in the context of a critical conceptualisation of the state, which goes beyond an understanding of the state as a rule-setter and a problem-solver. Thereafter, three dimensions of epistemic selectivities are examined. First, we discuss the specificities of biodiversity knowledge and the relation to ‘the pay to conserve logic’. Second, the way in which science-policy interfaces contribute to the sustainability of this logic and, third, the means by which related inequalities are embedded and implemented through the CBD in general and the Nagoya Protocol in particular are discussed. The article ends with a tentative outlook and an argument for why epistemic selectivities provide a valuable analytical framework for understanding the dynamics and problems of global (environmental) politics over the last three decades.

## 2 EPISTEMIC SELECTIVITIES: THEORETICAL CONSIDERATIONS

Epistemic selectivities are those mechanisms inscribed within political institutions which privilege particular forms of knowledge, problem perceptions, and narratives over others. The notion of epistemic selectivities differs from the concept of epistemic communities insofar as it builds on a specific understanding of the relations between structure and agency, taking into account the notion of discursive power and hegemony. Epistemic communities, defined as a group of professionals with expertise on a defined issue that is based on a shared set of norms, beliefs, and problem perceptions, are seen to contribute to increasing cooperation in international politics by providing policymakers with knowledge on emerging issues. Beyond the provision of specific knowledge and expertise, epistemic communities are

seen to frame current and future policy issues,<sup>16</sup> and to set standards and criteria for the validation of this knowledge, often defined in terms of usable knowledge.<sup>17</sup> One could argue that epistemic communities significantly contribute to the separation of facts from non-facts and of science from non-science,<sup>18</sup> i.e. the definition of what accounts as scientific evidence and as policy relevant knowledge. It is important to note that the concept of epistemic communities starts with the assumption of shared beliefs and norms among a specific group of experts that potentially leads to the establishment of institutions interfacing science and policy such as, for example, the IPCC. But the concept does not take into account the mechanisms privileging particular forms of knowledge within those institutions and the hegemonic account of knowledge beyond the definitional role of particular networks of experts.

In turn, the notion of epistemic selectivities we propose in this article takes into account patterns of selectivity leading to the domination of specific forms of knowledge, perceptions of problems, and narratives over others. It is based on the assumption that political institutions are material condensations of societal power relations and discourses that simultaneously underlie, form, and reproduce epistemic selectivities as a crucial political mode to promote certain scientific and political self-evidence. In order to understand the underlying mechanisms of epistemic selectivities, it is important to refer to the relational character of structure and agency, *inter alia*, outlined in the strategic-relational-approach (SRA) developed by Bob Jessop.<sup>19</sup> The SRA focuses on institutional and discursive strategic selectivities and aims to explain why ‘[p]articular forms of state

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16 Emanuel Adler and Peter M. Haas, ‘Conclusion: Epistemic Communities, World Order, and the Creation of a Reflective Research Program’ 46/1 *International Organisation* 367 (1992).

17 Peter M. Haas, ‘Science and International Environmental Governance’, in Peter Dauvergne ed, *Handbook of Global Environmental Politics* 383, 386 (Cheltenham/UK Northampton, MA, USA: Edward Elgar Pub, 2005).

18 E.g. Sheila Jasanoff, *The Fifth Branch: Science Advisers as Policymakers* (Cambridge: Harvard University Press, 1990).

19 Bob Jessop, *State Theory: Putting the Capitalist State in its Place* (Cambridge: Polity 1990) [hereafter Jessop] and Bob Jessop, *State Power: A Strategic-Relational Approach* (Cambridge: Polity 2007).



privilege some strategies over others, privilege the access of some forces over others, some interests over others, some time horizons over others, some coalition possibilities over others'.<sup>20</sup> Hence, the concept of strategic and epistemic selectivities is based on the assumption that social, political, and economic 'structures are selective of strategy in the sense that, given a specific context, only certain courses of strategic action are likely to see actors realise their intention'.<sup>21</sup> They are spatially and temporally specific, facilitating and challenging the success of strategic interests of actors.<sup>22</sup> The original concept of strategic selectivity lacked a notion that is captured by the concept of discursive selectivity introduced by Colin Hay, who argues that the context within which actors form their interests and strategies is discursively mediated and further mediates the individual knowledge of actors about the context within which they act.<sup>23</sup> The specific understanding of a context determines the set of alternatives from which actors choose their strategies and can lead to a 'systematic misinterpretation of the context in question'.<sup>24</sup>

Even though the latter is reflected in the concept of epistemic selectivities, it is not congruent with what our concept stands for, namely the attempt to assess the political mode of promoting certain scientific and political self-evidence through the analysis of institutional configurations and related discourses. It goes beyond the selectivity within a specific context of decision-making and addresses the hegemonic account inherent in the production and re-production of knowledge, problem perceptions, and narratives regarding specific objects to be governed in their context. The concept of epistemic selectivity is linked to the definition of *epistemē* as a strategic apparatus that makes possible the separation of what may be characterised as scientific from that which is not.<sup>25</sup> More specifically, Foucault sees this

apparatus as capable of discerning all acceptable statements from those that are available within a specific field of scientificity. Discourses which are designated as strategically-coordinated apparatuses of power represent an accumulation of these statements under a specific logic that sets rules for exclusion, limitation, and prohibition.<sup>26</sup>

Our approach takes actors and their alliances into account – like the epistemic communities literature – but it develops a more sophisticated understanding of how global economic paradigms of valorisation are reproduced at the intersection of science and policy. We embed the concept of epistemic selectivities within a broader context of political economy – or even cultural political economy<sup>27</sup> in order to detect the dominant driving forces of societal developments that cause environmental problems and to relate them to the constitution of a contingent 'corridor' of the possible and plausible making of policy. By analysing biodiversity politics as means of dealing with the erosion of biodiversity, we cannot abstract from capitalist growth imperatives, industrial forms of production, and consumption as well as certain 'modern' subjectivities.<sup>28</sup> And we cannot overlook the fact that the state and international political institutions are

20 See Jessop, *id.*, at 20.

21 Colin Hay, 'Globalisation as a Problem of Political Analysis: Restoring Agents to a 'Process without a Subject' and Politics to a Logic of Economic Compulsion' 15/3 *Cambridge Review of International Affairs* 379, 380 (2002).

22 *Id.*, at 381.

23 *Id.*, at 382.

24 *Id.*

25 Michel Foucault and Colin Gordon eds, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977* 187 (New York: Pantheon Books, 1980).

26 Michel Foucault, *Madness and Civilization: A History of Insanity in the Age of Reason* 183 (New York: Pantheon Books, 1988/1964).

27 Bob Jessop, 'Critical Semiotic Analysis and Cultural Political Economy' 1/2 *Critical Discourse Studies* 159 (2004) and Ngai-Ling Sum, 'The Production of Hegemonic Policy Discourses: 'Competitiveness' as a Knowledge Brand and Its (Re-)contextualizations' 3/2 *Critical Policy Studies* 184 (2009).

28 See on this perspective in the context of political ecology, e.g. Peter Newell, 'The Political Economy of Global Environmental Governance' 34/2 *Review of International Studies* 507 (2008); Richard Peet and Michael Watts eds, *Liberation Ecologies: Environment, Development, Social Movements* (London/New York: Routledge, 2004); Timothy W. Luke, 'Situating Knowledges, Spatializing Communities, Sizing Contradictions: Globality, Locality and Green Statism', in Gabriela G. Kütting and Ronnie D. Lipschutz eds, *Environmental Governance, Power and Knowledge in a Local-global World* 13 (London/ New York: Routledge, 2009) and Ulrich Brand and Christoph Görg, 'Sustainability and Globalisation: A Theoretical Perspective', in Ken Conca, Mathias Finger and Jacob Park eds, *The Crisis of Global Environmental Governance. Towards A New Political Economy of Sustainability* 13 (London/New York: Routledge, 2008).

not neutral entities above or beside (world-) society but reproduce manifold unsustainable practices, related discourses, and scientific tools.

The internationalised state – understood as a multi-scalar constellation – is more or less part of hegemonic societal relations, i.e. broadly accepted forms of societal development, production and consumption patterns, and manifold forms of domination. At the same time, the internationalised state is key for managing the tensions and conflicts arising out of the appropriation of nature and the ecological crisis. Such a perspective enables us to develop an understanding of the transformation of global (environmental) politics over the last three decades. In other studies we have shown that the current phase of capitalist development since the 1980s is characterised by an intensification of a ‘valorisation paradigm’, i.e. a growing political economic interest in the appropriation of nature for its marketing.<sup>29</sup> This was not entirely new but gained an enormous dynamic and articulated itself with the beginning of explicit international environmental governance. This is the case for not only water supply, timber production, and climate change politics through the invention of so-called flexible mechanisms but also and especially for genetic resources.<sup>30</sup> It is not a mere economic process because the rules for the appropriation of nature have to be set politically, e.g. the protection of intellectual property rights from the use of genetic resources.

Therefore, we talk about a ‘post-Fordist governance of nature’.<sup>31</sup> Biodiversity markets are growing in a variety of areas, encompassing, for example, offset and compensation programs.<sup>32</sup> As we tried to show in the previous section, payments for ecosystem services might become a cornerstone of international biodiversity politics. In its internal provisions, the CBD is shaped by a tendency towards commercialisation and creates respective selectivities. The Nagoya Protocol can be interpreted as the institutionalisation of the free exchange of genetic resources (which does not mean free of charge). Like other forms of global environmental governance, the CBD and the Nagoya Protocol serve as political-institutional frameworks for emerging global markets and articulate local, national, and international forms of domination.

The CBD as an apparatus of the internationalised state is an unstable compromise to deal with the problem of biodiversity loss and is rather asymmetrically structured.<sup>33</sup> According to Poulantzas, it can be argued that the (internationalised) state gives certain balances of forces a form (i.e. it gives the relationship among states, private corporations, and local actors, like indigenous peoples, continuity through the structured political terrain). As we aim to underline with the approach towards epistemic selectivities, such processes are not thinkable without the development, recognition, and regulation of scientific knowledge. Michel Foucault argued that it is impossible to understand the development of scientific knowledge without taking into account the transformation of power mechanisms. For him the typical case would be that of the economy, but according to him biology has also developed from complex elements such as the development of agriculture, relations with foreign countries, and the subjugation of colonies. Reflecting on the progress

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29 See Brand et al., note 11 above; Ulrich Brand and Christoph Görg, ‘Post-Fordist Governance of Nature: The Internationalization of the State and the Case of Genetic Resources: A Neo-Poulantzian Perspective’ 15/4 *Review of International Political Economy* 567 (2008) and Alice B. M. Vadrot, ‘Biodiversity and Society: Why should Social Sciences Have A Say’ 24/3 *Innovation-The European Journal for Social Science Research* 211 (2011).

30 See e.g. Brand et al., note 11 above in general and on genetic resources; on forests, see Peter Dauvergne and Jane Lister, ‘The Power of Big Box Retail in Global Environmental Governance: Bringing Commodity Chains Back into IR’ 39/1 *Millennium* 145 (2010) and on carbon dioxide emissions and climate politics, see Larry Lohmann ed, *Carbon Trading-A Critical Conversation on Climate Change, Privatisation and Power* (Uppsala: Dag-Hammaröskjöld-Foundation, 2006) and Achim Brunnengräber, ‘The Political Economy of the Kyoto Protocol’, in Leo Panitch and Colin Leys eds, *Socialist Register 2007: Coming to Terms with Nature* 213 (New York: Monthly Review Press, 2006).

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31 See Brand and Görg, note 29 above.

32 E.g. Becca Madsen, Nathaniel Carroll and Kelly Moore Brands, ‘State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide’ (2010), available at <http://www.ecosystemmarketplace.com/documents/acrobat/sbdlmr.pdf>.

33 Ulrich Brand, Christoph Görg and Markus Wissen, ‘Second-Order Condensations of Societal Power Relations: Environmental Politics and the Internationalization of the State from a Neo-Poulantzian Perspective’ 43/1 *Antipode* 149 (2011).

of scientific knowledge is not possible without reflecting on mechanisms of power.<sup>34</sup>

# 3

## TRUTH AND POWER IN SELECTIVE BIODIVERSITY POLITICS

In the following section we will identify and analyse the epistemic selectivities within and throughout the development of biodiversity knowledge and related research. Then, we will show that the making of a science-policy interface for biodiversity and ecosystem services contributes to sustain these epistemic selectivities. We argue that epistemic selectivities shape the negotiations on whether and how to institutionalise the IPBES strengthening the global economic paradigm in biodiversity science and policy, i.e. ‘the pay to conserve logic’. We then examine how this paradigm shapes negotiations in the framework of the CBD in general and the Nagoya Protocol in particular to explain why the analysis of causal mechanisms like the political economy of biodiversity remains important for understanding the dynamics and problems of global (environmental) politics in recent decades.

### 3.1 Biodiversity Knowledge and the ‘Pay to Conserve Logic’

Gaps in biodiversity knowledge and missing communication between science and policy in biodiversity politics are increasingly conceived to challenge the implementation of the CBD.<sup>35</sup> One

difficulty is that ‘in the field of biological diversity widely varying concepts of nature meet (depending on the viewpoints on ecosystems, species or genetic resources; from untouched nature or the ‘natural wealth of the tropics’ to the utility of genetic resources), but also widely varying societal nature relations (above all diverging forms of use)’.<sup>36</sup> The recognition of biodiversity as a valuable resource for human well-being seems obvious, even though the contribution of biological diversity to functioning ecosystems is sometimes difficult to prove, as is the role of some species in the maintenance of ecosystem services. Recently, the Millennium Ecosystem Assessment has provided more insight and evidence in this respect. Since the beginning of the scientific debate on the biodiversity issue, economic questions have been considered in political and scientific programmes. A case in point is the early literature on the economic value of biodiversity and the concept of ecosystem services.<sup>37</sup>

The assessment of the value of biodiversity has many different dimensions and is hence difficult to carry out in a proper manner, especially with regard to the impact of new technologies, such as that of biotechnology. Itis already showed this in 1988 with his estimate of the value of wild tomatoes, the discovery of a new species of wild maize, and the role of related research.

The benefits of even the most unimportant research are often quite unexpected. Who would have predicted that these tiny, slimy seeds of a useless, ugly weed, stuck to an old newspaper costing no more than a few dollars and 30

34 Michel Foucault, ‘Diskussion vom 20. Mai 1978’, in Daniel Defert and François Ewald eds, *Schriften in vier Bänden. Dits et Ecrits*, Bd 4: 1980-1988 146 (Frankfurt am Main: Suhrkamp, 2005).

35 Science-policy interface on biodiversity and ecosystem services: gap analysis, 3 August 2009, UN Doc. UNEP/IPBES/2/2 3 (2009) [hereafter Gap Analysis]; Alice B.M. Vadrot, Understanding the Establishment of the Intergovernmental Platform for Biodiversity and Ecosystem Services (IPBES): Epistemic Selectivities in International Biodiversity Politics (Ph.D. Thesis presented at the University of Vienna 2013) and Alice B.M. Vadrot, *The Politics of Knowledge and Global Biodiversity* (London: Routledge, 2014) [forthcoming].

36 Christoph Görg and Ulrich Brand, ‘Global Environmental Politics and Competition Between Nation-states: On the Regulation of Biological Diversity’ 7/3 *Review of International Political Economy* 378 (2000). See also Vadrot, note 29 above.

37 Michael Flitner, ‘Biodiversität: oder das Öl, das Meer und die ‘Tragödie der Gemeingüter’, in Christoph Görg et al. eds, *Zugänge zur Biodiversität. Disziplinäre Thematisierungen und Möglichkeiten integrierender Ansätze* 53, 59 (Marburg: Metropolis-Verlag, 1996). For examples see Herman E. Daly and Kenneth N. Townsend, *Valuing Earth - Economics, Ecology, Ethics* (Cambridge: MIT Press, 1993); Brian G. Norton, *Why Preserve Natural Variety?* (Princeton: Princeton University Press, 1987); David W. Pearce, *Economic Values and the Natural World* (London: MIT Press, 1993) and David W. Pearce and Dominic Moran, *The Economic Value of Biodiversity* (London: Earthscan, 1994).

minutes of our time, might enrich the U.S. economy by tens of millions of dollars [...].<sup>38</sup>

He points to both the fact that species can have a value as commodities and to the role of research in discovering and revealing this value. Whilst early attempts to estimate the value of biodiversity were rather calculative experiments than applicable approaches, more recently economic valuation of biodiversity - most notably in the framework of *The Economics Ecosystems and Biodiversity* (TEEB) - has shifted towards more pragmatic and applicable approaches, including the recognition of the needs of local policymakers and local communities as well as the business and financial sectors. One important step in this direction was to strengthen the link between biodiversity and ecosystem services, i.e. the attempt to provide evidence that the conservation of biodiversity contributes to the stable provision of ecosystem services that promote human well-being or the presentation of biodiversity as an ecosystem service.

The current shift towards the economic valuation of biodiversity and the concept of ecosystem services is related to the Millennium Ecosystem Assessment from 2005. This conceptual shift has underpinned the relationship between biodiversity and ecosystem services, the coupling of conservation and use, and the role of ecosystem services in the development of market-based environmental policy instruments for biodiversity and the development of markets for non-traditional natural resources.<sup>39</sup> It is important to note that the concept of ecosystem services is assessed, used and employed differently. Whilst the Millennium Ecosystem Assessment uses a very broad definition of ecosystem services,<sup>40</sup> figuring as a heuristic concept for showing and communicating the value of the elements of nature that are not yet monetised, scholars such as Costanza et al. and the TEEB

study<sup>41</sup> *inter alia* perceive the concept to serve as a policy instrument for integrating non-traditional resources into GDP and cost-benefit analyses through rationalised and evidence-based policy decisions. Yet, some scholars aim to operationalise the concept as commodities for new markets obscuring the potential role of ecosystem services as policy or conservation instruments.<sup>42</sup> But, the development and operationalisation of the concept of ecosystem services is both debated and scientifically questioned. Nahlik et al. point to the inconsistency of terms, definitions, and classifications within approaches aiming at the development of a conceptual framework for the application of ecosystem services.<sup>43</sup> Along the same lines, Kontogianni et al. argue that '[d]espite the burgeoning interest in ecosystem services, there are currently no widely accepted methods to include services in conservation assessments'.<sup>44</sup> Nevertheless, the shift towards an anthropocentric approach to biodiversity and the development of market-based environmental policy instruments are often conceived as communication metaphors and tools to raise awareness about the erosion of biodiversity, to increase the implementation of biodiversity politics, and to finally tackle environmental problems. This claim and related conflicts are reflected in the negotiations leading to the establishment of the IPBES and its institutional configuration.

### 3.2 Science-policy Interface for Sustaining the 'Pay to Conserve Logic'

The development of arguments for why science and scientists should play a major role in biodiversity politics coincided with the birth of the term 'biodiversity' in preparation for the National Forum

38 Hugh H. Iltis, 'Serendipity in the Exploration of Biodiversity: What Good Are Weedy Tomatoes?', in Edward O. Wilson, *Biodiversity* 98, 103 (Washington DC: National Academy Press, 1988)

39 MA 2005, note 1 above.

40 The Millennium Ecosystem Assessment's classification considers four different categories: Provision services (e.g., water and food); regulatory services (pollination and water regulation), cultural services (e.g., aesthetics and recreation), and services required for the production of all other services. See MA 2005, note 1 above.

41 See TEEB Report, note 1 above.

42 James Boyd and Spencer Banzhaf, 'What are Ecosystem Services? The Need for Standardized Environmental Accounting Unit' 63 *Ecological Economics* 616 (2007).

43 Amanda M. Nahlik et al., 'Where is the Consensus? A Proposed Foundation for Moving Ecosystem Service Concepts Into Practice' 77 *Ecological Economics* 27 (2012).

44 Areti Kontogianni, Gary W. Luck and Michalis Skourtos, 'Valuing Ecosystem Services on the Basis of Service-providing Units: A Potential Approach to Address the 'Endpoint Problem' and Improve Stated Preference Methods' 69/7 *Ecological Economics* 1479, 1480 (2010).

on Biodiversity. Biologists such as Edward O. Wilson, Paul R. Ehrlich, Harold A. Mooney, and others argue that scientists have a specific responsibility for raising awareness on the implications of deforestation, the extension of species, and the application of new scientific tools such as those of biotechnology.<sup>45</sup> Since the CBD was established in 1992, improving the relationship between science and policy has often been conceived as an important way to strengthen the mandate of the CBD and its implementation.<sup>46</sup> Jane Lubchenco has expressed the necessity to integrate science and scientists in the development of a biodiversity strategy, arguing that the best policy and management are based on the 'best science'.<sup>47</sup> Later on and given the obvious problems concerning effective biodiversity politics, the argument was strengthened that the CBD, in contrast to the United Nation Framework Convention on Climate Change (UNFCCC), 'does not have the structural means to mobilise expertise of a large scientific community to inform governments' has contributed to the idea of developing an 'IPCC for biodiversity' that 'has floated around for some years'.<sup>48</sup> The idea to establish an international panel for biodiversity was clearly and openly presented at the conference 'Biodiversity Science and Governance' held in Paris in 2005, which was attended by 2000 scientists, policy representatives, and non-governmental stakeholders. Leduc et al. argued that:

In order to ensure coordinated actions internationally and appropriate transfer of knowledge between science and policy, it is time to establish an international or intergovernmental mechanism playing a role akin to that of the IPCC for climate change on all aspects of biodiversity.<sup>49</sup>

45 See Wilson, note 7 above.

46 Kal Raustiala and David G. Victor, 'Biodiversity Since Rio: The Future of the Convention on Biological Diversity' 38/4 *Environment* 16, 17-18 (1996).

47 Jane Lubchenco, 'The Role of Science in Formulating a Biodiversity Strategy' 45 *BioScience Supplement Science and Biodiversity Policy* 7, 8 (1995).

48 Michel Loreau et al., 'Diversity Without Representation' 442 *Nature* 245, 246 (2006).

49 Robert Barbault and Jean-Patrick Leduc, 'Proceedings of the International Conference on Biodiversity, Science and Governance for Sustainable Development, 23-28 January 2005, 56 (Paris: UNESCO, 2005).

This was also made explicit at the 56th annual meeting of the American Institute of Biological Sciences (AIBS) in 2006 in Washington DC that in turn focused on the need to strengthen the link between ecology and economy.<sup>50</sup>

Since then attempts have been intensified to create a formalised intergovernmental *science-policy interface* (SPI) to 'generate readily accessible information about the status and trends of biodiversity, projections of future changes in biodiversity and the ecosystem services that depend on it, and options to conserve biodiversity and ecosystem services and mitigate adverse impacts of biodiversity changes'.<sup>51</sup> After a three-year consultative process from 2005 to 2008,<sup>52</sup> and three multi-stakeholder meetings from 2008 to 2010 under the auspices of the United Nations Environment Programme (UNEP), representatives of governments agreed '[...] that no intergovernmental mechanism currently existed to meet all the science policy needs of the multiple multilateral environmental agreements and processes in the field of biodiversity and ecosystem services'.<sup>53</sup> A gap analysis produced for the second meeting had previously shown that '[...] shared frameworks, methodologies and basic understandings to respond to the complex nature of biodiversity and ecosystem

50 At the 56th annual meeting of the American Institute of Biological Sciences (AIBS), attendees discussed how to show that conservation of biodiversity ensures ecosystem services for human well-being and by what means. One scientist argued that the investigation of these causalities provides a chance 'to rethink how ecologists do science and communicate it to the rest of the world' and how 'we can speak to decisionmakers and policy-makers a lot more clearly than we have been able to in the past'. Shahid Naeem quoted in Dybas, note 8 above, at 795.

51 E.g. Loreau et al., note 48 above, at 245-246 and Anne Larigauderie and Harold A. Mooney, 'The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services: Moving A Step Closer to an IPCC- Like Mechanism for Biodiversity' 2 *Current Opinion in Environmental Sustainability* 1 (2010).

52 This refers to the consultative process towards an International Mechanism of Scientific Expertise on Biodiversity, IMoSEB.

53 Report of the third ad hoc intergovernmental and multi stakeholder meeting on an intergovernmental science-policy platform on biodiversity and ecosystem services, 11 June 2010, UN Doc. UNEP/IPBES/3/3 (2010) [hereafter Busan Outcome].

services issues remain missing or incompletely implemented'.<sup>54</sup> One important argument supporting this process was the 'evidence of the lack of a process providing common and regularly reviewed guidance on a strategic approach to research, designed to ensure that the most important needs in terms of knowledge to support more effective governance at all levels are being identified and responded to in a coordinated manner'.<sup>55</sup> This implies that a 'uniform' and 'consistent' framework for generating policy-relevant information and a common knowledge are conceived as being central for mainstreaming and conserving biodiversity.<sup>56</sup>

Scientific communities, i.e. programmes, institutions, and groups such as DIVERSITAS and IUCN, or those connected to TEEB, played an important role in promoting the idea that an IPBES was needed inter alia through expert workshops, dissemination of informational material, scientific articles, and commentaries. The arguments raised were that science has a major role to play in biodiversity governance as science provides knowledge, assessments, and tools.<sup>57</sup> The interest of the scientific communities was also to promote biodiversity research as relevant and to ensure research funding. It was often argued that climate change-related research is getting (more than) sufficient funding, whilst biodiversity research was underfunded. Access to research objects and research funding are two important interests of research

communities that contribute to the promotion of 'IPCC for biodiversity'. Indeed, 'the international science community, which is rather naive about these issues, basically wants to get better prestige about their biodiversity knowledge and their biodiversity advice to policymakers. And they think if they have an IPCC-like structure, then automatically policymakers will take it up'.<sup>58</sup>

However, there are discrepancies within scientific communities on what such a body should look like and what knowledge it should generate. DIVERSITAS and IUCN stressed the role of global scientific assessments in the tradition of the Millennium Ecosystem Assessment and referred to the need to ensure scientific credibility and saliency. More recently, DIVERSITAS has shifted its agenda towards policy relevance and enlarged the scope of research of biodiversity through its relationship with ecosystem services and human well-being.<sup>59</sup> In turn, Briggs and Knight, for example, argue 'that scientific input actually plays only a small role' compared to the broad range of biodiversity knowledge of indigenous and local communities.<sup>60</sup> In conjunction with this, Hulme et al. refer to the feasibility of bottom-up processes and the necessity of capacity building to ensure a broad scope and acceptance of knowledge on biodiversity and ecosystem services.<sup>61</sup>

IPBES was officially established at the end of the second plenary session of the IPBES in Panama City.<sup>62</sup> The chair, Robert Watson, commented that 'Today, biodiversity won'. He stated that biodiversity and ecosystem services were essential for human well-being and that the IPBES '[...] will generate the knowledge and build the capacity to protect them

<sup>54</sup> See Gap Analysis, note 35 above.

<sup>55</sup> Options for improving the science-policy interface for biodiversity and ecosystem services, 13 April 2010, UN Doc. UNEP/IPBES/2/3:2 (2010) [hereafter IPBES Busan Options].

<sup>56</sup> Report of the second session of the plenary meeting to determine modalities and institutional arrangements for an intergovernmental science-policy platform on biodiversity and ecosystem services, 18 May 2012, UN Doc. UNEP/IPNES/2/3 7 (2012).

<sup>57</sup> E.g. Christoph Görg et al., 'International Science-Policy Interfaces for Biodiversity Governance - Needs, Challenges, Experiences; A Contribution to the IMoSEB Consultative Process', Report of a Workshop held in October 2-4, 2006, Leipzig, Germany; Sybille van den Hove, 'A Rationale for Science-Policy Interfaces' 39/7 *Futures* 807 (2007) and Thomas Koetz et al., 'Building Better Science-Policy Interfaces for International Environmental Governance: Assessing Potential Within the Intergovernmental Platform For Biodiversity and Ecosystem Services' 12/1 *International Environmental Agreements* 1 (2011).

<sup>58</sup> See Vadrot, IPBES, note 35 above (quote from an interview with a representative of IUCN).

<sup>59</sup> See Larigauderie and Mooney, note 51 above.

<sup>60</sup> Susan Briggs and Andrew T. Knight, 'Science-Policy Interface: Scientific Input Limited' 333/6043 *Science* 696 (2011).

<sup>61</sup> Martin Hulme et al., 'Science-Policy Interface: Beyond Assessments' 333/6043 *Science* 697 (2011).

<sup>62</sup> Key achievements include 1) a work programme with 16 potential activities 2) establishment of two subsidiary bodies, a Bureau and a Multidisciplinary Expert Panel 3) some propositions for rules and procedures 4) the decision to physically locate the platform's secretariat in Bonn, Germany. No agreement was found on the budget and the question whether FAO, UNDP, UNEP, and UNESCO should jointly host IPBES.

for this and future generations'.<sup>63</sup> Mauz and Granjou stressed that the IPBES was one of the most important 'new institutions of biodiversity' taking part in the process in which 'biodiversity defined itself as a public problem'.<sup>64</sup> We argue that the current science-policy interface and the establishment of the IPBES actually complement and substantiate the 'pay to conserve logic' at the expense of non-commercial views on nature. Related conflicts are often neglected in public representations of the establishment of the new body. Especially towards the end of the negotiation process of the IPBES<sup>65</sup> positions, 'avoiding perverse market-mechanisms of services provided by nature'<sup>66</sup> became more visible.

During the negotiations on the IPBES in Nairobi in 2011, the representative of the Plurinational State of Bolivia raised concerns about the unquestioned inclusion of the concept of ecosystem services. The delegate argued that he could not agree on the text on behalf of his government as long as the document rests upon a strong and unquestioned emphasis on ecosystem services. This statement was not documented in the first draft of the final report.<sup>67</sup> The government of the Plurinational State of Bolivia did not want to agree on the text of the report before the following formulation was included:

The representatives of the Plurinational State of Bolivia and the Bolivarian Republic of Venezuela said that the concept of ecosystem services did not reflect adequately their vision

of the relationship between human beings and nature and would limit the focus of the platform's work.<sup>68</sup>

The understanding of nature differs insofar as it is not anthropocentric and nature is seen to have an inherent value as such that needs to be respected and not equated with the benefits resulting from the use of natural resources. At the second plenary meeting of the IPBES in Panama, the representative of Bolivia presented a document dealing inter alia with issues of '[...] respect for human rights, including the rights of indigenous peoples, and equity in the development of approaches to non-commodification of ecosystem services and functions'.<sup>69</sup> As the latter point was not taken up sufficiently in the final document, the representatives of Bolivia, Egypt, and Venezuela indicated 'that they should not be listed among the Governments consenting to the resolution'.<sup>70</sup>

The explicit dimension of the conflict line between Bolivia and other governments with regard to the concept of ecosystem services revolved around the conception of nature, on the one hand as 'service provider', and on the other hand as Mother Earth ('pachamama') having its own rights as it is stated in the constitution of Bolivia. The 'conflict' between Bolivia and the rest was explicit – not overwhelming and central, but time-consuming – and the reasons for this conflict were thus outspoken, namely divergent approaches to societal and economic development, and their associated policy instruments and regulations.<sup>71</sup>

This shows that epistemic selectivities within biodiversity knowledge relate to the way in which science and policy interrelate and to the hegemonically structured fields within which they

63 IPBES, 'New Intergovernmental Body Established to Accelerate Global Response towards Sustainable Management of World's Biodiversity and Ecosystems,' 23 April 2012, available at <http://www.ipbes.net/news-centre11/229-ipbes-established-today-biodiversity-won.html>.

64 Isabelle Mauz and Céline Granjou, 'The Construction of Biodiversity as a Political and Scientific Problem. Initial Results from an Ongoing Survey' 3-bis *Sciences Eaux & Territoires* 10 (2011).

65 This refers more specifically to the first plenary session of the IPBES in October 2011 in Nairobi/Kenya and the second plenary session in April 2012 in Panama.

66 Bolivia raised this point at the negotiations in Panama on 17 April 2012. See IPBES-2#1, 16/99 *Earth Negotiations Bulletin* 2 (2012), available at <http://www.iisd.ca/ipbes/sop2/>.

67 Report of the first session of the plenary meeting to determine modalities and institutional arrangements for an intergovernmental science policy platform on biodiversity and ecosystem services, 10 October 2011, UN Doc. UNEP/IPBES.MI/1/8 (2011) [hereafter Nairobi Outcome].

68 *Id.*, at 5.

69 See Panama Outcome, note 9 above, at 4.

70 Similar developments characterised the negotiations at the Rio conference in June 2012. Whilst the draft document included the concept of ecosystem services, the resistance of the ALBA countries has led to the deletion of the term throughout the document. It is important to note that in the meantime Bolivia joined the platform.

71 See Vadrot, IPBES, note 35 above, at 248.

operate. Science-policy interfaces need to be conceived as mechanisms within the strategically coordinated (state) apparatus of power through which rules for exclusion, limitation, and prohibition are introduced and incorporated in discursive and institutional terms. Not surprisingly, 'the politicised nature of biodiversity (knowledge) is widely recognised, but not openly'.<sup>72</sup> In the following section, the implicitness of these processes is presented with regard to the way in which the 'pay to conserve logic' is politically, institutionally, and discursively mediated within negotiations related to CBD processes.

### 3.3 The Implementation of the 'Pay to Conserve Logic' Through and Beyond Markets for Ecosystem Services

At the 10<sup>th</sup> Conference of the Parties of the CBD in Nagoya in October 2010, the establishment of the IPBES was debated with respect to its relation to the CBD and its impact on related policies and politics. Venezuela raised concerns that the platform could be easily instrumentalised as it might exclude non-Western science. Brazil responded that the 'platform [...] gives developing countries the opportunities to develop their own scientific and technical capacity to produce real knowledge on biodiversity'.<sup>73</sup> The latter argument suggests that 'real' knowledge on biodiversity can ultimately and exclusively be produced scientifically and implicitly rejects the contribution of traditional and local knowledge for understanding biodiversity. Furthermore, the Brazilian statement suggests that the IPBES could empower developing countries to commodify biodiversity through both access to new technologies and the instrument of capacity-building. Furthermore, this could help developing countries to implement the CBD in the sense that one major challenge has been to identify the knowledge and the resources that need to be protected.<sup>74</sup> Hence,

the expectation is that the IPBES creates an institutional framework for ensuring the equitable sharing of knowledge and science as some precondition for the equitable sharing of the benefits resulting from the commodification of biodiversity. The issue of 'tools' and 'concepts' is seen to increase the accessibility and degree of commodification of biodiversity and raises important questions concerning the appropriation of nature and related epistemic selectivities.

Interestingly, similar debates and conflicts characterised the establishment of the Subsidiary Body on Scientific, Technical, and Technological Advice (SBSTTA) by the Parties to the CBD under Article 25 twenty years earlier. This was not because of the way it works but because of a more general concern, namely the potential to exert a dominant influence on the negotiations within the scope of the CBD.<sup>75</sup> There were many different reasons for the reluctance towards the establishment of the SBSTTA of which the most significant were the possible implication for national sovereignty and access to biodiversity and potential products resulting from biodiversity. 'The block of developing countries' opposed the establishment of the SBSTTA because they felt disadvantaged due to the fact that they could not provide as much scientific knowledge as developed countries. In turn, developed countries limited the scope of relevant knowledge to conservation issues and traditional natural science perspectives on nature inter alia aiming to avoid the fact that development of biotechnology falls under the scope of the CBD. The focus on conservation issues and natural science perspectives in turn has contributed to further convincing 'the block of developing countries' that the establishment of the SBSTTA could impede their perspectives and interests with regard to biodiversity.<sup>76</sup> Hence, it is not surprising that scholars increasingly criticised the SBSTTA for its selective treatment of issues and the systematic ignorance of issues related to intellectual property rights, the access and benefit-

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<sup>72</sup> *Id.*, at 335.

<sup>73</sup> This is based on participant observation conducted at the 10<sup>th</sup> COP of the CBD in October 2010.

<sup>74</sup> Simon West, 'Institutionalised Exclusion: The Political Economy of Benefit Sharing and Intellectual Property' 8/1 *Law, Environment and Development Journal* 19, 31 (2012).

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<sup>75</sup> Thomas Koetz et al., 'The role of the Subsidiary Body on Scientific, Technical and Technological Advice to the Convention on Biological Diversity as science-policy interface' 11 *Environmental Science and Policy* 505, 511 (2008).

<sup>76</sup> *Id.*, at 511.



sharing regime, and Article 8(j) of the CBD on traditional knowledge, innovations, and practices.

Similar issues were raised during the negotiations of the IPBES. There has been a growing debate on the role of indigenous knowledge and the inclusion of indigenous people in the process, as they are, according to the argument raised by the representative of the United States, 'not stakeholders but rights-holders'.<sup>77</sup> But, when the representative of the Argentinean government raised the question of how to ensure that the IPBES will not compete with the rules set by the Nagoya Protocol, the chair simply argued that there were no points of contact. In this respect, the discourse concerning a common knowledge base on biodiversity and ecosystem services contributes to the prearrangement of an epistemic framework for the economic valuation and commodification of biodiversity based upon and reproduced by epistemic selectivities creating political and scientific implicitness about governing biodiversity. Accordingly, epistemic selectivities have an institutional dimension in the sense that political institutions at different levels condense different forms of knowledge in selective ways and that particular forms of knowledge do not exist independently from social and economic interests (albeit they cannot be reduced to them, e.g. the knowledge about the adequate legal appropriation of genetic resources cannot exclusively be explained by the interests of the seed and pharmaceutical industry because other interests might also be considered).

According to Vadrot, many national delegates stressed the role of economic concepts as evidence for policymakers to act and to acknowledge the importance of the biodiversity issue and referred to the possible impact of the IPBES on the implementation of the CBD and the understanding of biodiversity simultaneously: 'Well, what's new is that it is a common knowledge base, a common platform for information [...]. I guess it may provide ways of thinking about issues, frameworks and approaches we are thinking about valuing ecosystem services'.<sup>78</sup> In this regard the concept of ecosystem

services 'is often perceived as a way to provide the biodiversity community in the widest sense with strong scientific concepts and tools. Most of these saw ecosystem services as the long expected way out of conceptual uncertainty and fuzzy approaches'. This coincides with the observation that representatives of developing countries welcome the concept of ecosystem services by means of having a strong tool to prove the value of their environment. The latter is of utmost importance for the following section as it shows how epistemic selectivities contribute to the structuring of political terrains and how, in turn, institutional configurations inhibited by epistemic selectivities shape knowledge and related problem perceptions and narratives in light of an interplay between biodiversity science, policy, and valuation.<sup>79</sup>

Throughout the negotiations of the Nagoya Protocol – and even those of the Bonn Guidelines a decade earlier<sup>80</sup> – we saw serious divergences on how to understand, utilise, and share the benefits resulting from genetic resources and on how to develop a common terminology to set the basis for a legal framework on access and benefit sharing. This is especially important with regard to two questions: first, what is meant by access and, second, that of associated traditional knowledge. According to Bavikatte and Robinson, the 'Nagoya Protocol is the result of an ongoing struggle to assert the rights of indigenous peoples and local communities to their natural resources', as well as how to secure these rights in the light of competing views on nature and property.<sup>81</sup> The problem starts with the definition of access, especially when we deal with natural resources that seem to be freely accessible. But the Nagoya Protocol explicitly deals with access to genetic resources, i.e. the access to a source composed of the molecular units of heredity of living

77 International Institute for Sustainable Development, IPBES-2#2 16/100 *Earth Negotiations Bulletin* 1 (2012), available at <http://www.iisd.ca/download/pdf/enb16100e.pdf>.

78 See Vadrot, IPBES, note 35 above, at 330.

79 Robert Costanza et al., 'The Value of the World's Ecosystem Services and Natural Capital' 387 *Nature* 253 (1997) and David W. Pearce, *Economic Values and the Natural World* (Cambridge, Massachusetts: The MIT Press, 1993). For an overview over the commoditization of ecosystem services see Eric Gómez-Baggethun and Manuel Ruiz Pérez, 'Ecosystem Services Valuation, Market-based Instruments and the Commodification of Nature' 35/5 *Progress in Physical Geography* 613 (2012).

80 See Brand et al., note 11 above, chapter 2.5.

81 See Bavikatte & Robinson, note 15 above.

organisms. In this respect access to genetic resources automatically implies the application of science and technology ranging from law to biotechnology. But, 'many patented biotechnologies do not access material with functional units of heredity and patent holders can thereby refuse to share benefits'.<sup>82</sup> This is why Vogel et al. suggest turning to the economics of information and recognising genetic resources and related traditional knowledge as 'natural and artificial information'.<sup>83</sup> West notes that 'it is difficult to distinguish between use of genetic resources (which is independent of knowledge about them) and TK [traditional knowledge] (which is developed from the use of resources)'.<sup>84</sup>

In the logic and language of the Nagoya Protocol, access indeed means utilisation and is restricted due to the fact that the molecular units of heredity of living organisms, after the CBD came into force, are not freely accessible. Article 1 of the Nagoya Protocol on access to genetic resources clearly addresses access 'to genetic resources for their utilisation'.<sup>85</sup> This implies access in line with the legal framework of the Protocol, i.e. prior informed consent of the country of origin is required if and only if the purpose of access is its utilisation. But, the utilisation that is of utmost importance for the regulation of benefit sharing is not legally defined within the Protocol and is highly debated among legal experts.<sup>86</sup> What does this mean for benefit sharing and understanding Article 5 (1) of the Protocol that states that 'established rights of local and indigenous communities on genetic resources'

need to be respected? If access to genetic resources means utilisation and if such access requires the application of technology then it is a problem of analytically assessing and technically accessing nature.

Against this background, Ruiz and Vernoooy argue that the negotiations towards an ABS regime are accompanied by a 'disregard for new technological advances' and 'a misunderstanding of scientific processes' that do in fact influence biodiversity conservation practices.<sup>87</sup> Hence, it is not surprising that the Nagoya Protocol is still lacking a clear definition of what is actually meant by access whilst 'utilisation' is referred to as '[...] research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology [...]'.<sup>88</sup> A critical point in the negotiation process in Nagoya in 2010 was the provision on derivatives, finally defined as '[...] a naturally occurring biochemical compound resulting from the genetic expression or metabolism of biological or genetic resources, even if it does not contain functional units of heredity'.<sup>89</sup> Derivatives constitute a material that can be made or transformed by biotechnology. To a certain extent, one could name this element an ecosystem service, i.e. human benefits derived from the natural world, but within the 'ABS-community' and, as the Nagoya Protocol has shown, nobody is explicitly referring to ecosystem services, even though, according to some scholars,<sup>90</sup> the molecular units of heredity of living organisms may be framed as services in the sense that the process contributes to sustaining life and to human well-being. Where do we draw the line? In the end its identification is the first step towards commodification. From another perspective, one could say that in the case of the genetic dimension of biodiversity no 'new' concepts were needed, as the challenge of how to commodify plant genetic resources is rather a technical than an economic and political one, insofar as in the case of genetic resources there is a well-established and pre-

82 Joseph H. Vogel et al., 'The Economics of Information, Studiously Ignored in the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing' 7/1 *Law, Environment and Development Journal* 52, 54 (2011).

83 *Id.*

84 See West, note 74 above.

85 Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity, Nagoya, 29 October 2010, available at <http://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>, Article 1.

86 Evanson Chege Kamau, Bevis Fedder and Gerd Winter, 'The Nagoya Protocol on Access to Genetic Resources and Benefit Sharing: What is New and What are the Implications for Provider and User Countries and the Scientific Community?' 6/3 *Law, Environment and Development Journal* 246, 250 (2010).

87 Ronnie Vernoooy and Manuel Ruiz, *The Custodians of Biodiversity: Sharing Access and Benefits to Genetic Resources* (Abingdon: Taylor and Francis, 2012).

88 See, Nagoya Protocol, note 85 above, Article 2.

89 *Id.*, Article 4.

90 See Dempsey and Robertson, note 14 above.

structured market, which is not the case for those ecosystem services that are not yet measured and commodified.

Hence, the overall debate among biodiversity scientists and policymakers, which is visible in the arguments used to support the establishment of the IPBES and the Nagoya Protocol, reproduces the commodification logic. One point in case is the clarification of property rights framed as both a requirement for ensuring access and benefit sharing, and a basis for the sustainable use and conservation of biodiversity. This is why we argue that the global paradigm of valorisation constitutes a strong driving force in international biodiversity politics. This force is however only assessable if the dialectical causalities in the development of biodiversity science and politics are recognised and accordingly conceptualised. In this regard the inequalities in the appropriation of nature are also sustained by the success of certain scientific and political self-evidences in how to govern and conceptualise biodiversity.

## 4

### CONCLUSION: THE MAKING OF EPISTEMIC SELECTIVITIES AND BIODIVERSITY KNOWLEDGE

The aim of this article was to show the means by which the ‘pay to conserve logic’ is sustained and implemented through and beyond science-policy interfaces and the establishment of global markets for ecosystem services. Epistemic selectivities were defined as those mechanisms of political institutions that privilege particular forms of knowledge, problem perceptions, and narratives over others. In this respect, the development, recognition, and regulation of biodiversity knowledge relate to the way in which science and policy interrelate. By referring to the struggles over the institutional arrangement of the IPBES, we could show that science-policy interfaces operate in hegemonically (pre-)structured fields. The argument was predicated on the idea that science-policy interfaces need to be

conceived as mechanisms within strategically coordinated (state) apparatuses of power through which rules for exclusion, limitation, and prohibition are introduced and incorporated in discursive and institutional terms.

The heightened emphasis on the concept of ecosystem services in the context of biodiversity politics and science simultaneously hides and mirrors conflicts and hegemonic constellations in international biodiversity politics. The establishment of the IPBES sustains and reproduces related epistemic selectivities, inherent in and beyond the regulative framework of the CBD and the Nagoya Protocol. The manifestation of similar epistemic selectivities in the making of the IPBES and the text of the Nagoya Protocol is interesting for two reasons: firstly, the IPBES was purposely not established under the CBD and designed as an intergovernmental and independent body to *inter alia* avoid potential conflict with Article 8(j) of the CBD on the protection of indigenous and local knowledge; secondly, the objective regarding the knowledge to be synthesised by the IPBES implicitly privileges the diversity of species and ecosystems over the genetic diversity between species. In turn, the objective of the Nagoya Protocol is ‘to promote and safeguard the fair and equitable sharing of benefits arising from the utilisation of genetic resources’, stressing the importance of research, innovation, and traditional knowledge related to genetic resources and the link to sustainable development.<sup>91</sup> As such, the Nagoya Protocol *per se* rests upon a neoclassical economic perspective of biological diversity coupled with the argument of the ‘tragedy of the commons’, and the idea that natural resources can only be conserved if property rights are clearly defined.<sup>92</sup> Current developments, such as the increased reference to the concept of ecosystem services and Payment for Ecosystem Services (PES) introduce a similar logic to the area of biodiversity conservation, based on the assumption that the acceptance of measures for the conservation of biodiversity is higher if its (monetary) value is defined and business and investment opportunities promoted. Whilst the concept of ecosystem services is often understood

<sup>91</sup> Nagoya Protocol, note 85 above, Preamble.

<sup>92</sup> See Flitner, note 37 above, at 56.

to reduce complexity in the development of biodiversity science and policy the underlying ‘pay to conserve logic’ is conceived as attractive to policy-makers<sup>93</sup> and, as we have shown, to some groups within the scientific community, for different reasons, all of which contribute however, to create certain scientific and political self-evidences on how to govern biodiversity.

Accordingly, we came to the conclusion that the making of a science-policy interface in order to broaden the knowledge base of the CBD does not merely bundle existing knowledge but is based upon, fosters, and creates new epistemic selectivities. This is also the case for the Nagoya Protocol and the ‘pay to conserve logic’ inherent in the text and the language used to set a legal basis for access and benefit sharing. The notion of the ‘pay to conserve logic’ within the Nagoya Protocol is also embedded within the argumentation for the application of ecosystem services that gives a presumed self-evidence more duration. And indeed, the emphasis on ecosystem services was not an issue of major debate throughout the negotiations on the IPBES. It only became relevant when the representative of Bolivia raised concern about the appropriateness of the concept that is besides its immaturity accepted insofar as it provides a great argument for protecting biodiversity. Furthermore, it is used as a connecting point by developing countries that use the concept as a valuable tool to show that they are actually very rich countries, having something to sell; a contribution to make to global markets. This observation points to the dominance of an instrumental and utilitarian logic that contributes to the privileging of economic values associated with biodiversity over others. To a certain extent, the ecosystem services approach contributes to the designation of what actually can be appropriated and it increases the number and range of ‘products’ developing countries can trade and sell. In this respect it enlarges the scope of the access and benefit-sharing regime that is limited to the benefits resulting from the use of the genetic resources derived from biodiversity. But, again, it is knowledge that excludes, limits, and prohibits the technical, analytical, and epistemic access to biodiversity through institutional configurations.

<sup>93</sup> McAfee, *Selling Nature to Save It*, note 6 above, 151.

By linking biodiversity politics to the broader context, it was possible to show that the epistemic power of commodifying tendencies to deal with biodiversity erosion is not predominant by chance. We argue that those economic and political forces that seek to successfully develop crisis strategies (and maintain their hegemony) – or at least create the image that they can be successful in the future – need an ‘ethical’ moment of hegemony in this,<sup>94</sup> i.e. a perspective in which political, technical-scientific, economic, and ideational aspects come together and create an attractive and realisable world vision. As shown above, this mechanism is sustained by the (internationalised) state that gives the relationship among governments, private corporations, and local actors like indigenous peoples continuity throughout the structured political terrain.

Epistemic selectivities, such as the designation of the IPBES as an instrument for enhancing compliance in environmental governance and the use of the concept of ecosystem services as an impetus for policy-making, suggest that these contribute to the prearrangement of an epistemic and institutional framework for strengthening concepts relating to the economic valuation of biodiversity and hence its potential valorisation. From this we can conclude that the currently used concepts and approaches, even though they might be contested within certain communities (e.g. the increasing reference to the concept of ecosystem services), anticipate a certain form of governance by framing and discerning the objects that need to be governed. As shown above, science is not always perceived as a neutral source of information. It incorporates ethical principles into the production of scientific knowledge to separate facts from non-facts and science from non-science,<sup>95</sup> i.e. it frames the issues under consideration. However, this process strengthens the diffusion of narrow concepts that may be misunderstood and misused. As such, the concept of epistemic selectivities helps us to assess both the hegemonic account inherent in the production and reproduction of knowledge, problem perceptions, and narratives regarding specific things to be governed in their socio-economic, political, and cultural

<sup>94</sup> Antonio Gramsci, *Prison Notebooks*. Vol. 7, 1569 (Hamburg/Berlin Argument, German edition, 1996).

<sup>95</sup> See Jasanoff, note 18 above.

context as well as the impacts of processes based on misunderstandings and narrow concepts paired with strategic blindness and competing interests. From this we can conclude that institutions and discourses of international biodiversity politics form a strategic apparatus which makes the separation of what may be characterised as scientific and non-scientific, and not of what is true from what is false, possible. In this respect, the discourse on the IPBES and the notion of knowledge and the language of the Nagoya Protocol contribute to the process of discerning all potential statements from the ones acceptable within a specific field of scientificity.

We have shown the extent to which acceptability is related to commodification issues and the 'pay to conserve logic' that sets the basis for setting rules for exclusion, limitation, and prohibition within knowledge production on biodiversity and underlying epistemic selectivities. Both processes share, however, the question of how to deal with traditional knowledge and how to cope with the different potential degrees of knowledge in the sense of both the creation of unquestioned self-evidence and as a powerful tool to assess and access biodiversity. We have argued that it is necessary to take into account the underlying political economy of biodiversity of which the analysis points to a 'grammar' of driving force of dominant developments, i.e. the strong tendency for both its commercialisation and the related politico-institutional processes. However, this tendency is not realised on its own. Other objectives and strategies play a role as well and they are inscribed in the political economy of biodiversity. Analyses are required on possible forms, sites, and modes of non-hegemonic selectivities.

Indeed and as we have shown, the CBD remains a contested terrain and the Conferences of the Parties, which take place every other year, are a clear example of this. The concretisation of access rules, the acknowledgement of best practices of biodiversity conservation, the financing of projects, the introduction of new issues like the possible development of a science-policy interface, and the relationship to other terrains are areas subject to intense debate at international gatherings. To this extent, the CBD itself, like other international political institutions and networks, has developed

into an important terrain where relevant actors, especially national governments, can articulate their interests and values.

By taking into account the two-fold position of international institutions as regulating authorities and as expressions of global relationships of forces and power as well as of discourses, the role of the CBD can be appraised in a more precise manner. The central issue concerns the specific relationship between conservation and use. Very specific ideas and practices exist which we call different societal nature relations – each representing different mixtures of protection and use of biodiversity: from indigenous peoples and subsistence farming in contrast to industrialised agriculture to protected areas and the use of genetic resources by the life-science industry. The real outcome of such international institutions cannot be narrowed down to their effectiveness in terms of environmental protection, but how it affects societal nature relations and the manifold interests involved.

The reason for our sceptical judgement of international biodiversity politics is that the challenge of valuation, commodification and valorisation lies not only between international agreements with different goals and subjects but also within these agreements. Not even the CBD can escape the valorisation paradigm, which is central to actual societal nature relations. At the same time, the commodification of nature is not a linear process but rather one that is characterised by social struggles and contradictions. This may allow weaker actors (e.g. sensitive Southern governments, NGOs or organisations of indigenous peoples) to bring their interests to bear in the negotiations and to be at least partially considered in the compromises. However, how this occurs exactly as well as how this process allows a degree of manoeuvrability for certain interests must be examined. The making and working of epistemic selectivities can help to understand this better.

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