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Complexity in international regimes: implications for biodiversity and climate change

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1. Introduction

For long the study of international environmental regimes focused on single regimes. Over the last few years there has been an increasing trend to study regime complexes. Analytically this approach is fruitful as it captures the reality, demonstrated both regarding the problems of climate change and biodiversity. It has also been argued that the climate regime complex represents a more promising avenue than the stand-alone (UNFCCC) regime (Keohane and Victor 2011). In this paper it is argued that it is an empirical question whether this is the case. Studying some of the main supplementary (or alternative) approaches to the UNFCCC we argue that this regime-complex is more hierarchical than pictured by Keohane and Victor (2011). Also, there is scant empirical evidence that some of the main alternative approaches have so far been more effective than the UNFCCC. Experience from key aspects of the issue area of biodiversity strengthens this argument. The Access and Benefit (ABS) part of the Convention of Biological Diversity (CBD) was fleshed out in the Nagoya Protocol. However the ‘benefit part’ of this equation may be diluted in the sectoral approaches currently underway within the framework of the Food and Agricultural Organization (FAO), and the World Health Organization (WHO). Moreover, the effectiveness of benefit sharing is not helped by the property rights regimes under the WTO/TRIPS and the WIPO.

The UNFCCC was adopted in 1992 and fleshed out by the Kyoto Protocol in 1997. Since then no new protocols have been added although innovative features like REDD + and ambitious financing plans have been adopted. The substantive most important goal of this regime is to reduce greenhouse gases (GHG) in order to stabilize the global climate. However GHG emissions have instead continued to rise significantly, illustrating that from a problem-solving perspective the climate regime demonstrates low effectiveness (Andresen 2013). Although this fact cannot be denied by anyone, for a long time the main argument of the supporters of the UNFCCC regime was that, yes, it may be weak, ‘but it is the only game in town’. This is no longer the case as climate change is an important issue both for existing international institutions and new international institutions have also be designed to deal with the issue. By casting the net wide, Abbot (2012) has identified 69 international climate-related institutions and initiatives. In this paper we do not focus on the potential significance of the linkages between the UNFCCC and relevant institutions like the World Bank and the WTO. Rather, our focus is on the ability of more exclusive approaches to deliver more

effective solutions than the UNFCCC and whether this part of the regime complex is characterized by conflicts or synergies.

The three-fold objective of the Convention on Biological Diversity (CBD) is the conservation and sustainable use of biodiversity and equitable sharing of benefits derived from utilization of genetic resources. The agreed principles of Access and Benefit Sharing (ABS) have since been sought strengthened through the 2010 Nagoya Protocol of the CBD. The early phases of the negotiations started out with the CBD as a wildlife conservation treaty, but its scope was soon expanded to include the value of genetic resources, including domesticated material, as demanded by developing countries, where the bulk of terrestrial biodiversity is situated. That move strengthened their negotiation clout in the CBD and led to successful achievement of ABS as the regime for international transactions with genetic resources (Koester, 1997; Rosendal, 2000).¹ By including “genetic material of actual or potential value”² the CBD interacts with access to seeds under the UN Food and Agricultural Organization (FAO), access to pathogens under the World Health Organization (WHO), and intellectual property rights (IPR) systems (different approaches to establish economic conditions on legal use of genetic material) under the WTO/TRIPS, UPOV and WIPO. In this light, these three clusters of regimes (relating to seeds, pathogens and IPR) represent different sub-sets of the same regime complex relating to governance of genetic resources. It is these relationships that constitute the focus of the biodiversity part of this study.

Taking the ABS regime of the CBD as the point of departure for this study implies that we take the principles tied to access and equitable benefit sharing as the main measuring rods for assessing the effectiveness of the related regime complex. Choosing for instance access to genetic resources as the sole or major evaluation criterion would lead to different findings of effectiveness within this regime complex. We contend that lack of mutual supportiveness from other regimes in the sub-complexes, could have a negative impact on the effectiveness of the ABS regime. We examine the three sub-complexes and find instances of turf battles as well as forum shopping, where more powerful actors have been pursuing their economic interests, which differ from the principles agreed to under the CBD/ABS regime.

2. Approach and Methodology

As a consequence of regulations we see “increasing overlaps between institutions and in turn problems of fragmentation arising from segmentation along sectoral lines” (Zelli and van Asselt, 2013). While overlap is generally defined as an externality, it can also be a result of covert activity, as a strategic move by negotiating parties. This could be the case if, as a way of

¹ The ABS principles go a long way in explaining why the USA never did ratify the CBD (Rosendal, 1995) and is now the sole non-Party beside Andorra and the Holy See.

² This is how the CBD defines genetic resources, Article 2, Use of Terms.

circumventing the effect of one regime, others are sought created or adapted to combat and undermine the first. Either way, the determination that a situation is one of overlap may not be straightforward or uncontroversial; much like the defining and delineating of a regime may in itself constitute a political and controversial process (Hasenklever et al., 1997). On a similar note, the choice of forum in which to debate certain aspects of an issue area may also be controversial (Rosendal, 2001). Regimes are functionally overlapping when their policy goals and regulations prescribed for problem solving intersect within the same issue-area. The majority of overlaps can be assumed to be potentially synergetic as regimes often build on compatible norms and give rise to mutually reinforcing or complementary regulations. Within the increasingly complex field of international institutions we are also likely to find overlap that comprises diverging norms and rules.

Raustiala & Victor (2004: 279) define regime complexes as “*partially overlapping and nonhierarchical institutions governing a particular issue-area*”. Orsini, Morin and Young (2013) have developed a more detailed definition “*a network of three or more international regimes that relate to a common subject matter; exhibit overlapping membership; and generate substantive, normative, or operative interactions recognized as potentially problematic whether or not they are managed effectively*”.

In the academic debate there are different opinions on the positive or negative consequences of regime complexes. As noted Keohane and Victor (2011) see them as offering potential advantages to a stand-alone regime provided the regime complex is managed reasonably effective. Other analysts are more negative and much of the current debate hinge on the notions of forum shopping and power.

Zelli, Gupta and van Asselt (2013) demonstrate how density can be detrimental as the global norm of liberal environmentalism, which characterize the trade and environment complex, is generating poor results in terms of outcomes. On a similar note, Jönsson (2013) argues that it is the growing role of private actors and the blurring of private-public borderline that has led to fragmentation and duplication of global governance arrangements. This allows for experimenting, fine-tuning and multifaceted approaches to complex problems, but may also reduce effectiveness of regulatory schemes (Jönsson, 2013). Increased regime complexity tends to give way to inter-institutional competition and may lead to open conflict and turf battles, as it opens for forum shopping (Gehring and Faude, 2013). At the same time, the authors point out how these forum shopping opportunities may benefit not only the most powerful and that there is a potential for synergies among the evolving regimes within a complex (Gehring & Faude, 2013). With similar allowance for a nuanced picture, Orsini, Morin and Young (2013) observe that it is important to focus on whom or what shapes regime complexes. In their view, these complex systems are “full of interest-based actors with their own norms and belief systems, possessing distinct power-bases. These aspects are seldom openly negotiated but are not random processes. The management of complexes requires skills. This could tend to favour traditional powerful actors.

In sum, a central question is to what extent power decides or whether international institutions (given ‘proper design’) may display the stronger impact on the results of negotiations. This question permeates much of the literature on single regimes and it is interesting to pursue this line of inquiry also for regime complexes. Is it possible to identify incidents of turf battles and forum shopping in the regime complexes studied here? We address this question by looking into the root causes of the conflicts, compare with how these have played out in the resulting regime complexes, and identify the actors advocating and benefitting from the results.

3. Biodiversity and the ABS regime: three sub-complexes

The CBD and its ABS regime have been ratified by 194 countries and the NP so far by 38.³ The bulk of terrestrial species diversity is found in the tropical South (Heywood, 1995, p.749), while developed countries are mostly in the position to reap the biotechnological revenues from utilization of genetic resources.⁴ Most developed countries wanted current arrangements to remain unchanged, allowing them to enjoy free access to genetic resources in countries in the South, rather than link the use of genetic resources to benefit sharing (Schei, 1997; Rosendal, 2000, 2012). Still, acknowledging countries’ national sovereignty over genetic resources, the ABS regime states that access to genetic resources shall be on prior informed consent (PIC) and mutually agreed terms (MAT). The regime has achieved rather a high level of legitimacy and several public and private bioprospectors have incorporated PIC and MAT in their statutes for how to access genetic resources, realizing the need for trust in such transactions (Laird, 2000; Rosendal, 2006). Still, legal compliance with the ABS regime in user countries remains faulty as conflicts remain over user measures, its functional and temporal scope, and its relationship to other international forums.

Interplay and complexity between the CBD and related regimes have been studied by several authors. Raustiala and Victor (2004) introduced the concept of regime complex in their analysis, which centred on the relationship between the CBD and FAO. Rosendal has studied biodiversity regime interplay in general (2001) and between the CBD and the WTO in particular (2006). Oberthür and Pozarowska (2013) examine three sub-complexes and conclude that the NP has contributed to further consolidate and clarify the division of labour in all three; benefit appropriation and the WTO; sectoral specialization and the FAO and WHO; geographical specialization and the UNCLOS and ATS. In this analysis, we examine three sub-complexes that trigger remaining contested areas of the ABS regime in terms of how *user measures* can be strengthened, the further definition of *scope* of the ABS regime and in turn the need for *sectoral approaches* to govern genetic resources.

³ As of 10 June, 2014 (to be updated).

⁴ This North-South controversy still colours the ABS conflict, even though the negotiating coalitions in the CBD is slightly changing along with the pattern of providers and users (Wallbott et al., 2014).

i) The CBD/NP asks *user countries to take appropriate measures* securing that genetic resources are accessed in accordance with PIC and MAT in provider countries' legislation. A long-standing demand of providers to establish a mandatory *disclosure* requirement regarding genetic resources in patent application failed yet again in the Nagoya negotiations (Oberthür and Rosendal, 2014). This contested area of ABS governance includes balancing access to genetic resources with intellectual property rights (IPR) (Swanson 1995; Esquinas-Alcazar 2005; Rosendal 2011; Pavoni 2013). The CBD ABS regime seeks to balance IPR in the sense that both systems aim to tie economic conditions on legal use of the material.

ii) As regards the *scope* of resources covered, provider countries succeeded in that the NP covers genetic resources along with their derivatives, which are currently more often the source of the benefits. As the concept of derivatives only appears in the definitions of the NP, there is still controversy concerning its practical application for ABS (Koester, 2012). This includes the approach to pathogens with pandemic potential (Wilke, 2013).⁵

iii) Closely linked to scope and among the most controversial issues in the relationship with other international institutions is the establishment of *sector-specific ABS regimes* (Rosendal et al., 2014) This was a core demand by users and it was partly countered by the provision that eventual sector approaches be supportive of and not run counter to the objectives of the NP and the CBD (Art 4.3).

These issues trigger in various ways provider/user conflicts within several sub-complexes relating to ABS. As far as both *scope* and *sector approach* are concerned, the approach to pathogens remains contested and is found in the relationship between the CBD/NP (Art. 8.b)⁶ and the WHO. The turf battles between the CBD/ABS and the FAO remains particularly outspoken over scope, with efforts to establish *sector approaches* to various types of genetic resources for food and agriculture within the FAO. With strong links to *user measures*, the question of disclosure engages a persistent conflict between ABS and various IPR regimes (WTO/TRIPS, WIPO, and UPOV).⁷

3.1 Sector approach, scope and user measures: ABS between the CBD and the WHO

International transactions with GRFA and genetic resources in the pharmaceutical sector are both characterised by interdependence and asymmetrical power relations between providers and users. The ABS nature of access to virus strains for vaccine development was accentuated during the avian flu crisis in 2007. Arguing that they were barred from access to vital vaccines due to patenting and with reference to the ABS regime of the CBD, Indonesian authorities

⁵ The exact temporal and functional scopes of the Nagoya Protocol are still subject to debate, due to the ambiguity of some of its language (Tvedt, 2014). Temporal scope is controversial for genetic material in collections made prior to the entering into force of the CBD, and also the NP.

⁶ See 3.2 on the content of NP, Art. 8b.

⁷ Also the relationship to UNCLOS and ATS could have been studied here.

refused to continue sharing virus samples with the WHO, as long as there was no control with how the material could end up as private property. WHO guidelines at the time recognised the rights of providing countries, but did nothing to stop the appropriation of these resources by private companies, including those outside the WHO Global Influenza Surveillance Network. Also, the WHO did not have regulations in place to safeguard the vaccines returning to those developing countries most vulnerable to the disease, usually the country from which the virus strain originated. Indonesia had the highest infection and fatality rates and could not afford the avian flu vaccine.

The NP response to this emergency situation is found in Article 8b: *“In the development and implementation of its access and benefit-sharing legislation or regulatory requirements, each Party shall pay due regard to cases of present or imminent emergencies that threaten or damage human, animal or plant health, as determined nationally or internationally. Parties may take into consideration the need for expeditious access to genetic resources and expeditious fair and equitable sharing of benefits arising out of the use of such genetic resources, including access to affordable treatments by those in need, especially in developing countries.”*

This critical case also prompted the development of the “Pandemic Influenza Preparedness (PIP) Framework for the Sharing of Viruses and Access to Vaccines and Other Benefits” (PIP Framework) adopted by the World Health Organization Assembly in May 2011 (Koester, 2012; Wilke, 2013).

A comparative drawback is that PIP, as a result of strong resistance by the USA, did not succeed in safeguarding against unauthorised use and related IPR claims by third parties. This links up to user measures and the disclosure debate, which we will also look further into in section 3.3. Most important with a view to user measures, Wilke argues that it is a drawback that the benefit sharing obligations are “weak and insufficiently balanced” (2013:333). She points out how this is interesting in light of the parallel CBD negotiations on the Nagoya Protocol. Access to virus strains for the development of vaccines is the main concern within the WHO, who adopted the PIP process in the wake of the NP.

Assessing the equity aspects of PIP, Wilke (2013) argues that it has the advantage over the CBD ABS regime of benefitting all poor countries in need for access to relevant vaccines, not only the one country providing the virus strain. Another advantage is its efficient tracing system through the Influence Virus Traceability Mechanism (IVTM), a web-based monitoring system. Important to note is that PIP has a clearly and narrowly defined scope as it only applies to pathogens with pandemic potential; all other pathogens thus remain within the purview of the CBD/NP (Wilke, 2012:126).

In sum, it is likely that the CBD-ABS regime may have affected the PIP Framework to quite a substantial degree, as also observed by Oberthür and Pozarowska (2013). In this case, the mutual supportiveness between the CBD and WHO seems to be stronger than the potential for turf battles between them within this sub-complex.

3.2 Sector approach, scope and user measures: ABS between the CBD and the FAO

There was political and organisational strife concerning the demarcation between the CBD and FAO from the outset of the negotiations, as domesticated genetic resources (seeds) became subject to the CBD (Rosendal, 1991). The turf strife coincided with the FAO seed wars in the late 1980s, which also hinged on property rights to seeds as the FAO Undertaking on PGRFA was reinterpreted in 1989 to accommodate IPR and thus waive the CHM principle for systematically bred seeds (Pistorius, 1997; Pistorius & van Wijk, 1999; Raustiala & Victor, 2004; Rosendal, 2000). Common heritage and patents were hence at the centre of the FAO seed dispute and the CBD's response was to balance increased Northern seeds patents with (re)acknowledging how natural resources were subject to national sovereignty. For ex-situ collections of seeds in international gene banks, collected prior to the CBD entering into force, the strife resulted in Resolution 3 in the Nairobi Final Act (1992) by the CBD Parties, which referred to the role of FAO in addressing this particular ex-situ material (Andersen, 2008; Rosendal, 2000).

In 2001 the FAO Parties concluded the ITPGRFA on this basis and after long political struggles ended up with coverage of 35 food plants and 29 forage plants. Most of the European countries originally wanted 287 plants included, while African countries wanted no more than nine food crops (Visser, 2013: 266). The USA, China, Argentina and several other central countries are not party to the Plant Treaty, but are still strong negotiators in the FAO arenas.

Within months of concluding the Nagoya Protocol, the parties to the FAO Commission on genetic resources for food and agriculture (CGRFA) started preparing for negotiations on sectoral approaches for access to farm animal, forest tree, aquatic, microorganisms, and invertebrate genetic resources for food and agriculture, as well as for plants outside the scope of the Multilateral System (MLS) of the ITPGRFA. This harks back to the early turf struggles during the establishment of the CBD between the agricultural sector and the environmental branch. Within the CBD, ABS is principally regarded as a prerequisite for conservation and sustainable use of biodiversity through increased equity, while access to seeds (plant genetic resources) is the first priority with the FAO. As pointed out by Tvedt (2014⁸), when access trumps benefit sharing, this could create a disincentive for a country to preserve genetic resources, which could hardly be seen as supportive of the CBD objectives. This illustrates how the sector approach developing within this sub-complex could also be seen as part of a persistent *turf battles* between international regimes, namely the CBD and FAO.

On the one hand, sectoral approaches could be a necessary fine tuning of governance within specific areas in order to enhance access. The arguments in favour of a sectoral approach to genetic resources in food and agriculture stems from the incremental

⁸ Manus om CBD og IT – mutually supportive.

improvement and multiple sources characterizing seeds, suggesting a high interdependence among providers and users in plant breeding (Morgera et al., 2012). Incremental improvement, multiple sources and interdependence suggest that there is not one end product tied to the accession, and that it is hard to identify a source country and that a provider can become a user and vice-versa (Schloen et al., 2011; Chiarolla et al., 2013). It is these characteristics that provide the rationale for decoupling benefit sharing from both the genetic resource and the provider in the legal instruments deliberated within the FAO.

On the other hand, while these characteristics can to some extent be documented for plant breeding, the other sectors currently contemplated by the FAO – farm animals, forest trees, aquatic, microorganisms, and invertebrates – have been shown to follow different patterns (Medaglia et al., 2013). These are different from plant seeds in that there is less or no incremental improvement involved (particularly not for microorganisms and invertebrates), and generally much less dependency on multiple sources or interdependence among users.

Further, and a more principled argument, is that opening for sector-wise ABS rules for pathogens, academic use and other more or less specified groupings of domesticated genetic resources might run the danger of fragmentation of what is covered by the general ABS rules of the CBD/NP. When certain uses or resources are taken out of the scope of ABS under the Protocol there is no guarantee that the balance required in the CBD is maintained (Tvedt, 2014; Medaglia et al., 2013).

Within the CBD multilateral system of ABS, benefit-sharing is to be negotiated bilaterally between a user and a provider.⁹ In the FAO Multilateral System (MLS), transactions are also based on bilateral private law agreements through Standard Material Transfer Agreements. Here, benefit sharing is decoupled from the provider and defined in non-monetary terms as access to improved breeding material from the MLS. This is not in line with the aspirations for the ABS system under the CBD/NP.

Users generally favour the FAO definition of benefit sharing and this can be seen as an effort to circumvent the ABS principles of the CBD/NP. However, it can be seen as problematic that the multinational seeds corporations enjoy full access without providing benefit sharing. The multinational seeds sector has economic interests in the flexible, open access regime under the FAO and argues that ABS may restrict this.¹⁰ Providers are likely to remain interested in benefit sharing irrespective of which forum deals with the genetic resources. The ABS related discussions in the FAO sub-complex could result in providers having to spend resources and efforts to ensure that new ABS mechanisms are supportive of

⁹ Monetary benefits may include fees per sample, milestone payments, royalties on net sales, and/or licensing agreements, while non-monetary benefit-sharing might cover training, capacity-building, research exchanges, supply of equipment, and technology transfer.

¹⁰ However, the increased private appropriation of genetic resources through intellectual property rights represent a much stronger barrier to free and flexible access; and the FAO debate, unlike that in the CBD, does not acknowledge this.

and not run counter to the CBD and the Nagoya Protocol, as required by article 4. Against this backdrop, the sectoral approach within this sub-complex could be interpreted as *forum shopping* by more powerful actors to side-step benefit sharing.

3.4 User measures and disclosure: ABS between the CBD and IPR regimes

The WTO negotiation process (the GATT Uruguay Round, 1988 to 1994) coincided with that of negotiating the CBD. From the outset, the interaction between the CBD and WTO/TRIPS was contested due to the relationship between ABS and intellectual property rights (IPR). Patenting and intellectual property rights introduced a novel emphasis on private rights over certain types of genetic resources and in section 3.1 we saw how this made a breach with the traditional approach of seeds as common heritage in the FAO Undertaking.

The development of modern biotechnology coincided with an increased privatization of agricultural and pharmaceutical research in the 1970s. This brought about an economic incentive to introduce patent protection coinciding with a technological capability to apply patents in the field. Biotechnology made it possible to fulfil the legal patent criteria for inventions involving biological material (Crespi 1988). At the same time, it has proved difficult to provide similar legal protection of the traditional knowledge about these resources. Patenting is a very costly affair, largely dominated by multinational corporations (Gleckman, 1995). In the late 1980s, developing countries held only about one percent of all patents in biotechnology and by 2005 that figure had increased to four per cent only (WCED 1987; UNDP 2005, 135). These factors combined to increase the awareness of an imbalance between users and providers of genetic resources and constitute part of the background for developing countries' claim for national sovereignty over genetic resources in the CBD. They argued that there is an inequity inherent in the fact that their genetic capital was still considered a Common Heritage of Mankind, freely accessed by all while they must pay an increased price for access to improved breeding materials and medicines as these become subject to patent protection (Raustiala & Victor, 2004; Pistorius and van Wijk, 1999; Rosendal, 1991).

The aim of the TRIPS Agreement is to stimulate technological innovation through harmonization and strengthening of domestic patent legislation by all WTO members. The TRIPS does not create a single, universal patent system. It aims to harmonize, strengthen, and expand the scope for patent protection in domestic patent legislation in member countries. The TRIPS Agreement laid down the ground rules for what must be protected by some kind of intellectual property right, including plant varieties and pharmaceuticals. The World Intellectual Property Organization (WIPO) parties also seek to negotiate standardisation of patent criteria in the members' domestic legislation. The draft Substantive Patent Law Treaty (SPLT) of WIPO aims to achieve international harmonization on patent applications, core terms and patent criteria (Tvedt, 2005).

The outputs from TRIPS and the SPLT have direct effects on national patent legislation, partly under threat of trade retaliations, while the norms and principles emanating from the CBD on ABS remain subject to national jurisdiction. In more comprehensive negotiation fora that deal with high salient issues such as economy and trade (WTO and WIPO), structural power provides the dominant states with more influence over negotiation outputs. These agreements are supported by stronger compliance mechanisms, which give them a stronger pull in the implementation phase compared to the CBD (Rosendal, 2006). It is by strengthening and expanding the patent system to the new field of biotechnology that these regimes interact with the other objectives of access to, benefit sharing, and conservation of genetic resources (see Tolba, 1998, p. 144). Multinational corporations have strong economic means to and interest in pursuing broader patent protection; at the same time, they can evade governmental control and regulations that would be necessary to enforce ABS behaviour (Louwaars et al. 2009).

The WIPO negotiations, as well as the TRIPS, could indicate a situation of *forum shopping* in securing the interests of developed countries and multinational corporations in global governance and international transactions with genetic resources. Effective implementation of ABS largely depends on whether user countries will promote and create incentives for benefit sharing. With regard to user measures, disclosure represents an unused potential for synergy with the WTO (Kamau and Winter 2009; Pavoni 2013). The lack of political willingness for letting the patent system become a useful tool for making benefit sharing work reduces its potential to contribute in a positive manner to the effectiveness of the ABS regime.¹¹ The concept of ‘mutual supportiveness’ is perhaps mostly meant as an indication that international treaties should refrain from directly disrupting each other in their implementation; a more proactive understanding could mean that they seek to strengthen each other. In this light, the relationship between the CBD and TRIPS could rather be seen as a case of lacking mutual supportiveness in this second sense than one of forum shopping. We must, however, also keep in mind how users strive to avoid this link between ABS and IPR in other, sector-related forums such as the FAO.

4. The climate change regime complex: have the exclusive approaches delivered?

In contrast to the slow-moving and ideological UN climate negotiations, the process outside the UN is quite vibrant both at local, domestic, non-state and international levels. Block et al. (2012) have gone through 21 initiatives that could help bridge the emission gap by 10 GT by 2020 compared to annual emissions of 35 GT. These initiatives include green

¹¹ The imbalance between ABS and IPR is strengthened by the restrictions on access that emanate from IPRs. This further constrains the existing general lack of research and development addressing the specific needs of the poor populations in developing countries especially in the agriculture and health sectors (Oberthür et al., 2011).

financial institutions, major cities initiatives, energy efficiency initiatives, boosting renewable energy, phasing out subsidies for fossil fuel, reduce deforestation and enhance measures to combat air-pollution. Many of these initiatives have substantial co-benefits.

The formation of the regime complex can be explained in part by the failure of the comprehensive UN climate regime and a large number of new international institutions have been in operation since the 2002 Johannesburg Summit, mostly in the form of partnerships of various kinds, often with some kind of public–private participation. Some examples are the Carbon Sequestration Leadership Forum, the International Partnership for a Hydrogen Economy, the Renewable Energy and Energy Efficiency Partnerships, and the Climate and Clean Air Coalition. These and other partnerships and initiatives are more *exclusive* as well as *issue specific*, representing a *narrowing down* in terms of participation and scope by including only those actors that have direct stakes in the issues. On the other hand, they are broader in terms of *type of actors* compared to the UNFCCC as non-state actors represented both by business and environmental groups usually play a key part in these partnerships. Many analysts have praised this development, not least because of the inclusion of non-state actors. This has been seen as a way of bypassing the state centric UNFCCC process, thereby contributing to a potentially more effective approach. However, most analyses of these initiatives have applied a ‘process perspective’, giving an account of these vibrant and often creative activities without paying much attention to effectiveness: whether the partnerships actually lead to reduced emissions (Abbot 2012; Greene 2013). In the following we shall give a brief empirical account of some of the more exclusive *state centered initiatives* seen by many analysts as potentially more promising than the UNFCCC because it is easier to reach agreements within more exclusive clubs (Victor, 2011). Most emphasis will be given to the Asia Pacific Partnership as this has represented the only real potential disruptive and competing alternative to the UNFCCC.

4.1. New Clubs 1: The Asia Pacific Partnership (APP) (2006-2011)

In 2005, China, India, South Korea, Japan, Australia, and the USA agreed to set up the *Asia Pacific Partnership on Clean Development and Climate Change*. The partnership was launched on January 12, 2006, and Canada joined in 2007 as the 7th member. In other words, some of the main emitters joined forces, Kyoto partners as well as non-Kyoto ones. Equally important, this was a blend of developed as well as key developing countries: potentially a highly potent and effective club. The founders were the USA and Australia. Both governments had rejected the Kyoto Protocol, and the two heads of states shared a conservative ideology and sought alternatives to the UN approach. At the time of its creation, the APP countries collectively represented close to 50% of the world’s population, global GDP, energy consumption, as well as GHG emissions (Peay 2007). Their share of GHG emissions rose significantly up to 2011 due to the sharp increases on the part of China and India.

Officially the APP was set up as a supplement to the UN regime, but it has been documented that its founders (The US and Australia) saw it more as a potential alternative

(McGee 2010). However, this was hardly the case for China and India which have always stressed there is only one international authoritative forum to deal with this issue, the UNFCCC. This does not stop these countries from having extensive bilateral cooperation on the issue with the US and other key developing countries. Thus, their participation probably reflects a rather pragmatic approach that they could have something to gain, know-how and technology, but not much to lose. Still, it is quite surprising that they were willing to accept the basic philosophy laid down in the APP as its architecture was almost diametrically opposed to the UN regime. In addition to its exclusive nature, there were no legally binding commitments or targets; a bottom-up technology-oriented approach was adopted; and it was based on the philosophy that environmental quality improves with economic growth. Civil society organizations were not invited and in contrast to the economy-wide approach of the Kyoto Protocol, the APP represented a sectoral approach. The U.S. had the dominant position in the institutional set-up while India and China were the only partners *not* to hold the chair of a task force, reflecting who were in the driver's seat and who were in the back-seat (Karlsson-Vinkhuyzen and van Asselt 2009).

Not surprisingly, the ENGO community and other 'progressive' climate actors like the EU were deeply opposed to this initiative as it was seen as an attempt by the Bush administration to weaken the UN process (McGee 2010). No attention was paid to the extent to which the approach introduced by the APP could in fact lead to reductions in emissions. As it became clear that the APP in practice posed no real threat to the UNFCCC, policy-makers and scholars turned their focus elsewhere. In 2011 the APP terminated its work, although several individual projects continued in other forums.

Somewhat surprisingly no comprehensive study on the problem-solving effectiveness of the APP has been conducted, considering this institution is probably what have come closest to the 'club-approach', championed by key analysts. However, some research has been conducted that may shed some light on its performance. An evaluation based on interviews with APP stakeholders has been prepared for the Centre for European Policy Studies (CEPS) (Fujiwara 2012). Some of the main findings provide a crude indicator of perceptions of the APP's achievements and challenges. In short, a large majority was very satisfied with 'soft' indicators like information sharing and networking but the score was much lower on more specific – and important - measures like access to existing and new technologies as well as financing. That is, scores are much lower on indicators important for reducing emissions. This finding is supported by other studies as well (Kanie et al. (2013). There was no mechanism to evaluate GHG emissions reduction, and few activities focused on technology development and transfer, although that was supposed to be its primary function. According to one key observer: the APP was the "right idea (bringing industry to the table) but an essential ingredient, climate ambition, was lacking" (Ken Purvis, e-mail to the author, April 19, 2013).

Although problem-solving effectiveness was low, the APP may still have had some value in indicating new ways for dealing with climate change. The fact that such diverse and major emitters decided to work pragmatically together was in itself no small achievement, and

stands in stark contrast to the sterile ideological ‘blame-game’ taking place under the UN umbrella. Moreover, the APP was a major public–private partnership, implementing specific projects in a range of sectors. As such it was a prime example of the sectoral approach promoted by some actors in the UN negotiations, and it may gain increasing importance in the post-2020 UN regime. The same may well be the case for both the ‘soft’ nature of APP cooperation as well as the bottom–up approach applied. Thus, the APP may prove quite important regarding learning and diffusion of new ideas and approaches.

Why was the APP terminated? It may have lost traction due to the shift in government in the USA as President Obama has been more inclined to focus the UNFCCC and the broader MEF. Another viewpoint is that: ‘It was closed down, mainly, because of the view that that it wasn’t really getting things done, I suspect too, that the view that it was an excuse not to engage with Kyoto didn’t help APP fate. The APP always struck me as a good idea in principle but badly implemented in practice’ (David Victor, email to author, April 19, 2013). Probably China and India also had become disappointed as so little in terms of practical result on technology transfer was achieved.

What about the broader institutional framework to which parts of the APP were transferred? Parts of the projects continued under a new partnership, the Global Superior Energy Performance Partnership (GSEP). This partnership has a stronger focus on environmental performance, and the aim is to expand participation to a global scale (Fujiwara 2012). The GSEP membership is significantly broader than the APP and the EU is also a member, indicating that the political controversy characterizing the APP has been transcended, promising from the perspective of joint problem-solving. However, the initiative has been almost invisible; according to one source that has followed the process closely, so far little has come out of this process (Norichika Kanie, email to author, April 12, 2013).

4.2. New Clubs 2: Major Economies Forum (2007-present)

Another US exclusive club initiative under the Bush administration was the establishment of the Major Economies Meeting in 2007, representing an informal discussion forum for the world’s 17 largest economies (including the EU), responsible for some 80% of total GHG emissions. Although limited in terms of participation it was less exclusive and more representative than the APP, This initiative was *de facto* endorsed by the Obama administration through the establishment of the *Major Economies Forum on Energy and Climate (MEF)* in 2009. Obama has been pushing this initiative as a supplement to the UN process. Meetings have been rather frequent and like the IPEEC the MEF has focused on the development of clean technologies. However, judging from the short summaries from the meetings, it has essentially been a discussion club where the broad principles negotiated within the UNFCCC are deliberated. In fact, the first more practical task of the MEF was not launched at the April 2013 meeting (!), when participants agreed to focus on improving energy performance in buildings, not very impressive in a problem-solving perspective considering the group meets many time a year (Chair’s Summary, April 2013). It has been argued that ‘Given the stalemate in the UN climate negotiations, the best arena to strike a

workable deal is among the members of the Major Economies Forum' (Roberts and Grosso 2013: 1). In principle this sounds like a good idea, but as yet there are no indications that this forum has played such a role. Also, in contrast to the strong media attention toward the UNFCCC yearly COP's, these meetings have been invisible,

4.3. New Clubs 3: Climate and Clean Air Coalition (2012-present)

A final potentially important exclusive forum is the *Climate and Clean Air Coalition* (CCAC), launched in February 2012 by UNEP and six countries, among them the USA and Canada. The goal is to reduce the emission of black carbon, or soot. Recent research has shown that this is a much bigger contributor to climate change than previously thought, and is now regarded as the second most important source of global warming. Of particular importance is the fact that it is very short-lived, so that reductions have an immediate effect. Emissions following from black carbon represent a problem primarily in developing countries, due not least to inefficient means of cooking; serious health problems are also a result. The CCAC initiative may represent a win-win approach; its membership has expanded rapidly, to nearly thirty countries from both North and South, but no BASIC countries have yet joined. Financing has been modest, and the initiative has been met with skepticism from the 'green' community, not least since it was spearheaded by the USA and Canada, neither of them known for proactive climate policies. The CCAC has a potential to reduce black-carbon emissions, but it is too early to say whether it will make a real difference.

4.4. Increasing the scope of old clubs: G-8 and G- 20

Other more exclusive but broader forums in terms of scope and focus like the *G-8*, *the G-20* and the World Economic Forum have also focused on climate change recently. The *G-8* has regularly issued statements on the matter since 2005 and was the first forum to suggest the 2°C goal, but more recently the broader and more representative *G-20* has become more important in this regard. The *G-20* was intended as a forum for cooperation on financial matters and its membership represents 90% of global GDP. The group gained increased significance in the wake of the financial crisis in 2008; since then, heads of state have participated. After the *G-20* turned its attention to energy and climate change, it could also seem to be a more appropriate forum than the UNFCCC, as deals can more easily be brokered in such more confined forums. Detailed analysis carried out on the attention paid by the *G-20* to climate change, however, indicates otherwise (Bruynicks and Happaerts 2013). Frequent references are made to financial institutions, and some analysts have claimed that the *G-20* has been important in securing financing at COP 15 (Kim and Chung 2012). The *G-20* has also engaged closely with stakeholders, particularly business and industry. However, the increase in the *G-20* discourse on climate change has not translated into many concrete commitments as only one such commitment has been identified: the phasing-out of fuel subsidies (Bruynicks and Happaerts 2013: 8). The significance of this decision is both disputed and uncertain. Although the potential of the *G-20* should not be underestimated, so far the group has been better at discussing ambitious goals than implementing them (Barbier 2010).

The G-20, like the MEF, emphasizes its support for the UNFCCC process, indicating that its members do not see this forum as an alternative to the UN process. That supports the assumption that there exists more of a hierarchy in the climate regime complex than suggested by Keohane and Victor (2011). Moreover, the most important and controversial questions like the distinction between Annex I and non-Annex I countries, are never addressed in these G-20 statements, due to the strong differences of interests among members (Bruynicks and Happaerts 2013). In other words, differences of interest do not disappear even if there are fewer members and less bureaucracy. The G-20 would appear to have had rather limited influence on the UNFCCC as well as on the issue of climate change more generally.

5. Conclusion

A first observation regarding the climate change regime complex is that the exclusive state approaches discussed here have hardly contributed much to the reduction of GHG emissions. The regime complex approach may thus be analytically appealing and it captures the empirical reality, but based on the institutions studied here it is not obvious that the regime complex per se is more effective than the UNFCCC. Keohane and Victor (2011) argue that this complex must be managed in order to deliver, but it remains elusive who is capable of managing this complex. A second observation is that based on the cases discussed the regime complex is more hierarchical than suggested by Keohane and Victor as most of these institutions point to the UNFCCC as *the* international authoritative body. The only real contender to the UNFCCC was the APP, but it has been closed down and it was never able to deliver much compared to its original ambition. Still, there may be some relevant lessons emanating from this club for the post 2020 UNFCCC regime in terms of knowledge diffusion, the sector approach as well as shortcomings and merits of applying the bottom-up approach. A third observation is that, considering the APP is closed down, the regime complex as delineated here is largely synergetic as the other more exclusive institutions feed ideas, ambition and resources into the UNFCCC and do not represent any diverging philosophy or approach. This is certainly useful and necessary but so far it has not been sufficient in terms of enhancing the effectiveness of the UNFCCC regime much. A fourth observation is that the US has been the most important player in terms of pushing for new institutions and approaches to deal with the issue, demonstrating power and willingness and ability to pursue forum-shopping. However while President Bush Jr. may have attempted to push this in a disruptive direction, President Obama may have contributed to the more synergetic approach through his more pro-active attitude towards the issue.

The turf battles and conflicting actor interests surrounding the ABS regime go back to the early CBD negotiations and are linked to utilisation of valuable genetic material, predominantly within the pharmaceutical and agricultural sectors – health and food. Both sectors are central to human well-being and both are characterised by actors portraying either ABS or IPR as the major stumbling block to govern access, innovation and sustainable use of genetic resources.

The link between ABS regime and WHO/PIP seems to be of the more benign sort (with ample scope for mutual supportiveness): The PIP is strictly limited to virus strains important to meet pandemic diseases and hence its relationship to the ABS is seen as less of a threat to interests of providing countries. Both regimes are concerned with access to genetic material for developing vaccines and in turn access to vaccines, also for poor countries that are unable to pay for the high-cost patented pharmaceutical results.

This situation is different in the case of the FAO. Here the original delimitation on which the ITPGRFA is based was meant to govern only genetic material (seeds) in ex-situ (gene banks) that had been collected prior to the entry into force of the CBD. This scope is sought extended by the more powerful actors, both in terms of plant genetic resources related to the annex 1 food plants and for other genetic resources with relevance for food and agriculture. The arguments, which are valid for plant genetic resources for food and agriculture are however less applicable for microorganisms, aquatic, invertebrate genetic material and there is also a strong effort to include in situ material as well as wild relatives of Annex 1 plants.¹² In this sub-complex we found clear signs of turf battles and forum shopping aimed to undermine the ABS regime.

As far as the WTO/TRIPS/WIPO are concerned, complexity has hardly increased the conflict level compared to the original struggle, but neither have the users been ready to apply the much stronger IPR systems to enhance compliance with the ABS regime. The ABS-IPR relationship is thus less one of turf battles and forum shopping, than of a missed opportunity to strengthen mutual supportiveness and hence problem solving effectiveness. The three sub-complexes are all dyed in the original provider-user/ South-North conflict line.

The two regime complexes exhibit significant similarities in the sense that, as defined here, they have not contributed to enhance problem-solving effectiveness. However, apart from that, differences are more pronounced than similarities. While the climate complex evolves around exclusive or inclusive participation and approaches and adding new institutions, the biodiversity complex evolve around linkages between existing institutions. The question of establishing new institutions is on the agenda in the FAO (sector approaches to ABS) and WTO (PIP). We have also seen that parties disagree on whether existing institutions are sufficiently well equipped to deal with the ABS regime, or whether the ABS regime could or should be supported by established IPR regimes (disclosure). However, while the climate complex has evolved in a rather synergetic direction, the biodiversity complex exhibits more disruptive features, although the picture is somewhat mixed, with WHO as a largely positive example. The overall tendency, however, is that the South tends to be on the losing end due to the power of the large developed countries and their biotech industries.

¹² The ABS regime that was established with the CBD (into force 1993) is hollowed out also in temporal scope when users tie the entire regime to their ratification of the Nagoya Protocol. This means that implementation of the general ABS principles will be limited to the entry into force of the NP.

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