



Tobias Staufenberg

Points of Conflict between the climate regime
complex and Rio+20s Green Economy

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Table of contents

List of abbreviations	III-IV
List of figures	IV
1. Introduction	5
2. Theoretical Background	8
2.1. Historical Perspective	8
2.2. Constituting Factors of Regimes	10
2.3. Regime Formation	11
2.4. Regime Consequences	14
2.5. Regime Interaction	16
2.6. Regime Complexes	18
3. Climate Change Governance	23
3.1. Historical Development	24
3.1.1. Establishing a Basic Framework for Action	24
3.1.2. The Kyoto Protocol	28
3.1.2.1. Emissions Trading	30
3.1.2.2. Joint Implementation and CDM	33
3.1.3. The Post-Kyoto Process	35
3.2. The regime complex of climate change	38
4. Rio+20's Green Economy	41
4.1. Ecological Modernization	41
4.1.1. Critical Views on Ecological Modernization	44
4.1.2. Ecological Modernization and Sustainable Development	46
4.2. The Green Economy	51
4.3. The Green Economy in "The Future We Want"	53
5. Synergies and Conflicts of climate and green economy governance	57
6. Conclusion	60
References	62

List of abbreviations

AAU	Assigned Amount Unit
AIE	Accredited Independent Entity
AWG-DPA	Ad Hoc Working Group on the Durban Platform of Action
AWG-KP	Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol
AWG-LCA Convention	Ad Hoc Working Group on Long-Term Cooperative Action under the Convention
BCA	Border Carbon Adjustment
BCSD	Business Council on Sustainable Development
BTA	Border Tax Adjustment
CBD	Convention on Biological Diversity
CCX	Chicago Climate Exchange
CDM	Clean Development Mechanism
CER	Certified Emissions Reduction
CFC	Chloroflourorocarbon
COP	Conference of the Parties
CSD	Commission for Sustainable Development
DNA	Designated National Authority
ECOSOC	Economic and Social Council
ECX	European Climate Exchange
EMT	Ecological Modernization Theory
ERU	Emissions Reduction Unit
ETS	Emissions Trading Scheme
EU-ETS	European Union Emissions Trading Scheme
EUA	European Union Allowance
FAO	Food and Agriculture Organization
FSC	Forest Stewardship Council
G-20	Group of Twenty Finance Ministers and Central Bank Governors
GDP	Gross Domestic Product
GHG	Green-House-Gas

HCFC	Hydrochloroflouorocarbon
HFC	Hydroflouorocarbon
ICSU	International Council of Scientific Unions
IEA	International Energy AgencyI
IMI	International Meteorological Institute
INC	International Negotiating Committee
IPCC	Intergovernmental Panel on Climate Change
IR	International Relations
JI	Joint Implementation
JPOI	Johannesburg Plan of Implementation
LULUCF	Land-use, Land-use-Change and Forestry
MDG	Millennium Development Goal
MEF	Major Emitters Forum
MNC	Multi-national corporation
NAP	National Allocation Plan
NGO	Non-governmental organization
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
OPEC	Organization of Petrol Exporting Countries
PFC	Perflouorocarbon
PPP	Public-Private-Partnership
QUELROs	Quantitative Emission Limitation and Reduction Objectives
RGGI	Regional Greenhouse Gas Initiative
RMU	Removal Unit
SD	Sustainable Development
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention on Combating Desertification
UNCED	United Nations Conference on Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNCSD	United Nations Conference on Sustainable Development

UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNICE	Union of Industrial and Employers' Confederations of Europe
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

List of figures

Figure 1: Components of a Causal Mechanism of Institutional Interaction:	Page 17
Figure 2: Dimensions of Modern Environmental Governance:	Page 18
Figure : The Regime Complex for Climate Change:	Page 41

1. Introduction

In June 2012 delegates from 192 countries met in Rio de Janeiro, Brazil, in order to attend the United Nations Conference on Sustainable Development (UNCSD). The conference was the latest in a series of international conferences on environmental governance that had continuously shaped the agenda and political approaches of international environmental and development politics. Major stepping stones like the 1972 United Nations Conference on the Human Environment (UNCHE), the 1992 United Nations Conference on Environment and Development (UNCED) and the 2002 World Summit on Sustainable Development (WSSD), along with a series of smaller conferences and workshops as well as ground-breaking reports like "The Limits to Growth" (Meadows et al. 1972) or "Our Common Future" (WCED 1987) played a crucial role in putting environment and development on the international agenda as well as connecting the two (see Gosovic 2011 for a historical overview).

Among the main issues of international environmental governance is climate change, which has been debated on internationally since the 1950s (Andresen / Agrawala 2002: 43). The issue fully arrived at the agenda of international politics during the 1980s and has since then been one of the most intensely debated and contested issues in this field of politics. After the Intergovernmental Panel on Climate Change (IPCC) had been created in 1988, the 1992 UNCED developed the United Nations Framework Convention on Climate Change (UNFCCC), which was the first major step in institutionalizing climate change politics by establishing a legal regime on climate change at the level of the United Nations. UNFCCC was supplemented in 1997 by the Kyoto Protocol, probably the most well-known part of climate governance. The Kyoto-Protocol contains fixed reduction targets regarding greenhouse gas (GHG) emission of countries in its Annex B, along with lists of GHGs covered and sectors where emissions were to be reduced. This top-down-style of governance was influenced by the perceived success of the Montreal Protocol, that regulated the emissions of ozone depleting substances in a similar fashion (see chapter 3). Nevertheless it took until 2005 for the Kyoto Protocoll to become effective and its success is quite controversial as many major emitters (e.g. USA and China) are not covered and not all countries have achieved their respective reduction targets.

The results for climate governance were twofold: first, along with the further development of international climate governance there has also been an increase in institutions and organizations relevant for the issue-area. The introduction of market-based mechanisms for GHG mitigation has relevance for the international trade regime and the financial markets, bilateral cooperations to reduce emissions from deforestation have emerged, clubs like the Major Emitters Forum (MEF) or the G-20 have either emerged or started to deal with the issue, carbon emissions have started to play a role in internationally funded development projects, etc. All this has led to climate governance becoming increasingly complex and taking place in what has been called a "regime complex" (e.g. Raustiala / Victor 2004; Keohane / Victor 2011; Reischl 2012).

The second important development regarding international climate governance has to do with the deficiencies of the Kyoto Protocol's top-down-style of governance. More recently, especially since the infamous climate conference in Copenhagen in 2009, an alternative mode of bottom-up governance has gained importance: one that is characterized by voluntary commitments, implementation at the national level and bilateral and multilateral cooperation outside the established international system. As the Kyoto Protocol ends in 2020 the latest, this style of governance might well evolve into the dominant style of global climate governance.

At UNCSO in June 2012 one of the main issues debated was the so-called “green economy”, an approach based on ecological modernization theory that aimed to reconcile continuing economic growth with environmental concerns. Delegates in Rio wanted to create a framework for the international development agenda that contributes to poverty alleviation while at the same time steering global patterns of production and consumption towards a sustainable way. “The Future We Want” (UN 2012a), the outcome document presented at the conference, outlines a vision for a green economy that is quite open to interpretation and could best be described as vague. It nevertheless creates a weak international green economy regime. While offering ambitious governments and non-state actors occasions to push for a large-scale economic transition, it also gives corporations ample opportunities to disguise business-as-usual as their respective contribution to a sustainable future.

Furthermore – and this is my central argument – the framework for a green economy as set out at UNCSO will also have repercussions on the climate change regime complex. As the issue-areas covered by the two regimes partially overlap, they bear the potential for both, negative and positive effects. This paper aims at identifying the central structures of the regime complex for climate change and the international green economy regime and subsequently analyzing potentials for synergies and conflict. I consider this question of importance, as an analysis of these potentials could play an important role for the design of national policies as well as international policies and institutions like the future legal regime on climate change that is to be negotiated until 2015.

The structure of this thesis is as follows: After a brief methodological overview (chapter 1.1), I will first develop the theoretical background of regime complexes (chapter 2). Using this background I will elaborate on the development of the regime complex of climate change and its important structures and mechanisms (chapter 3). Subsequently I will give an overview of the green economy, including its theoretical origins and critical perspectives towards the concept (chapter 4). Based on this, I will identify potentials for synergies and conflict between the climate regime complex and the green economy regime (chapter 5) and wrap the findings up in a conclusion (chapter 6).

It seems worthwhile to give a short overview of the methods I use, in order to help the reader evaluate the findings of this paper.

Chapter 2 focuses on theoretical methods. The evolution of regime complex theory is traced in a historical approach: core developments and research questions since the late 1970s are outlined. Critical perspectives are presented when appropriate, but the focus is on developing a sound understanding to base the analysis on.

In chapter 3 the development of the climate change regime complex is traced empirically using official documents as well as literature from political scientists analyzing the issue from an institutionalist perspective.

Chapter 4 starts with a theoretical part, outlining ecological modernization theory, which is the ideological base for green economy. Criticism of the theory, especially from the perspective of sustainable development is presented as well. The second part of the chapter empirically analyzes green economy as it was framed in the forefront of and during UNCSO as well as the conference’s outcome document. This is done by using official documents from various UN organizations and national governmental bodies as well as scientific literature – mostly in the form of briefing papers – and evaluation papers by non-governmental organizations.

Chapter 5 mostly uses hermeneutics in order to interpret UNCSD's outcome document regarding possible synergies and disruptive effects with the climate change regime complex.

It should be remarked at this point, that the analysis of the potential for interaction regarding these effects is quite speculative. UNCSD's outcome document remained very vague regarding the green economy. Also there is no empirical data to be drawn from, as governments have yet to formulate green economy policies. Whether and how interaction will occur and the question of what is dominating, synergistic or disruptive interactions, is a matter of the future. It is not my aim to predict any of these effects with this thesis, but rather to highlight potentials for negative or positive effects.

2. Theoretical Background

Environmental problems like climate change, the loss of biodiversity, soil degradation, desertification or overfishing are of a global nature. This means three things: first, that their effects are not limited to national borders. The effects of a changing global climate might differ considerably in global comparison. Countries with a high gross domestic product (GDP) (i.e. industrialized and, more recently, newly industrialized countries) that might have played the biggest role in accelerating anthropogenic climate change will probably have the least problems in adapting to climate change, whereas the countries that will feel the most adverse effects are those that are the least able to adapt to climate change (developing countries) (WBGU 2000: 20).

This leads us directly to the second denotation: the causes of global environmental problems tend to be trans-boundary as well. Even though in some cases certain countries can be identified that contribute relatively more to the problem than others (e.g. like in the example of climate change), it is usually groups of countries and/or certain destructive patterns of production and consumption that are at the heart of the problem.

Last but not least, the proliferation and global nature of these problems mean that they cannot be addressed by actions at the level of the national state, but instead they have to be addressed through international cooperation. This trend has found its theoretical reflection in the notion of a denationalization of governance (see Zürn 1998). But also local or regional environmental problems might occur in a form that requires international cooperation in order to solve them: "...a regional drought catastrophe may trigger chain reactions such as agriculture production loss, famine and poverty, migration or social unrest" (Rechkemmer 2004: 29).

In international politics, the growth in numbers and effects of problems requiring international cooperation has led to a proliferation of international cooperation and a growth in numbers of international institutions, especially in the environmental sector (Gehring 2004: 219).

In political science, regime theory is dealing with the analysis of a certain type of these institutions – international regimes. The analysis of these institutions delivers an answer as to why cooperation can exist and function in an international system that is conceptualized as being characterized by full anarchy of the international system and a lack of hegemonial structures (Osterheld 2010: 5).

2.1. Historical Perspective

Regime theory developed in the late 1970s and early 1980s and due to its focus on international institutions it has been described as a neo-institutionalist theory (Zangl 2003: 131). Especially in the USA, where students of International Relations (IR) have traditionally been proficient with the theory of political 'realism' (Cohen 2008: 27) – and since the late 1970 'neorealism' (Schörnig 2010: 65) – the collapse of the Bretton Woods System of fixed exchange rates and the Oil Crises during the 1970s led to a critical discussion of the nature of international relations and especially two of the premises of neorealism: first, that international cooperation is only possible if there is a hegemonial power asserting it towards the other nations, and second, that international institutions thus are a mere instrument of

the hegemon (Zürn 2010: 131). In contrast to this, regime theory asserts that even in the absence of a hegemonial power¹ international cooperation is possible if the involved states share mutual interests and because of this it can help to reduce the problems resulting from increasing interdependence (Ibid: 132). It has been highlighted that due to the mentioned historical events, the formation of regime theory can be seen as guided by a politically motivated cognitive interest on the types of ideal policy design (Kohler-Koch 1989: 17).

The notion of interdependence is important here, as the study of mutual interdependencies between nation states was the basis from which regime theory developed. Especially the economic shocks of the 1970s led to increasing scholarly attention being paid to the ways in which states influence each other with their behavior (Spindler 2010: 99). The key to these interdependencies was seen “in the increasing fragmentation and diffusion of power in economic affairs, stemming from the growing interconnectedness of national economies. [...] States might still be central actors in international affairs, but with the expansion of the global marketplace they could no longer claim sole authority to determine outcomes.” (Cohen 2008: 28). The notion of interdependence also enhances the analytical perspective on relevant actors and contrasts with the realist notion of states as the exclusive actors in international relations: “Economic interdependence was spawning a growing swarm of transnational actors – individuals and entities whose control of resources and access to channels of communication enabled them, too, to participate meaningfully in political relationships across state lines.” (Ibid.)

On the forefront of the intellectual debate in the late 1970s were Robert Keohane and Joseph Nye who further elaborated the notion of interdependence into a perspective of “complex interdependence” (see Keohane / Nye 2004) which basically reverses the core assumptions of realism (Spindler 2010: 107): There are assumed to be “multiple channels of communications, an absence of hierarchy among issues, and a diminished role for military force” (Cohen 2008: 27). Hence, as Ernst Haas puts it, “complex interdependence implies that we can no longer explain state behavior on the basis of a given international configuration” (Haas 1980: 359). This strain of analysis has been criticized (not only from realists) for not sufficiently explaining the nature of the forces that establish interdependencies (Spindler 2010: 121). Keohane and Nye’s new way of thinking would later become to be known under the label neoliberal institutionalism (Cohen 2008: 95).

While complex interdependence can be seen as an analytical instrument for describing the structure of international relations, there was still a need to explain the conditions under which cooperation becomes likely (Zangl 2010: 138). Furthermore, it needs to be specified, what exactly cooperation means in this context: “Cooperation has been famously defined by Keohane as a mutual adjustment of behavior achieved through a formal or informal process of policy coordination” (Cohen 2008: 100). Regimes are in this sense catalysts for cooperation as they help the states to enable cooperation by securing expectations towards future behavior and by reducing the transaction costs of international cooperation (Zangl 2010: 139). The most prevalent definition of regimes has been put forward by Stephen Krasner:

“Regimes can be defined as sets of implicit or explicit principles, norms, rules, and decision-making structures around which actors’ expectations converge in a given area of international relations. Principles are beliefs of fact, causation, and rectitude. Norms are standards of behavior defined in terms of rights and obligations. Rules are specific

¹ See Keohane (1984) for a more detailed discussion of the role of hegemony and the nature of cooperation in the international sphere. One of his key arguments is that international cooperation occurs because the actors repeatedly interact with each other. Game theory’s Prisoner’s Dilemma exemplifies this: whereas single games do not make cooperation desirable, the iteration of the game makes cooperation much more likely.

prescriptions or proscriptions for action. Decision-making structures are prevailing practices for making and implementing collective choice.” (Krasner 1982: 186)

The problem with this definition is: who are these actors? It does not seem plausible to count only nation states as actors. In the case of the climate regime for example, the IPCC has played an important role in creating knowledge on which governments based their decisions. The IPCC certainly does not qualify as an actor of international relations in terms of economic or military power, but it certainly has shaped the form of the climate regime as it presents itself today. Similarly, the behavior of states in the negotiations of environmental regimes has been described as the result of discussions, lobbying and political pressure from stakeholders (Osterheld 2010: 8). It thus seems plausible to extend the analysis of international regimes to the behavior of non-state actors in addition to nation states.

The study of regimes has been criticized for not paying sufficient attention to turf-struggles and conflicting interests (Stokke 2001: 3). On a more general account, the concept of regimes has been criticized for being a) a fad, b) imprecise, c) value-biased, d) putting too much value on static elements instead of changing dimensions of politics, and e) state-centric and lacking a perspective on the socio-economic imbalances in power (see Strange 1982 for further elaboration; see also Bieling 2010).

To sum it up, the key issues we need to keep in mind when we are dealing with regimes are: regimes are a form of cooperation that produces a) principles, b) rules, c) norms and d) decision making structures. I will use the next section to exemplify this using the example of the climate change regime.

2.2. Constituting Factors of Regimes

Since we will be talking about the climate regime it makes sense to take a few examples from the climate regime in order to demonstrate the features of a regime.

We have mentioned that regimes are a form of cooperation within a certain area of international relation. A more precise term that can often be found is issue-area (e.g.; Young 1996; Stokke 2001, Young 2004; Joyner 2005; Biermann et al. 2009 just to name a few), referring to the regime relating to a certain problem or phenomenon. This term also allows for a “reasonably clear delimitation of regimes” (Stokke 2001: 2). The ultimate goal of cooperation is the solution of a problem, although it has to be remembered that some problems might be solved by a single case of cooperation whereas others might require ongoing efforts (Young 2004: 6). The latter is the case for the climate regime, as continuing efforts will be necessary to keep the amount of greenhouse gases in the atmosphere at an acceptable level.

So where exactly can we find principles, rules, norms and decision-making structures in the international regime dealing with climate change?

2 It is important to note that international regimes unlike international organizations do not qualify as actors (Zangl 2010: 133).

Increasing amounts of greenhouse gases³ in the Earth's atmosphere will lead to an increase in global average temperature, that will have impacts on various ecologic and social systems up to full scale catastrophes in the form of irreversible changes in these systems (principles).

The emissions of greenhouse gases therefore need to be monitored and regulated by cooperation as far as possible (norms).

The specific commitments by certain states to reduce their greenhouse gas emissions are fixed in an international treaty, the Kyoto Protocol, which also includes specific mechanisms by which these reductions are to be achieved (rules).

Another international treaty, the United Nations Framework Convention on Climate Change (UNFCCC) specifies rules of procedure for regular meetings of its members as well as specific processes to reach collective agreements (decision-making structures).

Now that we have developed a basic idea about what constitutes a regime, we can shift our focus to the question of how a regime actually forms in a certain issue-area⁴. Roughly during the first decade of regime study this question had been the focus of academic interest in regimes, before a shift to the study of regime effectiveness occurred during the 1990s (Stokke 2001: 1). About another decade later academic interest again shifted to the study of institutional interplay and regime complexes.

2.3. Regime Formation

It is important to note, as Beate Kohler-Koch (1989: 29) has highlighted, that the pure objective necessity/desirability of a regime for a certain issue-area does not say anything about the likelihood of the formation of a regime in that area and that believing otherwise would be a functionalist false conclusion.

Typically, regime formation is divided into three different stages: agenda-setting, negotiation and operationalization (Andresen / Agrawala 2002: 42; see chapter 3.1.1 for an example of such a process).

The first step in the formation of a regime is the successful linkage of issue-areas by those actors that have an interest in solving (or not solving) a perceived problem (Haas 1980: 371). We owe to Ernst Haas an illustrative example for this mechanism:

"The United States and the Soviet Union [...] saw no reason to link the issues of peaceful nuclear energy and the proliferation of nuclear weapons as long as each was able to control the process of technological diffusion. The desire to construct the proliferation regime arose only when the process seemed to pass out of their control." (Ibid.).

The mentioned example also highlights two important features of regime, namely the fact that they are the results of a process of communication: "International regimes are best

³ In this case carbon dioxide, methane, nitrous oxide, sulphur hexafluoride and the chemical groups of hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) and nitrogen trifluoride.

⁴ Theorists – and maybe especially those from the humanities – are prone to be influenced by their historical context. Thus differences in the focus of regime studies can be observed as Steffi Osterheld (2010: 6) has highlighted: whereas regime research in the USA tended to focus more on the decline in US hegemony and political economy more generally, studies in Europe focused more on security issues in East-West-relations and have been complemented later on by studies on international cooperation on environmental issues.

understood as decision making systems beyond the nation state that shape the expectations of relevant actors. They are more or less dynamic and evolve over time as collective decisions are made and practices of governance change." (Gehring 2004: 222; see also Gehring / Oberthür 2004: 248). Regimes generally tend to evolve in a procedural way due to four reasons: first, consensus regarding the problem often needs to be built up; second, a process allows for trial and error; third, the knowledge base regarding the regime might change; and lastly, the trust nation states need to develop for an international regime to function is usually the result of a long process of successful cooperation (Bodansky / Diring 2010: 3-4). This procedural evolution means that regimes evolve "in path-dependent, historically shaped ways" (Keohane / Victor 2011: 9).

In the study of international environmental regimes the processes of communication can be observed quite well in the international conferences that have played a vital role over the last four decades in establishing these regimes "through intensive international conference diplomacy" (Joyner 2005: 92). The example of the climate regime will later show us that leadership asserted by individuals and groups plays an important role in the formation of regimes (for an overview see Young 1991).

We should now first shift our attention to two factors that influence the formation of regimes: first, the involved actors and their respective interests and second, the institutional and organizational environment (Haas 1980: 30-35).

It has been mentioned earlier that the involved actors are not limited to national states. "Under conditions of complex interdependence, state interests will reflect the interests of the major constituencies that exert influence over state leaders" (Keohane / Victor 2010: 3). This can be firms (Tienhaara et al. 2012: 59), non-governmental organizations (Frantz / Martens 2006: 58-61), social movements (Voss 2007: 32) or sub-national government entities – often with differing positions inside and between these groups. Nevertheless, nation states are core actors in regime formation, as they are the ones signing the treaties and implementing the commitments. In analyzing the involved actors, their interests (perceived, expressed and factual) are of crucial importance. Especially the coherence of alliances formed by similar actors is important, as for example "...business conflict can severely impede efforts on the part of global corporations to prevent the creation of environmental regimes or to shape their development" (Tienhaara et al. 2012: 62).

A quite specific case of regime formation occurs when there is a hegemonial power and it uses its influence to establish a regime that serves its interest, however as "world politics lacks authoritative governmental institutions, and is characterized by pervasive uncertainty" (Keohane 1982: 332), this case is rather unlikely in contemporary politics. The Bretton Woods System as it was established after World War II might serve as an example, as the USA's influence on its creation was large and the USA used it in order to promote their own interests.

If there is a lack of a hegemonial power and the actors share converging interests in the issue-area as well as the desirable solutions, cooperation is likely to occur (Kohler-Koch 1989: 30). This is the case if all the involved actors are relatively equally impacted by the problem as for example in the rhine regime (Ibid), a case that is quite rare as individual interests tend to influence the actors perception of a problem.

If there are converging interests on the one hand, but no consensus about desired outcomes, the regime will require a lot more negotiations and even trade-offs between key actors⁵. This

5 A prominent example for this is the Kyoto Protocol. It was supposed to enter into force once it had been ratified by a minimum of 55 states that account for combined GHG emissions of 55% in relation to 1990. As it became clear that the US would not ratify it due to the Bryd-Hagel-Resolution (see Paterson 2009 and

is the case for most environmental regimes, where we are often dealing with different perceptions of environment which are usually highly normative (Kohler-Koch 1989: 31).

Much more often, interests tend to be divergent and the structure of a regime is thus the result of a long process of negotiations.

There is also a procedural dimension of regime formation that has to do with the relation of principles, norms, rules and decision-making structures. A set of principles and norms can be complemented by several sets of rules and decision-making structures and the latter two might change over time without changing the character of the regime. On the other hand, if the principles and norms change, this also changes the regime itself and thus either leads to a new regime or the abolishment of the old regime (see Osterheld 2010: 8). Ernst Haas (1980: 367-370) has highlighted the role that knowledge and changes in knowledge play in these processes.

The second important factor besides the actors that influences regime formation is the institutional and organizational environment. On an abstract basis, most "issue-specific regimes in international society are deeply embedded in overarching institutional arrangements in the sense that they assume – normally without saying explicitly so – the operation of a whole suit of broader principles and practices that constitute the deep structure of international society as a whole" (Young 1996: 2-3). States tend to follow the realist notion of international society as a society of states and thus it is hard for non-state actors to gain direct access to decision-making structures (Ibid.). Also, international bureaucracies as for example the system of the UN can play important roles in the formation of regimes (Bauer et al. 2012). There are also non-explicit rules and norms in the sense of a kind of international culture that predetermine the way regimes might or might not form. These cultural factors are not fixed, but instead "major forces for change such as globalization have made the current era a period of considerable dynamism regarding the basic character of international society." (Young 2004: 10).

If we look at the role international organizations play in the formation of regimes they can influence the process of formation in three ways: first, by creating a forum in which international cooperation can take place (as for example the UN-system does for large international conferences which might spawn a regime), second, by being an actor in itself that provides necessary preconditions for action (as for example the IPCC does for the climate regime) or third, by being an actor in the formation process of a regime (as for example WTO does for the global trade regime) (Kohler-Koch 1989: 32).

Once formed, a regime is unlikely to stay the way it is, as regime formation is a continuing and evolutionary process. Regimes can evolve along multiple lines: first, by deepening through institutional evolution, changing its legal form, increasing its precision⁶ or by further elaborating its compliance and dispute settlement mechanisms; second, by gradually broadening either its substantive scope or its membership base; and third, by further integrating its work through institutional linking or consolidation⁷ in order to achieve better coordination and better results (Bodansky / Diringier 2010: 5-11). Of course these paths of

Harrison 2010a), passed by the US Congress, Russia's ratification was supposedly 'traded' for supporting Russia's application to WTO (Paterson 2009: 141 and Henry / McIntosh Sundstrom 2010: 116).

6 A type of institutional development that can be observed in the „framework convention / protocol approach“ (Bodansky / Diringier 2010: 7) which is quite common in environmental politics: „First a framework convention is adopted, establishing the basic system of governance for a given issue area. Then, regulatory requirements are negotiated in a protocol to the convention“ (Bodansky 2011b: 2). Examples are the *United Nations Framework Convention on Climate Change* and its *Kyoto Protocol*, the *United Nations Convention on Biological Diversity* and its *Nagoya* and *Cartagena Protocols* (for the latter see Falkner 2006) or the *Vienna Convention for the Protection of the Ozone Layer* and its *Montreal Protocol*. Nevertheless, this approach is not exclusive to the sphere of environmental governance, as can be seen in the World Health Organization's *Framework Convention on Tobacco Control* and its *Protocol on Illicit Trade in Tobacco Products* (which is as of May 2012 in the final phase of international negotiations).

7 As was for example the case with the *Convention for the Protection of the Marine Environment of the North-East-Atlantic* (OSPAR-Convention) which derived out of the *Convention for the Prevention of Marine Pollution from by Dumping from Ships and Aircrafts* (Oslo Convention) and the *Convention for the Prevention of Marine Pollution from Land-Based Sources* (Paris Convention).

regime evolution are not mutually exclusive and often go hand in hand with each other (Ibid: 11-12). Transnational corporations for example can differ in the positions they take regarding accepting, supporting or challenging the implementation of a regime and can therefore play a crucial role towards the further development of regimes (Tienhaara et al. 2012: 56).

2.4. Regime Consequences

It has already been mentioned earlier, that during the 1990s the academic interest in regimes shifted its attention from the formation and change of regimes to the study of their effectiveness (Stokke 2001). At the core of these studies are questions concerning the consequences of regimes: what impacts do regimes have? When is a regime to be considered successful? What are conditions under which a regime is more likely to be successful? What kind of methodological challenges do we face in the study of regime consequences?

It should be stressed that the study of regime consequences should not stop at the consequences of a specific regime, but that we also have to pay attention to the specific processes that lead to the formation of a regime, as “[t]hese processes generate their own consequences.” (Underdal 2004: 32; italics in original).

Also, organizational analysis is an important tool when assessing a regime’s effectiveness, as “[o]rganizations are responsible in most regimes for implementing or administering the rules of the game; their actions play an important role in determining the size and character of the familiar gap between the rules on paper and the rules in use. Also organizations [...] often play critical roles in (re)forming institutional arrangements. The rules of the game in many issue areas bear the imprint of the preferences of organizations capable of wielding influence in processes of regime formation” (Young 2008: 16)

The study of regime consequences can be broadly split into two sub-fields: the study of simple regime effectiveness and the study of broader regime consequences.

The study of simple effectiveness assesses regimes “in terms of how well they perform a particular function or the extent to which they achieve their purpose” (Ibid: 27). Effectiveness studies usually leave out two things: the costs of establishing and operating a regime (efficiency) and relations of power (fairness) (Ibid). A necessary (but not sufficient) condition for effectiveness is strength, that is a) the ability of a regime to constrain certain forms of behavior and b) its ability to subject these forms to collective governance instead of individual decisions (Ibid: 29). A second important factor that determines a regime’s effectiveness is its robustness, that is its ability “to cope with challenges and survive stress with its functioning capacity intact”. (Ibid: 30). Robustness depends on a couple of factors, the most important ones being legitimacy, resilience and adaptability (Ibid: 30-31).

The study of simple effectiveness is carried out to a large degree through case studies, but one problem in this area is the lack of a general methodology and a tendency of scientists to create too ambitious research designs that in turn reduce the comparability of the studies (see Andresen / Wettestad 2004 for their experiences from over a decade as case study workers on regime effectiveness). Jon Hovi (2004) has also highlighted that the comparability of studies further decreases by a lack of a common definition of the term ‘mechanism’, as well as researchers not making the effort to explicitly define their understanding of it. Furthermore, the analysis of regime effectiveness gets complicated even more by increasing institutional interaction between different regimes and an increasing overlap of several regimes addressing similar issue-areas. Especially in the field of environmental regimes,

international cooperation is increasingly characterized by nested, overlapping and parallel institutions (Reischl 2012: 2). I will return to this phenomenon in the next chapter when dealing with regime complexes.

The unit of analysis thus needs to be carefully defined when conducting studies about the effectiveness of regimes and we need to remember “that the consequences we attribute to a particular regime will often be ‘co-products’ in the sense described above” (Underdal 2004: 33; quotation marks in original).

If we want to analyze a regime’s effectiveness we first need to clarify what the regime has actually produced in order to solve the problems in its respective issue-area. Therefore an analysis of the output of a regime is always the first step. The actual effects of the output can be analyzed on two levels: first, the regime’s outcome, that is its effect on human behavior, and second, the regime’s impact, that is the level to which it has actually solved the problem it is addressing (Ibid: 34). The assessment of the latter can get quite complicated for political scientists as many regimes – especially in the environmental field – address issues that require substantial knowledge in other disciplines (Ibid.). The climate regime again serves as a good example in this case: due to the complex nature of the problem, political decision making needs to be based on the results of a broad field of natural and social sciences. The IPCC was established after the 1988 Toronto Conference of the Atmosphere (Andresen / Agrawala 2002) in order to provide this expert advice and to give the international community a sound – or positivist⁸ – scientific base for their collective as well as the respective national states’ actions.

In assessing the effectiveness of a regime, Arild Underdal (2004: 40-42) has identified three factors determining the variance in the effectiveness of different regimes: “the nature of the problem, characteristics of the group of parties, and properties of the regime itself” (Ibid: 40). There does not seem to be academic consensus concerning the methodological tools best used in the assessment of regime effectiveness, although Underdal argues that the complex nature of regimes requires to “find creative ways of combining methodological strategies that are sometimes seen as competing and embedded in incompatible epistemological positions” (Ibid: 42).

The second major sub-field of the study of regime consequences is concerned with the broader consequences of regimes. “Broader consequences research focuses on regime effects that occur beyond a given regime and the issue area governed by it. It is an attempt to expand the study of regime effectiveness to those effects that have been ignored so far.” (Gehring 2004: 220).

This type of research focuses on four areas (Ibid: 225-233): First, the impact regimes have on other issue-areas beyond their own⁹, second, the influence international regimes assert on each other¹⁰, third, the impact that regimes have on one or several domestic political systems¹¹, and fourth, the influence a regime exerts on the international system itself¹². For

8 For the role of positivism and the relationship between politics and science see Dessler / Parson 2010

9 For example, if we look at the efforts to regulate the benefits derived from biological resources, these are not only affected by the biodiversity regime (especially the Convention on Biological Diversity’s Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization), by the international trade regime and especially the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) and also by two agreements under the Food and Agriculture Organization of the United Nations (FAO). See Raustiala / Victor 2004 for a detailed analysis of the international regulations regarding plant genetic resources.

10 This is especially the case in the field of environmental regimes, where there are frequent overlaps as can be seen in the efforts to prevent pollution of the North-East Atlantic. These are influenced by various regimes (e.g. OSPARCOM, the Stockholm Convention, the Convention on Long-Range Transboundary Air Pollution, the Central Commission for Navigation on the Rhine). In this case the EU also plays an important role with its Marine Strategy Framework Directive as well as with the EU’s member states implementing the directive on the national level.

11 For example, labour standards introduced by the ILO may affect the labour legislation of a national state, as their existence gives non-state actors a point of reference in relation to which they can mobilize support by actively campaigning for legislative changes.

the questions addressed by this paper the second type of interaction is of special interest as the Green Economy framework developed at UNCSD bears the characteristics of a regime and thus the interaction with the existing climate regime (or climate regime complex as we will later find out) can be framed as an interaction between regimes. For this reason, during the course of the next chapter, I shall elaborate on the area of regime interaction.

2.5. Regime Interaction

The number of international institutions is constantly increasing and even though they are usually established separately from each other, they increasingly affect each others' performances (Gehring / Oberthür 2004: 247). An example is the transnational forestry regime based on the Forest Stewardship Council (FSC) which incorporates labor standards and by this contributes to implementing the core labor norms of the International Labor Organization (ILO) (Pattberg 2012: 106).

Building upon the established approaches for the analysis of regime consequences mentioned above, Thomas Gehring and Sebastian Oberthür (2009) have established a framework for analyzing the causal mechanisms of regime interaction.

For them "[i]nstitutional interaction will exist if one institution (the source institution) affects the development or performance of another institution (the target institution). (...) Causation implies that an effect observed within the target institution or its issue-area is attributable to another institution so that we would not expect the effect to occur in the absence of the source institution." (Ibid: 127). The effects of institutional interaction on the target institution can be positive (that is creating synergies), negative (that is creating disruption) or neutral (that is not clearly supporting or hindering the target institution's objectives) (Ibid: 128). Causal interactions of this type are helpful for including a perspective on actors in the analysis of institutional interactions and thus provide a link between the macro-level (the institutions) and the micro-level (the actors in the institutions). Figure 1 visualizes the processes of these types of mechanisms.

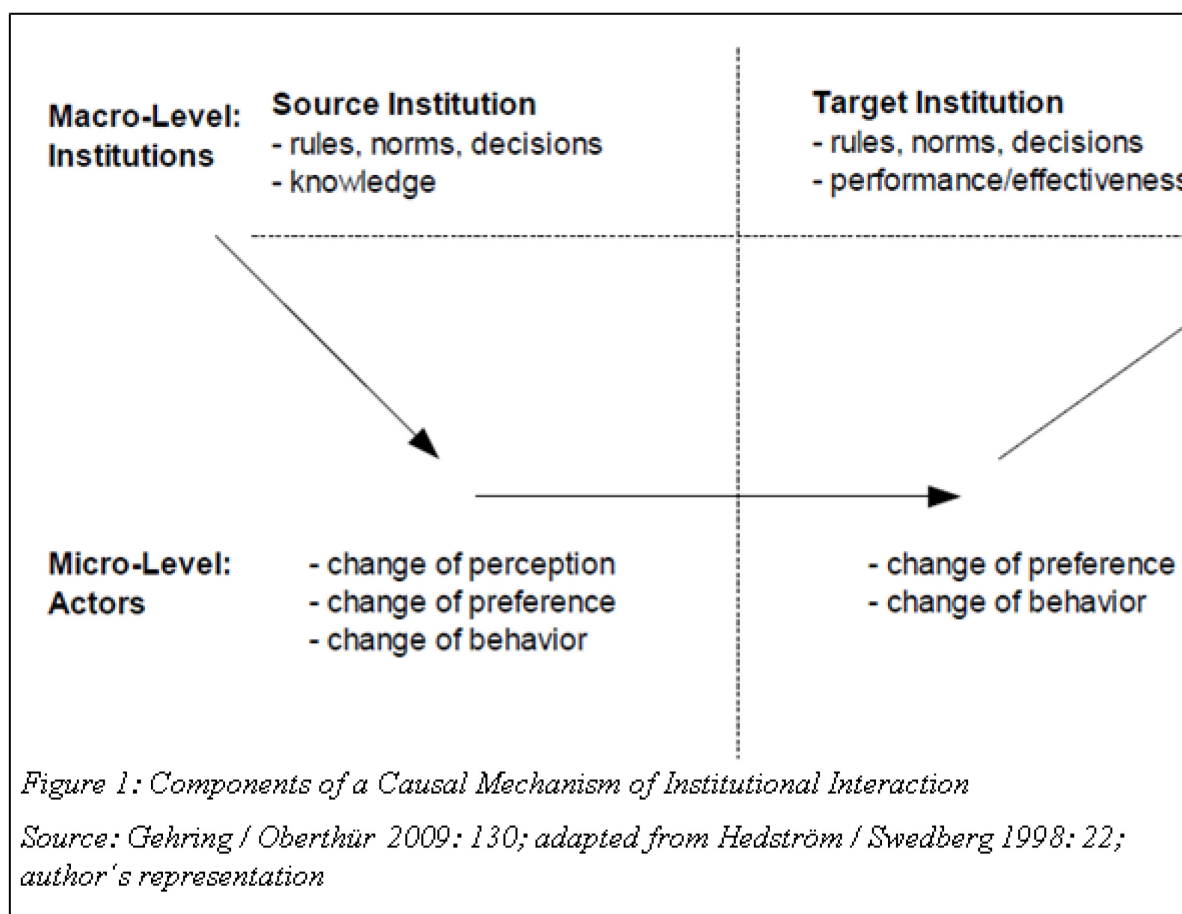
Gehring and Oberthür furthermore highlight that institutional interaction can affect all three levels of effectiveness, namely the output, the outcome and the impact of an institution (Gehring / Oberthür 2009: 131).

A challenge for the study of regime interaction is the nature of these interactions: usually, these situations include a group of several interactions and thus need to be broken down into several single interactions as they would otherwise not qualify for an appropriate unit of analysis (Gehring / Oberthür 2004: 250). Gehring and Oberthür (2009) have elaborated four ideal and mutually exclusive types of institutional interactions that one can use for analyzing cases of institutional interaction:

first, there is cognitive interaction which is concerned with the provision of information or ideas and that can create synergistic, neutral or disruptive effects; second, there is interaction through commitment which is concerned with vertical or horizontal policy diffusion and that leads to synergistic effects; third, there is behavioral interaction which deals with behavioral adjustments by states and non-state actors that can lead to synergistic or disruptive effects; and fourth, there is impact-level interaction, that is the influence on the ultimate governance

12 One might think of the effects regimes have on state sovereignty, the reduction of conflict in the international system, the empowerment of non-state actors and organizations and the effects on the increasing juridification of the international system (Gehring 2004: 231).

target of an institution and that can be synergistic, disruptive or neutral (see Gehring / Oberthür 2009 for further elaboration).



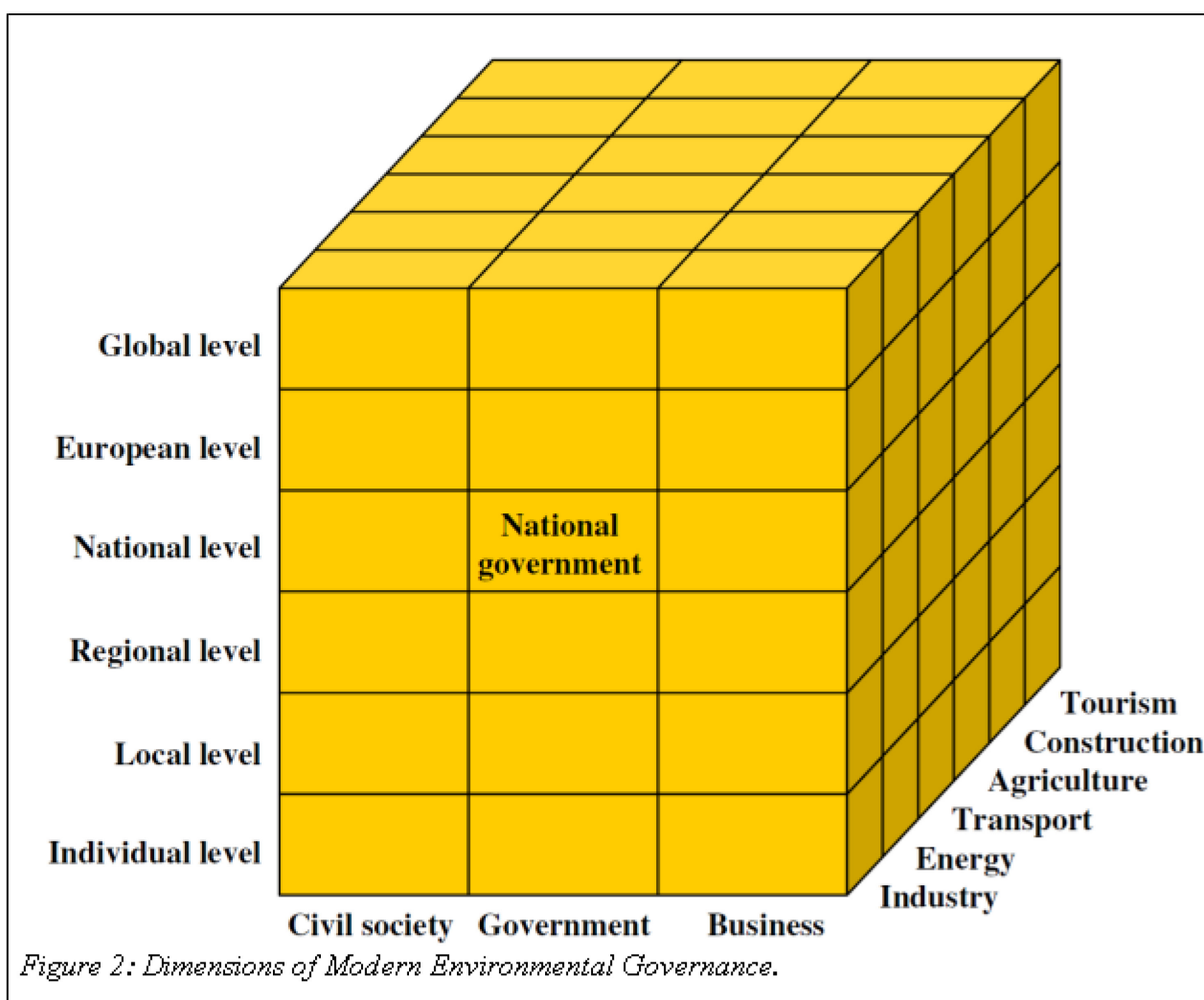
A problem with these classifications of interactions is that they are ideal and mutually exclusive. It seems unlikely that interactions between regimes will be limited to one of these mechanisms at a time.

This could theoretically be solved by breaking down a chain of interactions into several single steps, but the question is, how to actually measure and identify these types of interactions. Cognitive interaction for example might not always be clearly visible and thus seems hard to observe.

Nevertheless does the framework by Gehring and Oberthür (2004 and 2009) deliver a solid basis for the analysis of regime interactions. Due to the lack of a common methodology it seems like a good starting point for future research in this field and thus might contribute to the emergence of comparable quantitative research and ultimately more general results regarding the mechanisms that drive the interaction of regimes.

Ultimately the study of interactions between regimes has led to the insight that the international sphere is witnessing an increasing “density of international regimes” (Young 1996: 1) that increasingly affect each other. The reasons for this development have been twofold: first, due to a growing complexity on the international level, the number of problems that are intertwined with others has been increasing (Haas, 2004: 2), and second, there has been a “proliferation of new political actors and a diffusion of political authority over major governance functions, especially in the environmental sphere. These new actors include NGOs, MNCs, organized transnational scientific networks known as epistemic communities, global policy networks, and selective international institutions that are capable of exercising discretionary behavior independently of their dominant member states.” (Ibid). Since the late 1970s the constellations of actors in the field of environmental governance have become increasingly complex as environmental governance has evolved from a unidirectional process of governments regulating polluters into a multi-level interplay of governments, civil-society and business actors (Jänicke 2008: 561). The cube in Figure 2 demonstrates how multi-level

governance structures deal with several issue-areas and provide opportunities to exert pressure on decision makers from multiple directions and across multiple issue-areas.



Issue-areas like climate change (see Keohane / Victor 2011), forestry (see Reischl 2012; also Pattberg 2012) or plant genetic resources (see Raustiala / Victor 2004) have evolved into complex systems¹³ with an increasing number of actors and are covered by a multitude of regimes, thus leading to the emergence of what is called a regime complex. These institutional complexes shall be the focus of the next section.

2.6. Regime Complexes

The first notion of the term regime complex is commonly attributed (see for example Keohane / Victor 2011; Reischl 2012; Abbott 2011) to Kal Raustiala and David G. Victor who used the term to describe the international regulatory framework governing plant genetic resources (2004). Scholars of international regimes have nevertheless been thinking about similar types of structures since the 1990s and framed them for example as a growing “density of international regimes” (Young 1996) or regime “overlap” (Stokke 1999). They were led by the insight that “international cooperation in general has increasingly become more institutionalized over the past decades” (Reischl 2012: 2). Neo-gramscians have conducted

¹³ “A complex system is a system with a large number of elements, building blocks or agents capable of interacting with each other and with their environment. Scholars who study complexity note that within complex systems, knowledge about the elementary building blocks – a termite, a neutron, a single rule – does not even give a glimpse of the behavior of the whole, and may lead to faulty understandings of the building blocks themselves. (...) [W]e can study the Kyoto Protocol, but doing so will not ultimately help us understand how global warming gets addressed.” (Alter / Meunier 2009: 14)

similar analyzes albeit with a focus on the role regulation and its initiators' interests play in existing and upcoming markets (e.g. Görg / Brand 2006).

Instead of focusing on the analysis of individual institutions, issue-areas or political actors, the study of regime complexes has been described as a rather holistic or systemic approach to the study of international cooperation: "To think in terms of international regime complexity is to study interactive relationships and analyze how the whole shapes the pieces" (Alter / Meunier 2009: 21).

With Raustiala and Victor we can define a regime complex as "an array of partially overlapping and nonhierarchical institutions governing a particular issue-area. Regime complexes are marked by the existence of several legal agreements that are created and maintained in distinct fora with participation of different sets of actors. The rules in these elemental regimes functionally overlap, yet there is no agreed upon hierarchy for resolving conflicts between rules. Disaggregated decision making in the international legal system means that agreements reached in one forum do not automatically extend to, or clearly trump, agreements developed in other forums [sic]." (Raustiala / Victor 2004: 279).¹⁴

Building on this definition, the increasing number of actors and rules in decision-making processes for international cooperation has been conceptualized as "international regime complexity" (Alter / Meunier 2009: 13). "International regime complexity refers to the presence of nested, partially overlapping, and parallel international regimes that are not hierarchically ordered. Although rule complexity also exists in the domestic realm, the lack of hierarchy distinguishes international regime complexity, making it harder to resolve where political authority over an issue resides" (Ibid.).

The formation of a regime complex is the result of divergent interests of the involved actors. Even if a consensus regarding the principles guiding action in a certain issue-area is reached, there might still be differing opinions about the rules and norms that should be applied. Only if there is broad consensus about these issues among all major actors, a comprehensive regime as we have defined it in chapter 2.3 might form: "Powerful demand by all key players around a common objective yields a single institution and no viable rivals" (Keohane / Victor 2010: 4). But often the relevant actors might not agree about the rules, norms and decision-making structures of a regime, as was the case in the formation of the climate regime complex (see Andresen / Agrawala 2002 for an introduction). One approach applied by policy makers in these cases is the establishment of a framework convention, in scientific research often referred to as a nested regime. These do not initially contain any specific obligations and can later be complemented by protocols containing more specific regulations as the result of further negotiations.

Karen Alter and Sophie Meunier (2009: 14) have argued that other reasons for the formation of regime complexes can be spillovers from one topic to another, sub-groups of states desiring stronger regulations and thus forming separate agreements, or the negotiation of linkages between different agreements in order to make them more desirable. Additionally, states can be interested in the creation of "strategic inconsistencies" (Raustiala / Victor 2004: 301), that is agreements creating insecurity about how to interpret the regulations in a certain issue-area. This is to effectively prevent cooperation in the issue-area. A similar mechanism could also be used to create several agreements for the same issue-area in order to secure cooperation should one of them fail (Alter / Meunier 2009: 14).

14 The regime complex for plant genetic resources for example that Raustiala and Victor analyze is composed of five elemental regimes that share several common overlaps: the 1961 *International Convention for the Protection of New Varieties of Plants* (UPOV), the United Nations Food and Agriculture Organization (FAO)'s 1983 *International Undertaking on Plant Genetic Resources* and its 2002 *International Treaty on Plant Genetic Resources*, the *Consultative Group on International Agriculture Research* (CGIAR), the World Trade Organization (WTO)'s *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS) and the 1992 *United Nations Convention on Biological Diversity* (CBD) (Raustiala / Victor 2004: 283-284)

Especially in large issue-areas like climate change or biodiversity it is likely that there are several narrow regimes covering the issues or sub-issues in these fields. This leads to a fragmentation of governance that is likely to produce synergies but also disruptions, if institutions are not carefully designed. Another problem of these complex regulatory bodies is “forum shifting” (Keohane / Victor 2010: 4), sometimes also referred to as “forum shopping” (Busch 2007: 736, see also Raustiala / Victor 2004: 299-300). It describes “strategies where actors select international venues based on where they are best able to promote specific policy preferences, with the goal of eliciting a decision that favors their interest” (Alter / Meunier 2009: 16). Examples for this can be found in international trade disputes (see Busch 2007 and Raustiala / Victor 2004 for examples). A potential danger of forum shopping is the induction of a race to the bottom as schemes compete by lowering their standards (Abbott 2011: 13). Even though forum shopping is arguably the most commonly discussed consequence of regime complexes, scholars still argue how common it is in reality (Alter / Meunier 2009: 17).

To sum up, regime complexes are likely to exist where there are diverging interests and a lack of a hegemonial power¹⁵: “When patterns of interests (shaped by beliefs constrained by information and weighted by power) diverge to a greater or lesser extent, major actors may prefer a regime complex to any feasible comprehensive, highly integrated, institution” (Keohane / Victor 2010: 4).

The formation of a regime complex is thus the result of competition among actors aiming for more integration and those aiming for more fragmentation. If there is consensus regarding the appropriate ways to deal with an issue-area, even under international regime complexity, actors will quickly move to coordinate and harmonize the different rules (Alter / Meunier 2009: 20)

Regime complexes have two advantages over single regimes: first, they are more flexible in the sense that they can adapt to specific conditions and certain actors or coalitions more easily and, second, they can adapt more easily to changing circumstances, as they need not to change the whole regime (Keohane / Victor 2011: 16)

Now that we have developed an understanding of what regime complexes are, an important question remains: do regime complexes matter? Karen Alter and Sophie Meunier have addressed the question of regime complex consequences in a study and have identified five ways in which regime complexity “changes the strategies and dynamic interactions of actors” (2009):

First, implementation politics become more important. Due to the fragmentation and ambiguity of rules and law, states implementation behavior influences which rules will become dominant or marginalized.

Second, cross institutional strategies like forum shopping, strategic inconsistencies and regime shifting are becoming possible. The latter are efforts (often pursued by groups of states, e.g. the G77) to reshape the global structure of rules as opposed to forum shopping which serves individual actors’ goals.

Third, complexity creates increasing importance of and reliance on experts (experts, lawyers and NGOs). Since causal effects are not always easy to identify, unintended feedback effects are becoming more likely and there are also ample opportunities for actors to actively engage in the framing of political issues.

¹⁵ It has to be noted though that the forming processes of regime complexes are far from being fair and democratic processes. Instead dominant powers are able to exert relatively more influence on these processes as well as on their outcomes than weaker actors (Drezner 2009).

Fourth, the multitude of international venues creates more opportunities for interaction among government representatives and thus increases the influence of social networks. This can have positive effects, e.g. because trust (a necessary condition for continued international cooperation) can be built up, as well as negative effects, e.g. by inter- and intra-group rivalries and a lack of accountability mechanisms.

Fifth, regime complexity can have several feedback effects: it might create competition among actors and institutions, increase chances for unintended reverberations in other domains, undermine accountability, increase the value of loyalty and trust and open up multiple-exit strategies for actors, e.g. through non-compliance, regime shifting and the withdrawal from international organizations.

Keohane and Victor (2011) have also suggested a set of six criteria for the evaluation of regime complexes: coherence¹⁶; accountability¹⁷; determinacy¹⁸; sustainability¹⁹; epistemic quality²⁰; and fairness²¹ (Ibid: 16-17). It should be noted though, that the nature of international relations makes it unlikely for a regime complex to rank highly regarding all these normative criteria (Ibid. 17).

Of course regime complex theory has not been without criticism: one has been the focus of regime complex literature on inter-state regimes (Abbott 2011: 2). This critique is not unique to regime complex theory, but has also been forwarded towards regime theory in general (Andonova et al. 2009: 54). Building on James Rosenau's (2000; for an overview see also Rosenau / Czempiel 1992) famous distinction between government and governance it has been argued that "[g]lobal governance can (...) take place with and without the state" (Ibid.: 55)²². It is characterized by the emergence and participation of new actors that have only been active at the sub-national level (Biermann / Pattberg 2012: 6). More recently, research has also begun to conceptualize institutions and organizations at the international level as actors in themselves. An example is the scholarly attention that is being paid to the autonomy and authority of international bureaucracies (Bauer et al. 2012: 30; see also Bauer et al. 2009). Also, global corporations play important roles in global environmental politics, as they can use multiple ways to constructively or obstructively influence the negotiation and implementation of international regulation (Tiehaara et al. 2012).

The distinction between global governance²³ with its multiple actors and regime theory with its state-centered perspective on political actors are not mutually exclusive though because,

16 "A regime whose components are compatible and mutually reinforcing is coherent." (Keohane / Victor 2011: 16)

17 "The elements of the regime complex should be accountable to relevant audiences, including not just states but non-governmental organizations and publics. (...) Accountability helps create legitimacy (which may be in shorter supply in the absence of a single unified regime) and can also help create shared information that lowers uncertainty." (Ibid: 17)

18 "Determinacy is important both to enhance compliance and to reduce uncertainty in general. (...) Where rules are determinate it will be easier for governments and firms to invest resources in putting those rules into practice (...)" (Ibid.)

19 "Sustainable regimes have components that reinforce one another and may also build in redundancy, to withstand shocks." (Ibid.).

20 "Like comprehensive regimes, regime complexes can vary in epistemic quality, particularly in the consistency between their rules and scientific knowledge. Epistemic quality is important for legitimacy as well as effectiveness." (Ibid.)

21 "Since multilateral institutions always reflect disparities of power and interests, they never perfectly reflect abstract normative standards of fairness, and should not be evaluated on the basis of whether they achieve this utopian objective. But they should provide benefits widely, and not discriminate against states that are willing to cooperate." (Ibid.)

22 Bernhard Zangl and Michael Zürn have subsumed the concept of global governance in a quite simple (and of course simplified) yet instructive equation: "*Global Governance = Governance by + Governance with + Governance without Governments*" (2004: 15; italics in original).

23 Biermann and Pattberg (2012) have argued that there are two basic understandings underlying the academic research towards the concept of Global Governance: (1) an analytical understanding that focuses on describing „...distinct qualities of current world politics, such as non-hierarchical steering modes and the inclusion of private actors, both for-profit and nonprofit" (Ibid: 3). (2) A normative understanding "...that starts from a perceived inadequacy of political responses to globalization. From this perspective, global governance is first and foremost a political program to regain the necessary steering capacity for problem solving in the postmodern age. (...) Global Governance is seen here as a solution, a tool that politicians need to develop and employ to solve the problems that globalization has brought about" (Ibid.). The criticism mentioned above is clearly originating from the analytical understanding. This is however by far not the appropriate place to engage in an in-depth discussion of the concept of global governance and its emergence, further arguments and its critics' positions.

as we have mentioned earlier, “state interests will reflect the interests of the major constituencies that exert influence over state leaders” (Keohane / Victor 2010: 3). We thus have to keep in mind that negotiation processes are always influenced by non state actors (NGOs, civil society, the media) and have to analyze their influence on these processes as long as they are operationalizable.

The issue of regime scholarship focusing on inter-state regimes can also be solved by – as Kenneth Abbott (2011) has proposed it – distinguishing between two types of regime theory: first, “traditional regime theory” (Ibid.: 16) that focuses on inter-state relations and organizational competition, and second, a “broader version of regime complex theory” (Ibid.) that also includes non-state actors and questions of polycentrism, fragmentation and decentralization. Regime complex theory can thus be seen as an attempt to merge the state-centered regime theory with the multiple-actors-perspective of global governance. It also seems to be worthwhile to include a perspective on transnational regimes which are heavily influenced by non-state actors, e.g. the international standards regime (Pattberg 2012: 99). We shall later see in the analysis of the regime complex of climate change (chapter 3.2) how these perspectives enhance the traditional perspective.

A more substantial point of criticism regarding regime theory is the argument that a multitude of international regulations and their respective arenas (as in a regime complex) might overburden developing countries which often lack the ability to build up expertise in all of these arenas (Messner / Nuscheler 2003: 10).

A further point of criticism has been the focus on legally binding regulations and a lack of attention towards soft-law (Abbott 2011: 2). As governments have moved away from “command and control style regulation” (Tienhaara et al.: 2012: 47) and regulation at the international level is lacking accountability mechanisms, the dominating conflict-ridden discourse of economy-versus-ecology that dominated during the 1970s and 1980s (Huber 2011a: 137) has been appeased and new types of partnerships have emerged. Transnational (business and non-business) actors play an important role in environmental governance (Andonova et al. 2009; Bäckstrand et al. 2012 and Tienhaara et al. 2012), not only since the promulgation of so called public-private-partnerships (PPPs) after the 2002 World Summit on Sustainable Development (WSSD) in Johannesburg. Nevertheless, the concept of regime complexes as we have outlined it above should be flexible enough to take account of these actors, e.g. by acknowledging the important role of experts, lawyers and NGOs due to the increasing complexity of the international realm.

From a perspective derived from critical theories like neo-marxism or feminism one could argue that institutionalist theories (like regime complex theory) tend not to pay sufficient attention to existing relations of power. Even if we argue from a “broader version on regime complex theory” (Abbot 2011: 16) that incorporates non-state actors, this still does not tell us anything about the informal structures of society, like lobby-networks, gender relations, the representation and participation of minorities in decision-making or the inequality in access to information. A prominent example in this case would be the political and financial power of large corporations in the USA that exercise large influence on the behavior of the government regarding the mitigation of GHG emissions (Lander 2011: 9). Besides the role of the lobbyist, global corporations can also be communicators or regulators and thus influence the formation of regimes positively or negatively (Tienhaara et al. 2012: 63).

At this point I shall conclude the theoretical elaborations on regimes and regime complexes and we will now shift our attention towards the regime complex that is relevant for this analysis: the regime complex for climate change.

3. Climate Change Governance

Climate change is among the most pressing of contemporary global environmental problems. It could even be seen as the archetype of a global environmental problem, as it is trans-boundary in nature, meaning that causes and effects might not necessarily be located in the same country and also do not stop at a state's border. Furthermore it is a problem that can only be addressed by international cooperation, because the reduction of greenhouse gases is very much prone to free-riding behavior if it is unregulated. To use Garrett Hardin's famous term, climate change can be described as a "tragedy of the commons" (see Hardin 1968). The anthropogenic emissions of greenhouse gases have increased since the industrial revolution and have had a measurable impact on the increase in global average temperatures that is scientifically well studied and proven (IPCC 2007: 31). The IPCC has subsumed the results of its research since 1988:

"There is very high confidence that the global average net effect of human activities since 1750 has been one of warming." (Ibid.: 37)

The main drivers of increasing GHG emissions are population growth and GDP growth. Building on data from the World Bank's (2011) World Development Indicators and the International Energy Agency (IEA)'s (2011) World Energy Outlook, Ronald B. Mitchell estimates that "[b]etween 1996 and 2006, global CO² emissions grew by 2,4% per year. That trend was driven by annual per capita GDP growth of 1,8% and annual population growth of 1,3%, generating aggregate GDP growth of 3,1% that was only partially offset by technological improvements that decreased emissions per dollar by 0,7%. (...) In both developed and developing countries since 2000 (including during the recent recession), production techniques have led to higher emissions per unit of energy at the same time that affluence (per capita income) and consumption (energy used per dollar) have increased" (2012: 25; brackets and italics in original).

Climate change poses risks for human life on Earth, like increasing possibilities of extreme weather, rising sea-levels, increasing and more severe droughts, health risks, and many more, some of which we might not even know about yet due to the complexity of the issue (for an overview of the possible consequences see IPCC 2007). It may also affect the development dynamics in many poor countries by causing pressure on resources (e.g. rising food prices), aggravate destitution, migration, and conflict, or by affecting political stability and governance structures (Sterner et al. 2012: 72). Climate change also has the potential to create new international conflicts, e.g. by increasing climate-related transnational migration, or intensifying existing conflicts as in the case of Darfur (Welzer 2007: 94-99). Also non-human life on Earth faces severe challenges as animals and plants have to struggle with rising temperatures as well²⁴, the bleaching of corals due to increasing ocean temperature and acidification being one of the most famous examples of this (Anthony et al. 2011). All these effects are pervasive (Sachs 2011: 5). Climate change is not the one single cause for many of these trends (e.g. rising food prices are also influenced by rising oil prices), but as the EU

²⁴ Unfortunately the issues of *climate change* and *biodiversity* are addressed by different international regimes that do refer to each other, but the legal linkage of the two remains insufficient as "...existing statutes and laws that deal with biodiversity are not up to the job of slowing climate change to protect the species and ecosystems endangered by global warming. Conversely, climate change law, although motivated in part by biodiversity and ecosystem concerns, does not incorporate biodiversity in shaping adaptation and mitigation regulations." (Hodas 2005: 6)

Commissioner for Climate Action Connie Hedegaard put it: “It is a threat multiplier.” (2011: 70).

3.1. Historical Development

I shall first give an overview of the historical development of the regime complex for climate change, before I will turn the attention towards the contemporary structure of this complex. Building on Daniel Bodansky’s (2010) argument of a three stage process of climate change regime formation, the historical dimension shall be analyzed as being divided into three different stages: the establishment of a basic framework for action, the Kyoto phase and the post-Kyoto phase.

3.1.1. Establishing a Basic Framework for Action

Building on the concept of political leadership²⁵, Steinar Andresen and Shardul Agrawala (2002) have argued that states were not the only important actors in the formation of the climate regime. Especially during the early phases of the formation process (agenda-setting phase), there was much room for intellectual leadership by individuals and non state actors (Ibid.). “An intellectual leader is an individual who produces intellectual capital or generative systems of thought that shape the perspectives of those who participate in institutional bargaining and, in so doing, plays an important role in determining the success or failure of efforts to reach agreement on the terms of constitutional contracts in international society” (Young 1991: 298).

The agenda setting period of the regime formation process can be traced back surprisingly far: during the 1950s Roger Revelle and Hans Suess, two oceanographers, analyzed the oceanic uptake of radioactive carbon that had been released during the atmospheric testing of nuclear weapons (Andresen / Agrawala 2002: 43). Their results led them to the conclusion that anthropogenic emissions of large amounts of carbon will have strong effects on the global climate and the weather (Ibid.).

The discussion remained confined to certain epistemic communities and arenas like the World Meteorological Organization (WMO) and the International Council of Scientific Unions (ICSU) (Ibid.). It did not gain much public attention during the 1960s and 1970s, part of which might be attributed to the global public sphere being occupied with the East-West-Conflict and consequences of climate change like increasing severity of weather extremes not yet being visible or discursively linked to climate change. By the mid 1980s a crucial figure in the formation of the climate regime emerged: Mostafa Tolba, at that point executive director of the United Nations Environment Program (UNEP), played an important role – together with his organization²⁶ – by deciding to use UNEP funds to sponsor an international assessment by the International Meteorological Institute (IMI) (Ibid.).

²⁵ Leadership can be defined as “the power of one or a few individuals to induce a group to adopt a particular line of policy” (Andresen / Agrawala 2002: 41). It should be noted though, that leadership is not necessarily confined to individuals or small groups. During international negotiations individuals can assert individual leadership, but they can also be acting on behalf of governments and thus simply be agents of these.

²⁶ UNEP has been characterized as a very important agenda setter in global environmental governance: “In spite of its rather marginal status within the United Nations System and its peripheral location in Nairobi, UNEP has developed the capacity to act as the foremost knowledge broker of environmental governance at the international level” (Bauer et al. 2012: 33).

The results of this assessment were presented in 1985 in Villach, Austria, and gave a strong impetus on international climate politics in general and more specific on the 1988 Toronto Conference of the Atmosphere that marked the “high water mark of the influence [of] environmental advocacy groups” (Ibid: 44). One of the central results of the conference was the establishment of the IPCC by UNEP and WMO about six months later in November 1988 (Ibid.).

As mentioned earlier, the IPCC was established in order to give the international community scientific advice. It is thus an example of how complexity creates an increasing need for and reliance on experts. The IPCC produces regular Assessment Reports to fulfill its duty and has so far produced four of these reports²⁷. A key feature of the IPCC’s reports is their political negotiation²⁸, which has been argued to increase the legitimacy and scientific credibility of the highly conflictual climate governance (Gupta et al. 2012: 86). The first of these reports played an important role in highlighting the importance of the issue and bringing national governments to the negotiating table for a global climate convention. It thus marks the end of the agenda-setting stage of the regime formation process and the beginning of the negotiation stage (Andresen / Agrawala 2002: 45). As scientific knowledge about the anthropogenic effects of climate change improved, this has been highlighted by the reports. Nevertheless, the overall influence of the IPCC on the formation of the climate regime after the agenda-setting phase has been limited, due to its consensus-based working structure (Gupta et al. 2012: 86). The Fourth Assessment Report concluded that “[w]arming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global average sea level” (IPCC 2007: 72). Furthermore, “[m]ost of the global average warming over the past 50 years is very likely due to anthropogenic GHG increases and it is likely that there is a discernible human-induced warming averaged over each continent (except Antarctica)” (Ibid.; italics in original). The validity of these results has repeatedly been questioned by so called climate sceptics. A close analysis of these criticisms reveals most of them²⁹ to be campaigns by business-funded right wing think tanks (Harrison 2010a: 69) or associations like the Global Climate Coalition (see Newell 2000 and Paterson 2009), a now closed group of (mainly US) companies opposing binding or direct action towards the reduction of GHGs.

In response to the IPCC’s First Assessment Report, governments created an International Negotiating Committee (INC) with the mandate to negotiate an international framework for climate change governance (Andresen / Agrawala 2002: 45). During the negotiation stage of the UN’s legal regime on climate change leading up to the 1992 United Nations Conference on Environment and Development (UNCED) the USA, Japan and Russia proved to be the biggest laggards, aiming for non-binding reduction targets and taking a much more proactive stance than during the negotiations of the ozone regime³⁰ (Bodansky 2011a: 6; Andresen / Agrawala 2002). In the USA this was exacerbated by fears from US corporations

27 So far reports have been published in 1990, 1995, 2001 and 2007. The Fifth Assessment Report is expected to be published in 2013 or 2014. The Reports can be accessed on the IPCC’s website alongside a number of specialized reports dealing with topics like aviation or Land-use, Land-use change and Forestry (LULUCF): http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#.T66UQcUnaSp (last accessed: 12.5.2012)

28 “[T]he official interaction between scientists and policy makers is restricted to well-defined stages of the assessment. Scientists of the IPCC bureau first develop an outline of an IPCC report and identify topics of the working groups and the division of labor. They suggest this to national governments and select the authors and reviewers based on their scientific expertise and issues of geographical representation. The subsequent redrafting of chapters and the first round of peer reviews is undertaken by scientists. Governments enter the process once again in the second round of the review process, when their comments on revised assessment drafts are solicited. Finally, they have a crucial role in the approval of the summary for policy makers and the synthesis report” (Gupta et al. 2012: 74).

29 There are some notable exceptions, one of them being the Danish writer and academic Björn Lomborg (see Lomborg 2001) who has been a strong opponent of the Kyoto Protocol. He argues from an utilitarian and anthropocentric perspective, claiming that mitigation of climate change is rather cost-ineffective compared with other adaptation measures. He also argues that there are other problems like HIV, poverty and democratization which he deems more urgent and consequently argues that humanity should invest in mitigating these rather than mitigating climate change. It should be noted though that Lomborg unlike the above mentioned climate sceptics does not challenge the existence of global warming or the anthropogenic dimension of it.

30 It has been argued that the proactive role of the USA during the negotiations was due to an “ozone recoil” (Andresen / Agrawala 2002: 43) as the USA were behaving rather reactively during the Montreal Protocol’s negotiating stage and thus had missed the chance to prevent any binding commitments by the member states.

that an ambitious climate agreement would have them lose market shares to the newly consolidated EU and to Asia (Kimble 2011: 20). On the other hand the EU and some of its member states took a self-proclaimed leadership role and aimed for binding reduction commitments (Andresen / Agrawala 2002: 45 and more general Schreurs / Tiberghien 2010).

Even though states were the main actors during this negotiation phase, non-state actors still asserted influence on states through lobbying. Especially business associations like the European Round-Table of Industrialists, UNICE and the Global Climate Coalition used their well-established ties to the political system in order to influence the regime formation towards their advantage (Levy / Newell 2000). Weaker actors in terms of resources like environmental NGOs were less important during this phase. Nevertheless, non-business-NGOs were able to exert some influence on the evolution of the climate regime as well, for example by mobilizing the insurance sector to speak out in favor of action towards climate change and thus fracturing the economic actors (Levy / Newell 2002: 96).

The USA's efforts were eventually successful and the final treaty, the United Nations Framework Convention on Climate Change (UNFCCC)³¹, which was negotiated in New York in 1992 and signed at UNCED did not contain any binding reduction targets. Unlike the Kyoto Protocol a few years later, it was signed and ratified by the USA.

International treaties can be analyzed according to the freedom that they give the individual states in their action. There are two ideal types to be differentiated: top-down approaches³² defining certain policies, goals and measures that states have to implement, and bottom-up approaches³³ that contain less specific commitments and goals and thus give the states more freedom in choosing the concrete measures and policies they will pursue (Bodansky 2011a: 4).

A notable influence on the UNFCCC had been the – due to it being perceived as one of the most successful treaties in international environmental policy making (Tienhaara et al. 2012: 50) – Montreal Protocol³⁴ with its top-down approach (Bodansky 2011a: 5). Due to the strong opposition from the above mentioned countries, the battle between proponents of bottom-up versus top-down approaches continued until shortly before UNCED. Eventually, a compromise was found essentially containing both approaches (Ibid.: 5):

Article 4.1. of the UNFCCC contains a bottom-up approach. It calls on the convention's member states to develop national and/or regional programs in order to mitigate their emissions of those GHGs that are not covered by the Montreal Protocol and in order to adapt to climate change. It also calls for further efforts to coordinate actions and cooperate towards these goals and also calls for regular reporting on the progress to the Conference of the Parties (COP) of the UNFCCC. It is also worth mentioning, that non-governmental organizations are mentioned as partners for states where feasible, a fact that is noteworthy, as this was a novelty in international politics first introduced at UNCED (Clemencon 2012: 6).

31 Available online at: <http://unfccc.int/resource/docs/convkp/conveng.pdf> (last accessed: 12.5.2012)

32 The *Convention on International Trade in Endangered Species* (CITES) is an example of a top-down approach as it defines species that are in need of protection as well as how they are supposed to be protected (by permitting exports and imports of these species). (Bodansky 2011a: 4).

33 The *Convention on Wetlands of International Importance, especially as Waterfowl Habitats* (RAMSAR convention) is an example for a bottom-up approach that encourages countries to protect wetlands. Still there are no clear specifications on how this protection is to be achieved and member states are relatively free to decide which measures best suit their respective cases. Another example is the G-20's initiative to reduce fossil fuel subsidies that was started in 2009, and has since then developed into a bottom-up-approach which will be nationally led rather than being based on collectively agreed targets with specific timetables (Runnals 2011: 8).

34 The Montreal Protocol on Substances that deplete the Ozone Layer (a protocol to the Vienna Convention for the Protection of the Ozone Layer) established fixed timetables for the phasing-out of Chloroflourocarbons (CFCs) and Hydrochloroflourocarbons (HCFCs), substances that are primarily responsible for the depletion of the ozone layer. The protocol's legal text is available online: http://ozone.unep.org/Publications/MP_Handbook/Section_1.1_The_Montreal_Protocol/ (last accessed: 13.5.2012)

Article 4.2. on the other hand contains a top-down approach. It formulates the “aim”³⁵ for those countries listed in Annex I of the UNFCCC (developed and transition countries of the former soviet block) to reduce their emissions to the levels of 1990. Furthermore, Article 4.2(f) also contains the two main approaches that are applied towards tackling climate change on the international level: mitigation and adaptation³⁶.

The differentiation between developed and transitioning countries on the one hand and developing countries on the other hand has remained at the core of international climate governance and can easily be identified as the central “barrier for an effective climate policy” (Streck 2012: 53). “[T]he prevalent neglect of global justice issues” (Davy / Pellissery 2011: 106) is tied to this problem as a “policy, even if environmentally effective and economically efficient, must fail as long as too many stakeholders perceive this policy as fundamentally unjust” (Ibid: 106-107). The UNFCCC has also been criticized for further complicating negotiations as many climate-related discussions would not necessarily require the participation of all signatory parties (Michonski / Levi 2010: 1).

The debate about top-down versus bottom-up approaches has since the beginning been at the core of the development of the climate regime (Ibid.: 6) and can still be observed today in the process leading to a post-Kyoto agreement. The debate centers around the argument that the lack of an international coordinator and the relatively young age of most international environmental institutions should be translated into “learning by doing” rather than focusing on coordination (Andresen 2002: 23).

Nevertheless, the UNFCCC established a “basic system of governance” (Bodansky 2011b: 2) for the issue-area of climate change. The main actors in the UNFCCC are its member states. The convention’s secretariat has since the beginning been limited to providing knowledge and technical support as well as exercising bureaucratic authority, rather than being able to provide any factual leadership during the negotiations (Bauer et. al 2009: 176-180). The UNFCCC’s governance system basically consists of three pillars: “the formulation of ambitions and goals, definition of frameworks that account for greenhouse gas emissions and reductions, and the organization of international transfer of finance supporting developing countries in their mitigation and adaptation efforts” (Streck 2012: 53). In its preamble the UNFCCC also refers to the principle of Common But Differentiated Responsibility. This is one of the core normatives³⁷ of international sustainable development governance set forth in the Rio-Declaration³⁸ (more specifically principle 7) presented after UNCED (Bernstein / Brunnée 2011: 7). It is central for the evolution of the international climate regime and global environmental governance in general, as developing countries often refer to it when rejecting binding commitments for themselves.

After the creation of UNFCCC there was now a need to specify the commitments of Article 4.2. (the first pillar) into quantitative emission limitation and reduction objectives (QUELROs) in order to establish concrete goals, measure progress and achieve accountability. Ultimately, this was what the Kyoto Protocol³⁹ would specify.

35 It has been highlighted, that the term “aim” is weaker than the term “goal” and it has also been stressed that the use of this terminology can be seen as an attempt to weaken the UNFCCC (Bodansky / Diringer 2011: 8).

36 Thom Brooks has published an interesting paper (2012) concerning these approaches: he argues that neither of the two approaches is satisfactory in itself as both of them offer end-state-solutions that might not be able to take into account all future events completely. Even though he dismisses both strategies as unsatisfactory he does not end up with cynicism but instead sees an unspecified change of humanity as the solution.

37 The other normatives are: state sovereignty over natural resources and the responsibility of states to make sure that activities within their jurisdiction do not cause damage to the environment in other states (Rio Principle 2), the Precautionary Principle (Rio principle 15), the Polluter Pays Principle (Rio Principle 16), and the right of individuals to have access to information regarding environmental affairs, participation and justice (Rio Principle 10) (Bernstein / Brunnée 2011: 7).

38 The legal text of the Rio Declaration can be found here: <http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163> (last accessed 13.5.2012)

39 The Kyoto Protocol’s legal text is available online: <http://unfccc.int/resource/docs/convkp/kpeng.pdf> (last accessed: 13.5.2012)

3.1.2. The Kyoto Protocol

The negotiating process for the Kyoto Protocol was initiated at the UNFCCC COP-1 in Berlin in 1995. Negotiators had come to Berlin in order to negotiate QUELROs for the Annex I countries of the UNFCCC (Bodansky 2011a: 7). As these would only be relevant to the developed and transitioning countries, the main lines of conflict were between the European Community on the one side and the USA with support from Japan, Canada, Australia and New Zealand, the so-called JUSCANZ40 or ‘umbrella’41 group (Bodansky 2011b: 3), on the other side. Conflict arose regarding the type of approach to be applied and the mechanisms to be included. Negotiations continued at COP-2 in Geneva in 1996 and up until COP-3 in Kyoto when a final compromise was achieved that reflected all parties’ interests42:

“The EU got their numbers, the US got their institutions, Japan got prestige as a host, the JUSCANZ countries got their differentiation and the developing countries avoided commitments” (Andresen 1998: 28)

The Kyoto Protocol specified two issues: first, the types of GHGs43 and the sectors and sources44 that would account for reductions (Annex A), and second, the percentage by which the developing and transitioning countries had to reduce their output of these gases during the Kyoto Protocol’s first commitment period (2008-2012) compared to the base year of 1990 (Annex B). As said before, there were no reduction commitments for developing countries.

Australia, Iceland and Norway were the only countries allowed to slightly increase their emissions whereas Russia, New Zealand and the Ukraine committed themselves to stabilizing emissions on their 1990 levels. The major emitters committed themselves to reductions of -7% (USA) and -6% (Japan, Canada45), while the European Union redistributed its collective reduction goal of -8% among its members, an approach that is called burden sharing. According to article 3.2 as of 2005, each Annex I country has to “have made demonstrable progress in achieving its commitments”. In retrospective those countries with very ambitious reduction commitments and those with not very ambitious commitments did not achieve their goals (Jänicke 2011:142-143). Germany and Great-Britain were most successful in meeting their commitments, even though both were aided by changes in the structure of the energy sector (the breakdown of the soviet-style economy in the case of the German

40 Sometimes also called JUSSCANNZ to include Norway and Switzerland.

41 The ‘umbrella’ group also contains Russia and the Ukraine.

42 For a detailed account of the negotiation process see Andresen 1998 and Andresen / Agrawala 2002.

43 These are Carbon Dioxide (which in the form of CO²-Equivalents also serves as the reference base for the other gases), Methane, Nitrous Oxide and Sulfurhexafluoride as well as the groups of Hydrofluorocarbons (HFCs) and Perfluorocarbons (PFCs). At the 17th Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) in Durban in December 2011 a proposal by the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWP-KP) was decided on that also adds Nitrogen Trifluoride to the list of greenhouse gases covered by the Kyoto Protocol: http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/awgkp_outcome.pdf (last accessed April 25th 2012)

44 These are the Energy Sector (Fuel combustion and fugitive emissions from fuels), industrial processes (mineral products, chemical industry, metal production, other production, production of halocarbons and sulphur hexafluoride, consumption of halocarbons and sulphur hexafluoride, and other sources), solvent and other product use, agriculture (enteric fermentation, manure management, rice cultivation, agricultural soils, prescribed burning of savannas, field burning of agricultural residues, and other sources), and waste (solid waste disposal on land, wastewater handling, waste incineration and other sources).

45 It has been argued that Canada has likely accepted the most ambitious reduction targets. Although not formally the most ambitious, the structure of the Canadian economy meant that “in order to comply [Canadian Policymakers] knew they would need to deliver a 30 percent reduction below projected emissions by 2010” (Harrison 2010b: 169). A serious problem preventing ambitious action in this field have been the strong ties between the USA’s and Canada’s economies together with the USA’s reluctance to ratify which was seen in Canada as creating economic disadvantages (Ibid: 194). Canada has ever since the Kyoto Protocol’s entry into force failed to fulfill its Kyoto commitments and eventually retreated from the Kyoto Protocol in December 2012 right after the UNFCCC’s COP-17 in Durban and the decision taken there, to create a second commitment period under the Kyoto Protocol.

unification and a shift from heavy reliance on coal towards gas in the British example) (Schreurs / Tiberghien 2010: 47-52; see also Jänicke 2011: 144).

The specific rules for implementation of the Kyoto Protocol though were only set out in the Marrakesh Accords⁴⁶ agreed upon at the UNFCCC's COP-7 in Marrakesh, Morocco, in 2001 (Osterheld 2010: 28).

The assignment of fixed reduction targets is nothing marginal: it has strong influence on the global political economy as it creates rights of ownership and use of the atmosphere, preventing it from being used as a free dumping ground for GHGs (Edenhofer 2011: 204-205). It can be seen as an attempt to solve the tragedy of the commons and regulate the use of the global commons 'atmosphere'.

The Kyoto Protocol furthermore sets out the rules and obligations for establishing reporting and registration structures at the national and international level, as well as the establishment of compliance structures at the international level (most notably the Compliance Committee) (see Osterheld 2010 for a detailed analysis of these structures).

The Kyoto Protocol was open for signature as of March 16th, 1998 for the time of one year (Article 24). The Kyoto Protocol's Article 25 specified that it would enter into force a) once 55 member countries of the UNFCCC had ratified it and b) these 55 countries included Annex I-countries that collectively accounted for at least 55% of global Annex I-country GHG emissions. The first goal was achieved in May 2002 with the ratification of Iceland (Osterheld 2010: 28). The second condition proved to be harder to fulfill, as the US Senate had passed the Byrd-Hagel-Resolution⁴⁷ in 1997 – prior to the negotiations of the Kyoto Protocol – which effectively prevented the USA (which accounted for 36,1% of global emissions in 1990) from ratifying the Kyoto Protocol. It was thus Russia's (accounting for about 18% of the 1990 emissions; *ibid.*) ratification that was needed for the Kyoto Protocol to become effective. Russia had strategically waited with its ratification in order to gain as much side-payments as possible and it was the EU's support for Russia's accession to the WTO that finally tipped the scales (Henry / McIntosh Sundstrom 2010: 116)⁴⁸.

An important aspect of the Kyoto Protocol are the so called Flexible Mechanisms (sometimes also called Kyoto Mechanisms). These are mechanisms that were implemented in order to support the states in Annex B in their efforts towards the reduction of GHGs. They are market-based mechanisms that can be interpreted as historical symptoms of the unreflected faith in the power of free markets and capitalism more generally that prevailed after the fall of the iron curtain. On the other hand, the argument has been brought forward by Peter Newell and Matthew Paterson (2010: 7) – certainly not famous for being advocates of unregulated capitalism – that market-based approaches might be the only feasible way for societies to collectively combat anthropogenic climate change. The USA were the main proponent of the

46 The "Marrakesh Accords & the Marrakesh Declaration" can be accessed online: http://unfccc.int/cop7/documents/accords_draft.pdf (last accessed 17.5.2012)

47 Named after its initiators, senators Robert Byrd (Democrat) and Chuck Hagel (Republican) and supported by the Global Climate Coalition (Paterson 2009 and Harrison 2010a), the resolution gave the justification of the ecological unilateralism the USA would pursue ever after and especially during the two presidential terms of George W. Bush. Together with China's reluctance to agree to any commitments for developing countries under a post-Kyoto agreement (Heggelund et al. 2010) it has also for years effectively blocked progress in the negotiations for a global climate agreement following the Kyoto Protocol. It states that "...the United States should not be a signatory to any protocol to, or other agreement regarding, the United Nations Framework Convention on Climate Change of 1992, at negotiations in Kyoto in December 1997, or thereafter, which would--

(A) mandate new commitments to limit or reduce greenhouse gas emissions for the Annex I Parties, unless the protocol or other agreement also mandates new specific scheduled commitments to limit or reduce greenhouse gas emissions for Developing Country Parties within the same compliance period, or

(B) would result in serious harm to the economy of the United States..." (US Senat 1997)

48 Russia eventually completed its accession process to WTO in November 2011. Interestingly this was a few weeks before the UNFCCC's COP-17 in Durban. As this was one of the last chances to set the stage for a post-Kyoto agreement, it seems possible that diplomatic pressure to finish the process was induced upon the WTO's Working Party on the Accession of the Russian Federation to the WTO in order to get Russia's support during the negotiations.

inclusion of the flexible mechanisms in the Kyoto Protocol and these were partly based on the USA's experiences with implementing the Clean Air Act of 1990 which required a reduction of the sulfur dioxide emissions from coal-fired electric power plants of about 50% (Dernbach / Kakade 2008: 10-11).

The Flexible Mechanisms were designed to allow the Annex B countries to trade in emission allowances (emissions trading - Article 17) (see Lohmann 2006 for a critical account), collectively implement projects to reduce GHG emissions (joint implementation – Article 6) and to get credit for reductions achieved in developing countries where it might be cheaper to achieve reductions than in developed countries (clean development mechanism – Article 12) (Paterson 2009: 143). The implementation of emissions trading had been a necessary condition for the USA to agree to the Kyoto Protocol, so the EU – even though they opposed the concept – eventually gave in, in order to reach any agreement at all (Santarius / Braun 2008: 24). Still the EU managed to implement in Article 17 the notion that these measures are only supposed to be supplemental to domestic efforts, but they failed to include a further definition of supplementality (Sterk / Arens 2008: 42). The intention behind this was to prevent states from not actively reducing and instead only buying emissions allowances from other countries.

The Kyoto Protocol and its Flexible Mechanisms have also been criticized though. An important point of criticism is the focus on the output-dimension of the 'brown economy' whereas the input-dimension is still dominated by nation states and transnational corporations (Brunnengräber 2011: 34). There is also no further specification of the role that forests could play even though they could create important contributions as carbon sinks (Simonis 2007). Other points of criticism have been the insecurities in determining actual reductions, the substitution of emissions reductions with other GHGs not covered by the Kyoto Protocol, insufficient accountability and difficulties in determining the additionality and sustainability of CDM and JI projects (Brunnengräber 2011: 33).

Perhaps the most important critique has been that the market mechanisms do not – contrary to the claims of their proponents – reduce transaction costs and regulatory burdens, but rather create large bureaucracies which are often overburdened with the governance of these complex issues (Newell 2012: 41-42):

“For the governance of market mechanisms to be effective and legitimate, attention needs to be paid to aspects of “good” governance: transparency of flows; measures for identifying and dealing with evidence of collusion and corruption between a limited range of actors with the necessary expertise and skills; and adequate systems of participation, representation, and accountability, especially to actors invoked as the beneficiaries of projects and partnerships” (Ibid.: 42; brackets in original).

Before we continue with the analysis of the evolution of the international climate regime, it makes sense to have a more in depth look at the three flexible mechanisms as their understanding is not a sufficient, but still a necessary condition for the understanding of the functioning of the climate change regime complex.

3.1.2.1. Emissions Trading

If we study different systems of emissions trading schemes (ETS) it is important to pay attention to one crucial question: who is actually trading? The ETS of the Kyoto Protocol for example is an interstate system that has states as the trading partners whereas the European

Union Emissions Trading System (EU-ETS) is designed to be a transnational market for companies to trade emissions allowances. In this sense there is not one but multiple ETS that exist on different levels (Santarius / Braun 2008: 22).

The basic idea is always the same though: a certain level (cap) of allowed emissions for a specified time is fixed for each trading partner and is then quantified in the form of so called Assigned Amount Units (AAUs) that can be traded. This system is often referred to as cap-and-trade. Usually, the amount of AAUs is reduced during each assignment period in order to create incentives for continuing reduction and innovation (Schüle 2008). A second goal is to allocate efforts to reduce emissions to those place where it is cheapest and most effective, building on the – not unquestioned (see Cassidy 2010) - premise that markets are the most efficient way to allocate resources (Edenhofer et al. 2011). As a side-effect, emissions trading can support the transition of a country's energy sector towards renewable energies even though this process depends on a certain price level to create the necessary incentives (Fischedick 2008).

In the case of the inter-state ETS the states have to implement their specific reductions and have to develop mechanisms for the allocation and subsequent trading of emissions allowances at the national level, i.e. they have to create the same mechanisms existing on the international level on a national scale, only this time for companies⁴⁹. Supervised by the UNFCCC secretariat, states can distribute AAUs to companies emitting GHGs allowing them to emit a certain amount. This raises the costs of production for the company and thus creates incentives to reduce their emissions, e.g. by installing filters or innovating production techniques.

Apart from AAUs the emissions trading scheme set put in the Kyoto Protocol also allows for the trading of other types of certificates, namely Certified Emissions Reductions (CERs) from the Clean Development Mechanism, Emission Reduction Units (ERUs) from Joint Implementation projects (see chapter 3.1.2.2 for a more thorough description), and Removal Units (RMUs) that have been derived from the mechanism of Land use, Land-use Change and Forestry (LULUCF)⁵⁰ (Osterheld 2010: 36).

Ironically even though the EU initially opposed the inclusion of emissions trading into the Kyoto Protocol's Flexible Mechanisms, at the point of writing this paper the only binding and sanctionable ETS is the EU-ETS. Its legal base is in the directive 2003/87/EC (EC 2003). It is a sectoral steering instrument covering installations emitting GHGs in certain sectors (energy, metal processing, iron processing, cement production, pulp and paper production) (Schüle 2008). As of January 2012 the aviation sector is covered as well (EC 2008a). Even though the directive explicitly refers to all the GHGs covered in Annex I of the Kyoto Protocol, it still only covers carbon dioxide, nitrous oxide and PFCs at the current stage. A further extension to other sectors and GHGs is planned for the EU-ETS's third trading period starting in 2013 (EC 2010).

The 2003 directive basically presents the legal frame for the national systems being developed by the member states. With the help of National Allocation Plans (NAPs) being developed at EU-Level, the individual states' reduction commitments can be broken down for several sectors in a first step and then for individual installations in a second step (Schüle 2008: 11).

49 There have also been proposals to introduce personal trading schemes that would incorporate individuals in a similar system (see for example Hillmann / Fawcett 2007 or Barrett 1995).

50 Article 3.3 of the Kyoto Protocol states that the uptake of carbon from the atmosphere as well as the decreases or increases of emissions through certain activities (namely afforestation, reforestation and deforestation) are to be taken into account when determining the UNFCCC Annex I-countries' GHG balance. Article 3.4. of the Kyoto Protocol also allows for the inclusion of other activities like forest management, cropland management, grazing land management and revegetation to be included in a country's balance.

So far, the EU-ETS has seen two trading periods (2005-2007 and 2008-2012), the first of which was seen as a test phase. During this phase all the emissions allowances – the so called European Union Allowances (EUAs), the EU's Version of AAUs – were given away for free⁵¹ based on the principle of grandfathering that is the accounting of the installations historical emissions plus the consideration of the countries reduction commitments. "The price of carbon allowances is determined by the market price settled daily by participants in a financial market specifically for carbon emission allowances" (Knight 2010: 2). These markets are, among others, located in London, Leipzig, Oslo and Paris, although the professional expertise in these fields is situated in New York and London which "reflects the way in which the carbon market has emerged in complementarity with conventional capital markets" (Ibid: 3). This development can also be seen in the creation of financial market products specifically designed in reaction to the emergence of ETS: carbon (investment) funds, voluntary emissions compensation schemes, project financing and special insurances have developed alongside financial and administrative services often fulfilled by third actors (Busch et al. 2008: 158-161).

If we look at the trading volume, the European Climate Exchange (ECX) in London has clearly become a focal point for carbon trading "with existing financial institutions opening trading desks specifically to profit from emerging and existing carbon markets" (Bumpus / Livermann 2008: 143).

One problem with the principle of grandfathering had been an over-allocation of allowances in Germany and other countries due to incorporation of sectors that were not supposed to be covered by the EU-ETS, and which led to a massive decline in prices for EUAs by the spring of 2007, plummeting down to 20 to 30 Eurocent per ton of carbon dioxide (Schüle 2008: 14). A second reason for this decline is certainly the fact that allowances from the first phase were not allowed to be carried over to the second phase.

After these experiences, the European Commission acted much more proactively upon the crafting of the NAPs for the second allocation period in order to reach stronger reductions and also by changing the allocation mode for some states: in Germany, for example, grandfathering was replaced by a benchmarking system that does not orient itself on the past emission but rather towards the current level of technology (Ibid.). The revision of the EU directive on emissions trading (EC 2008a) stated that starting with the third allocation period (starting 2013) at least half of the emissions allowances shall be auctioned. The revision was not only the result of a changed position within the European Commission, but can also be attributed to changed position within the individual member states as well as growing support from environmental NGOs and industry associations (Skjærseth / Wettestad 2010: 119). It has also been interpreted as an attempt to influence the gridlocked international climate negotiations (Ibid.).

However, the future of the type of mandatory emissions trading as practiced by the EU-ETS will depend on the future of the UNFCCC and the Kyoto Protocol. I will later argue that in Durban at the UNFCCC's COP-17 the international community agreed to a slight change in scope for the international climate regime: away from the Kyoto Protocol's top-down approach towards a bottom-up approach as of 2020. As emissions trading only makes sense in the presence of fixed reductions commitments, it remains to be seen whether there is a future for emissions trading in the current form. Another option would be to trade emissions

51 Technically, there was the opportunity to auction 5% of the allowances, but that was in reality not used by the major economies.

based on non-binding commitments at the regional level (e.g. the EU), the national level⁵² or the sub-state level⁵³.

Furthermore, the introduction of an international ETS will also depend on whether and how the developing countries will be incorporated in a future agreement. As this remains unclear at the moment, it seems unsure whether the EU's proposal at the Copenhagen-COP to establish an OECD-wide ETS based on the EU ETS (Skjærseth / Wettestad 2010: 118) has a future. Also, the question remains, whether it will be possible to link all the different ETS that exist and are evolving in the long run into a single comprehensive system. Schüle et al. (2008) have developed an analytical framework to answer this question and have concluded that this seems rather unlikely, as there are crucial differences that prevent a linkage of these systems into a single comprehensive mechanism. Eric Knight (2010) has also highlighted the importance of economic geography and factors like market structures (e.g. in the energy sector) or the importance of time (investment security) for the future development of emissions trading.

3.1.2.2. Joint Implementation and CDM

Joint Implementation (JI) and Clean Development Mechanism (CDM) are the two project-based mechanisms of the Kyoto Protocol (Sterk / Arens 2008: 38). The basic idea is to have project developers in developing countries to create and implement projects that reduce emissions in other Annex B countries (JI) or in developing countries (CDM) who would otherwise not be obliged to reduce just by themselves. The reduced emissions will then be credited to the implementing companies who can use them in their national ETS, either to cover their own reduction requirements or to sell them on the market. In the case of JI-projects this will be done as ERUs and in the case of CDM-projects as CERs.

The implementation of these projects is quite similar in both cases: according to a so-called baseline-scenario (which is basically 'business as usual'), the project developers develop a project that mitigates the emission of GHGs or takes carbon from the atmosphere and stores it (so called carbon sinks), e.g. in the form of afforestation projects. The respective national authorities that have been created for this purpose⁵⁴ evaluate the project and then accredit the respective certificates (see Sterk / Arens 2008 for a more detailed description). An important factor to be considered and to be proven by the project designers is the additionality of the project: they have to prove that the reductions would not happen without the investment in the project because otherwise the projects would lead to an increase of the available amount of certificates in the industrialized countries (Brunnengräber 2011: 32). Apart from the very similar mechanisms, there is one important difference: whereas JI's purpose is to support Annex B-countries in fulfilling their commitments, the CDM also has the additional purpose⁵⁵ of supporting developing countries' efforts towards sustainable development (Piepenbrink 2011: 23; for sustainable development see chapter 4.1.3).

Up to now, the CDM-projects by far outweigh the JI-projects in numbers: at the time of writing this paper (May 2012), there are 4099 registered CDM-projects compared to 343 JI-

⁵² Examples are the already existing voluntary *Chicago Climate Exchange (CCX)* or the still to be implemented *Clean Energy Bill of 2011* that proposed an emissions trading scheme for all of Australia.

⁵³ A notable example is the mandatory emissions trading scheme that has been introduced in the Japanese prefecture of Tokio in 2011. In the USA California introduced a cap-and-trade system and several north-eastern states joined in the *Regional Greenhouse Gas Initiative (RGGI)* (see Paterson 2009: 144).

⁵⁴ In the case of the CDM, these are called Designated National Authorities (DNAs) and in the case of JI they are called Accredited Independent Entities (AIEs). For an overview of the processes for accepting projects see Osterheld 2011: 31-35.

⁵⁵ Noted in Article 12 of the Kyoto Protocol.

projects⁵⁶. If one compares the quantified reductions achieved by CDM and JI, there is still an overbalance of the CDM which created 1.094 Mio CERs between 2008 and 2012, whereas JI created 737 Mio. ERUs during the same time (Fenhenn 2012). Of the latter only 0,6% were produced outside of Eastern Europe and three quarters of the ERUs came from Russia and the Ukraine (Ibid.). During the negotiations of the Kyoto Protocol, the latter two had been strong proponents of the 1990 base year for GHG reductions, as the fall of the iron curtain and the subsequent collapse of the economies in the former soviet countries had made them likely beneficiaries of JI (Henry / McIntosh Sundstrom 2010: 108).

The regional distribution of the projects has been a point of criticism as well, as three quarters of all CDM-projects are located in China, India, Brazil and Mexico (Sterk / Arens 2008). This critique can be weakened to some extent, if one considers that Africa's share of the global CO²-emissions was only 3,3% in 2004 (Kifle 2008:5) and that especially those large emerging nations have a high potential for cutting emissions in the case of envisaged investments. Additionally, the market orientation of the CDM causes funding often to be directed to countries with higher processing capacities (usually those with more experience in implementing these projects) and better accessible markets (e.g. China) (Newell et al. 2009: 12-13).

The lack of focus on the sustainable development goal of the CDM has also been criticized (Piepenbrink 2011: 25). There is so far no comprehensive assessment of the long term sustainable development effects of CDM-projects, but studies analyzing project documents concluded that about half the projects lack any reference to sustainability at all (Ibid.). Furthermore, a lack of stakeholder participation often leads to negative outcomes in the social dimension (Ibid.: 26).

Another point of criticism directed towards the CDM is more severe: about two thirds of CERs are produced by projects designed to reduce the emissions of HFCs, methane and nitrous oxide. Initially this seems plausible, as the effect these gases have on the climate is much stronger than that of carbon dioxide (methane is a 21x and HFCs are on average even 11.700x times stronger GHGs than carbon dioxide) (Sterk / Arens 2008: 39). The problem though is that these gases are often the byproducts of other production processes and can relatively easily be separated and burned. This leads to about a third of CDM-projects in China, India and Brazil being so-called end-of-pipe-projects that separate these gases and then burn them (Brunnengräber 2011: 32). This can be done quite cheaply (in the case of HFC-23 about 0,50 \$ per ton of CO²-equivalents), but does not really contribute to a sustainable development in the sense of reducing poverty or providing basic services to the population (Sterk / Arens 2008: 40). A possible solution would be the creation of mechanisms that systematically secure the sustainability of these projects and secure the creation of co-benefits (Arens et al. 2007; Newell et al. 2009; Newell 2012 and Piepenbrink 2011: 27).

The Kyoto Protocol and its flexible mechanisms were an important step in global climate governance and the development of the regime complex of climate change. Nevertheless it had its flaws and criticism has been uttered since the beginning. Two important points of criticism are worth mentioning: first, the Kyoto Protocol is not comprehensive enough to ensure an effective protection of the global climate system. Those states that are willing to implement reduction commitments only account for 25% of global emissions (Bodansky 2011a: 8). As I have already mentioned, there are no reduction commitments for developing countries and thus there are no incentives for them to reduce emissions (besides attracting foreign direct investments via the CDM). During the negotiations of the Kyoto Protocol it might have been necessary to exclude these countries in order to achieve any consensus at

⁵⁶ For recent numbers, see the CDM statistical database at <http://cdm.unfccc.int/Statistics/index.html> and the JI statistical database at http://ji.unfccc.int/JI_Projects/ProjectInfo.html (both last accessed: 14.5.2012).

all, but by now this decision proves to be one of the core weaknesses of global efforts to tackle climate change. Emerging countries like China⁵⁷, India, Indonesia, South Africa or Brazil have tremendously increased their emissions but seem unwilling to reduce, usually arguing with their status as developing countries as well as the industrialized countries' historic responsibility for climate change⁵⁸.

Second, the Kyoto Protocol is limited due to its commitment period ending in 2012 (Bodansky 2011a: 9). No regulations for the time after have been agreed upon by the international community and this has created a lot of uncertainty and certainly prevented individual states and economic actors from pursuing ambitious mitigation policies (this can be seen as an example of free-riding). The expiration of the Kyoto Protocol also creates repercussions on other regimes: it has been argued that since the Kyoto Protocol covers HFCs which are on the other hand promoted by the Montreal Protocol as substitutes for Chlorofluorocarbons and Hydrochlorofluorocarbons, there is a need to change the Montreal Protocol in order to avoid perverse incentives increasing the amount of GHGs (Velders et al. 2012). The first steps towards addressing these problems were taken at UNFCCC COP-13 in Bali in 2007.

3.1.3. The Post-Kyoto Process

In Bali, the UNFCCC's signatory parties agreed to the Bali Action Plan⁵⁹ that launched a parallel negotiation track under the UNFCCC in order to deal with a post-Kyoto agreement. A new subsidiary body was established, the Ad Hoc Working Group on Long-Term Cooperative Action under the Convention (AWC-LCA). The AWC-LCA was working parallelly to the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) that was established two years earlier at COP-11 in Montreal. Whereas the AWC-KP's focus was on establishing perspectives on how to effectively extend the Kyoto Protocol and thus keep up the top-down-approach of the Kyoto Protocol, the AWC-LCA was officially open to any type of approach, but was effectively working on a bottom-up-approach. This was evident in the USA being a member of the AWC-LCA, but not of the AWC-KP (Bodansky 2010: 3). The results of these working groups were presented two years later at the infamous COP-15 in Copenhagen. All of the Kyoto Protocol's Annex B-countries (including the EU) were supporting the AWC-LCA, as they were not willing to accept another round of binding commitments without developing countries taking on any by themselves (Ibid.). Developing countries on the other hand were pushing for the AWC-KP receiving equal attention (Ibid.).

After two weeks of negotiations, a small group of heads of states (USA, China, Brazil, South Africa and India), representing a larger group of countries, negotiated what came to be known as the Copenhagen Accord⁶⁰. It can be seen as a political rather than a legal document (Bodansky 2010: 5), as it is very short and does not specify a lot. Its main elements are:

57 According to the United Nations Statistics Division, China passed the USA in 2005 in terms of total emissions: <http://mdgs.un.org/unsd/mdg/SeriesDetail.aspx?srid=749&crd=> (last accessed: 17.5.2012)

58 In the case of China, another argument often forwarded is that the increase in emissions also has to do with China's status as a major producer of manufactured goods for the industrialized countries (Heggelund et al. 2010: 233).

59 The legal document is available online: http://unfccc.int/files/meetings/cop_13/application/pdf/cop_bali_action.pdf (last accessed: 17.5.2012)

60 Formally it was *taken note of* by the Conference of the Parties as *FCCC/CP/2009/11/Add.1 – Decision.2/CP.15* It is available online: <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf#page=4> (last accessed: 17.5.2012)

The long-term goal of limiting the global average temperature increase to 2°C (Article 1).

The initiation of a process for recording emissions targets submitted by Annex I parties (Article 4) and mitigation actions submitted by non-Annex I parties (Article 5).

The establishment of a Green Climate Fund, equipped with 100 Billion Dollars annually by developing countries. The money shall be used to fund mitigation and adaptation in developing countries (Article 8).

The establishment of a Technology Mechanism to accelerate the development and transfer of technologies for mitigation and adaptation (Article 11).

The establishment of a mechanism to mobilize resources from developed countries in order to reduce emissions from deforestation and forest degradation (REDD+) (Article 6).

The agreement to support developing countries towards a low-emissions development path (Article 7).

The Copenhagen Accord has been characterized as a bottom-up approach: it does not specify any reduction commitments but rather calls on the individual states to “further strengthen” (Article 4) their commitments made under the Kyoto Protocol, i.e. to make specific national pledges (Bodansky 2011a: 14).

Especially civil-society organizations harshly criticized the Copenhagen Accord for not taking the necessary steps to prevent dangerous anthropogenic climate change (see for example Traufetter 2009 or BBC 2009). The advocates of a bottom-up-approach have argued though that even if it may not be the most suitable way to combat anthropogenic climate change, it might still reflect the reality of domestic policies (in terms of which climate change is seen in most countries) more accurately than imposed reduction targets which countries might not be able to agree upon (Bodansky 2011a: 16). On the other hand, it seems doubtful, whether national pledges will be very ambitious (Ibid.). At least it will require substantial leadership by single countries or groups of countries in order to rule out free-riding.

At COP-16 in Cancun in 2010 delegations reiterated their commitment to the Copenhagen Accord but failed to achieve any major progress. It was thus up to COP-17 in Durban in December 2011 to determine the future of the climate regime. The conference seemed like the last chance to negotiate a second commitment period for the Kyoto Protocol and thus maybe also to save the top-down-approach (Reimer 2011). It is noteworthy that even though the fixed reduction commitments of the Kyoto Protocol are terminated, the Protocol itself is not: this means that many of the articles and institutions (e.g. the flexible mechanisms) would remain intact (Bodansky 2011b:5-7). It seems unlikely though that they would be used in the absence of any fixed reduction targets, but they could nevertheless still be part of a future agreement.

With only 13% of the global emissions covered by the Kyoto Protocol (Gillies 2011), a second commitment period would still have been a mere political statement rather than an effective approach, but one that would have strengthened the top-down-approach that is still preferred by the EU (Bodansky 2011b: 5). The main laggards in Durban turned out to be the USA, China⁶¹, India and Canada, even though the emergence of climate change as a more prominent issue in the global public sphere reduced their scope of resistance (Brake 2011).

61 Heggelund and Bruzelius Backer (2007) have argued, that China might be aiming to establish itself at a leading position in international environmental politics. Looking back now, five years later, and taking into account the events at Durban 2011 and Rio+20, this prognosis seems a little misguided. At the

In the end, the final outcome contained both, proposals from the AWG-KP62 and the AWG-LCA63.

The main AWG-LCA proposals that were decided on are:

The negotiation of a new agreement⁶⁴ which is to be negotiated beginning at COP-18 in Qatar in 2012 (Article 1). In 2015 the new treaty is supposed to be signed, coming into force in 2020. It was left unclear whether the new agreement will eventually be connected with the Kyoto Protocol or replace it. The work shall be carried out by the Ad Hoc Working Group on the Durban Platform of Action (AWG-DPA)⁶⁵.

The inclusion of developing countries' efforts in a future agreement (Section B).

The inclusion of the aviation and transportation sectors in future considerations of emissions reductions (Article 78).

The decision to make the technology mechanism (now called Climate Technology Center and Network) operational by 2012 (Article 136).

The main AWG-KP proposals that were decided on are:

A second commitment period for the Kyoto Protocol starting in 2012 and ending in 2017 or 2020 (Article 1). The latter seems more likely, as the new agreement will be entering into force in 2020 the latest.

The inclusion of nitrogen trifluoride to the list of GHGs covered under the Kyoto Protocol (Annex 2).

Another important decision was the launch of the Green Climate Fund⁶⁶. It will be decided in 2012 where it will be situated, Germany (i.e. Bonn) being one of the applicants for the location of the fund (Bundesregierung 2011).

Three points about the results of COP-17 seem noteworthy: first, progress towards a new international regulatory framework has been made with a compromise between the temporal extension of top-down-approach of the Kyoto Protocol and the bottom-up-approach being at the core of the post-Kyoto agreement. Also, the inclusion of all countries in the future agreement can be counted as a success. Finding no agreement at all in Durban would have rid the international climate politics of their credibility and legitimacy.

Second, the establishment of the Green Climate Fund is an important step. The fund will probably not receive entirely "new multilateral funding" as demanded in the Cancun-Agreements⁶⁷ (Article 100 of FCCC/CP/2010/7/Add.1), but its establishment is important as it is likely to have an impact on the flows of official development assistance (ODA). Even though developed countries are far from achieving their, now 35 years old, commitment of increasing

domestic level, environmental issues might be gaining importance (ibid: 415), but at the global level China does not seem to give much priority to environmental issues yet.

62 Decision FCCC/KP/CMP/2011/10/Add.1 is available online: <http://unfccc.int/resource/docs/2011/cmp7/eng/10a01.pdf> (last accessed 18.5.2012)

63 Decision FCCC/AWG/LCA/2011/L.4 is available online: <http://unfccc.int/resource/docs/2011/awglca14/eng/l04.pdf> (last accessed: 18.5.2012)

64 It was left open whether this will be in the form of a protocol, legal instrument or an agreement with legal force (the first being the strongest, the last being the weakest instrument).

65 Decision available online: http://unfccc.int/files/meetings/durban_nov_2011/decisions/application/pdf/cop17_durbanplatform.pdf (last accessed: 18.5.2012)

66 Decision FCCC/CP/2011/9/Add.1 is available online: <http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf> (last accessed: 18.5.2012)

67 The Cancun Agreements where a set of decisions made at COP-16 in 2010 that were the results of the work of the AWG_LCA, AWG-KP and also considered further measures concerning LULUCF. The decisions can be accessed online: <http://unfccc.int/documentation/decisions/items/3597.php?such=j&volltext=%22cancun%20agreements%22#beg> (last accessed: 18.5.2012)

their ODA to 0,7% of their GDP, it seems unlikely in the current economic situation that the fund will receive additional money. It seems more likely that there will be a redistribution of ODA in order to fill the Green Climate Fund, thus leading to a structural change in the distribution mechanisms of ODA. This is an important step, as the amount of money given out to climate related projects by other donor organizations like the Global Environment Facility (about 250 Million Dollars per year) (Michonski / Levi 2010: 6) or the World Bank (about 3,7 Billion Dollars in 2008) (Ibid.: 17) is by far not close to this amount. Much will also depend on the allocation mechanisms and the types of projects the fund will give money to. As private economic actors will likely have to play an important role in the decarbonization of the economy, it has been proposed that the fund's money might at least in part be used to lower the risks of major projects in order to make them attractive for private investors (Runnalls 2011: 7).

Third, the inclusion of the aviation and transportation sectors in future considerations of emissions is an important step towards changing unsustainable patterns of consumption and production. It opens up possibilities and – more important – incentives to restrict unsustainable behavior and promote regional consumption and production.

It still remains to be seen what form the international efforts towards climate change governance will take. As a bottom-up-approach seems likely in the long run, a lot depends on individual countries and groups of countries taking leadership by offering ambitious reduction commitments in order to create enough trust and make long-term cooperation under a bottom-up-approach possible. It is also questionable whether the path should be pursued under the UNFCCC. In 2000 the top 25 GHG emitters accounted for 85% of global GHG emissions and the top 5 emitters today (China, USA, EU, India and Russia) account for 60% of global GHG emissions (Leal-Arcas 2012: 4). It might be more promising to move the agenda of climate change to a club of major emitters, even though due to the intrinsic linkage between the climate regime and the international trade regime this might produce frictions with the WTO's non-discrimination principle (Ibid: 54).

We have now developed an understanding of the regulatory legal framework developed at the UN level to tackle climate change. An understanding of these institutions is important as they are a constant point of reference in climate politics. It would be wrong to stop our analysis at this point, even though in political science there is a "tendency to associate specific international issues with dedicated multilateral institutions" (Michonski / Levi 2010: 1) that nevertheless fails "to properly capture the reality of global governance, institutions, and regimes" (Ibid.). There are shortcomings in a couple of areas of the UN's legal regime. These deficits along with national interests are among the root causes for what Keohane and Victor have called a "Cambrian explosion" (2011: 12), "a proliferation of organizations, rules, implementing mechanisms, financing arrangements and operational activities" (Abbott 2011: 1). We should therefore now shift our attention to the broader regime complex of climate change and develop an understanding of it in order to analyze the way Rio+20's framing of a green economy in its outcome document "The Future We Want" is interacting with this regime complex.

3.2. The regime complex of climate change

Robert Keohane and David Victor (2011 and 2010) have conceptualized the regime complex of climate change mainly in terms of loosely coupled intergovernmental cooperation. They have visualized their findings in a map that is reproduced in Figure 3. It has been argued that

this map “makes a valuable contribution by highlighting the multiple forms of governance (e.g., multilateral, bilateral, club, expert), issue areas (e.g., adaptation, nuclear, trade, financial), and governance functions (e.g., assessment, rule-making, financial assistance) that figure in the climate change regime” (Abbott 2011: 4).

The regime complex of climate change can be seen as a complex consisting of multi-level processes involving a multitude of actors at all levels:

“[T]he complete regime complex for climate change should be understood to also include bilateral relationships (such as that between the United States and China), efforts under the UNFCCC (such as the Kyoto Protocol and the Clean Development Mechanism), as well as the national laws and institutions in individual countries that will develop and execute those countries’ domestic and foreign policy responses to climate change. (...) [T]he full regime complex also includes international institutions that draw together either private actors (as is the case with the Chicago Climate Exchange) or a mix of private and public players (such as in the case of the International Standards Organization)” (Michonski / Levi 2010: 2).

Kenneth Abbott (2011) has also highlighted the importance of accounting for transnational actors in the analysis of the regime complex of climate change which he explicitly refers to as the “transnational regime complex for climate change” that is characterized by fragmentation, polycentrism and decentralization (Ibid: 1). When analyzing the relevant actors, it is thus important to pay attention to actors from three major categories: “State, Firm and Civil Society Actors” (Ibid: 6).

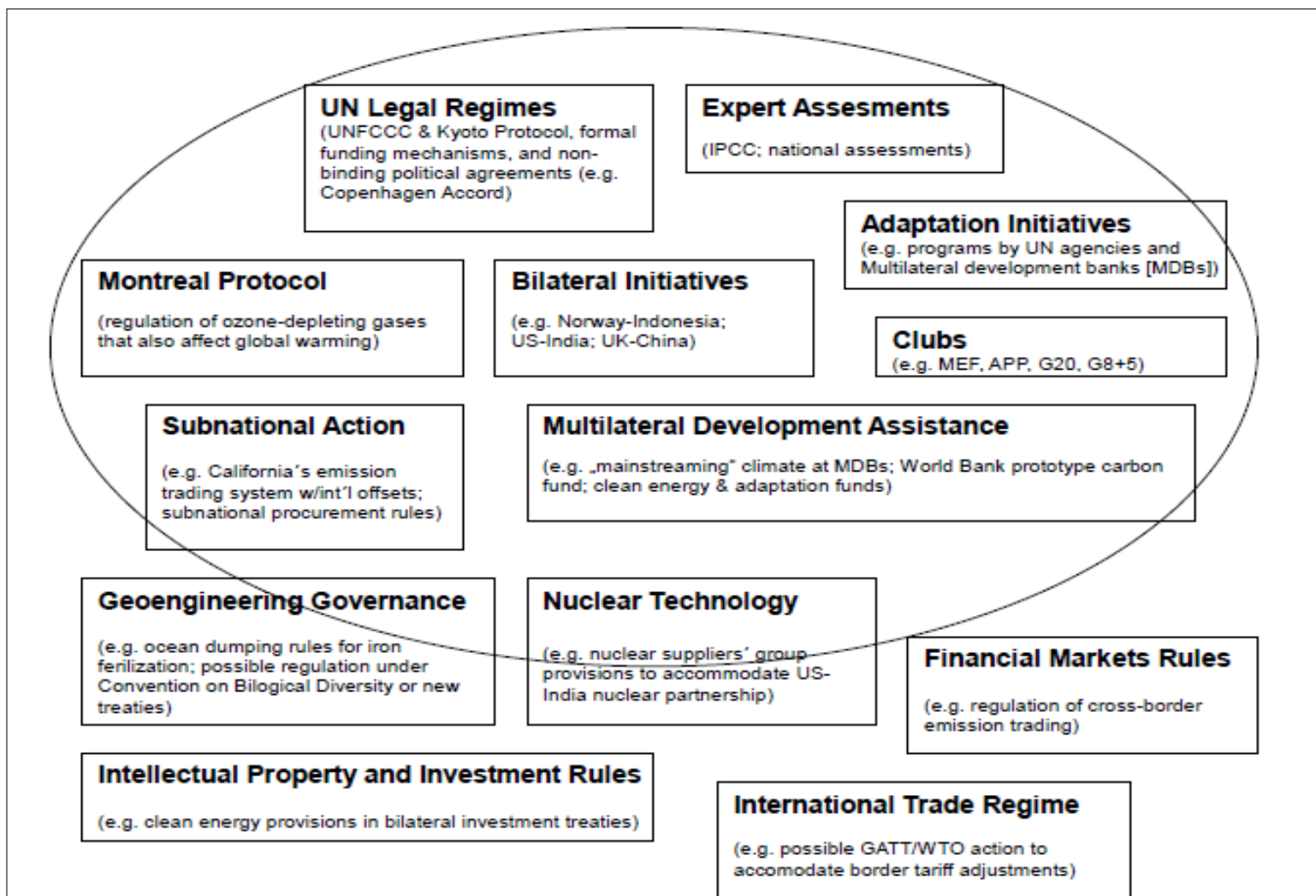


Figure 3: The Regime Complex for Climate Change (Source: Keohane / Victor 2011: 10; own representation due to bad quality in original). Keohane and Victor indicate that “[b]oxes show the main institutional elements and initiatives (...). Elements inside the oval represent forums where substantial efforts at rule-making have occurred, focused on one or more of the tasks needed to manage the diversity of cooperation problems that arise with climate change ; elements outside are areas where climate rule making is requiring additional, supporting rules“ (Ibid.). For a more detailed description of many of the actors mentioned here see Michonski / Levi 2010.

The map of Keohane and Victor is also far from complete. UNEP, the International Maritime Organization (IMO), the Asia-Pacific Economic Cooperation Forum (APEC forum), the International Civil Aviation Organization (ICAO), the International Atomic Energy Agency (IAEA), the International Energy Agency (IEA), the United Nations Food and Agriculture Programme (FAO), the United Nations World Food Programme (WFP), the United Nations World Health Organization (WHO) and the United Nations Development Programme (UNDP) are just a few examples of organizations that play a role in climate governance. Here is not the place to elaborate on their individual roles, but the interested reader may find a detailed elaboration of this in Katherine Michonski and Michael Levi's working paper (2010) for the Council of Foreign Relations (see also Busch et al. 2012; Tienhaara et al. 2012; Gupta et al. 2012).

According to the six normative assessment criteria by Keohane and Victor that we have discussed in chapter 2.7, the regime complex of climate change does not score high: There is low coherence and accountability due to the division between Annex I and non-Annex I countries; the lack of accountability mechanisms in the UNFCCC and the Kyoto Protocol reduces determinacy; the lack of political will demonstrated by the USA and China reduce the sustainability and fairness of the regime; and the epistemic quality is also lacking due to the efforts required to change the rules (Keohane / Victor 2011: 17).

A key lesson for policy-makers derived from this is that there is already a plethora of institutions addressing climate change and that a careful redesign might be more useful than the creation of new institutions (Michonski / Levi 2010: 3). Even though bilateral cooperation is becoming more important, a further development of the international cooperation under the UNFCCC still remains central and should be pursued with determination (WBGU 2010: 6). It is important though to anticipate areas where conflicts with other institutions and regimes may arise, e.g. with WTO and the global trade regime (Michonski / Levi 2010: 4). Especially if emissions trading is to stay one of the key mechanisms in regulating global emissions (supposing that long-term goals for emissions will be part of a future agreement), it might be helpful to establish border tax adjustments (BTAs)⁶⁸ to create incentives for countries to join an emissions trading system (Keohane / Victor 2011: 18). There has been an increase in decentralized and local initiatives by companies, administrations and civil-society groups that actively work towards reducing GHG-emissions and that should thus be supported more actively by policy makers (WBGU 2010: 6).

Lastly, policy makers need to be wary of the fact that the growth of a regime complex leads to a shift in style from top-down policies to more loose bottom-up policies (Raustiala / Victor 2004: 306). As more actors become involved, the possibilities of "turf battles and eroding responsibility may follow" (Andresen 2002: 24) and thus more informal modes of cooperation might be more fruitful. This nevertheless requires long-term commitments and leadership by individual actors. Strong national commitments (not necessarily tied to any international treaties) are also necessary in order to mobilize financing for mitigation projects (e.g. through carbon markets or taxes) (Panitchpakdi 2011: 8).

⁶⁸ Sometimes also referred to as *Border Carbon Adjustments (BCAs)*, aiming at inferring a tax "...on imports based on the environmental footprint of their production and transportation." (Panitchpakdi 2011: 4)

4. Rio+20's Green Economy

It is now time to shift attention to the second analytical field of this paper: the idea of a Green Economy as it was framed in the UNCSD's outcome document "The Future We Want" (UN 2012a). Before going into detail on the actual decision itself and later its implications for the climate regime, it seems necessary to develop an idea about the theoretical perspective green economy is based on: ecological modernization. I will therefore first elaborate in this chapter on this perspective and its basic ideas as well as limitations. Afterwards, the development of the idea of a Green Economy and the way it was framed before the UNCSD shall be analyzed before shifting attention to the actual outcome document and the guidance it delivers for future development processes.

4.1. Ecological Modernization

It is helpful to have a look into environmental sociology (where the theory originated from) if we want to understand how ecological modernization emerged as one of the general principles of environmental policy making. In 1972 the Club of Rome published its famous report "The limits to growth" (Meadows et al. 1972). The report used computer modeling to predict the consequences of unregulated industrialization processes, as well as increases in population growth, nutrition levels and pollution in an environment of finite resources. The results were drastic: if industrialization, population growth, food production, pollution and the consumption of resources would continue to grow, the Earth's carrying capacity would be reached within one hundred years (Ibid: 17). Instead of growth, the authors called for an ecological and economic state of stability without growth, as this was the only scenario in which their models did not collapse (Ibid.). The report had an immense influence on the development of the environmental movement, as it provided a solid basis for establishing the environmental discourse in the mainstream discourse (Huber 2011a: 135). The logical consequence of the Malthusian results of the "The limits to Growth" was the call for a renunciation of growth and consumption. This was of course a challenge to the status-quo of capitalist production and this was also reflected in the environmental movement: hippies, the new social movements and the emerging green parties challenged the industrial establishment and thus met resistance, even though they were able to dominate the environmental discourse – not least because of the arguments presented by The Limits to Growth (Ibid: 136-138).

By the mid-1970s resistance from the industrial elites was mainly limited to framing the issue as a question of ecology versus economy (environmental protection or jobs), but by the mid 1970s approaches emerged that aimed at highlighting the qualitative rather than the quantitative dimension of growth (Ibid: 139). Approaches focusing on organic growth, qualitative growth, selective growth or decoupled growth provided new perspectives and solutions and thus contributed to advancing the environmental discourse even though they were far from perfect (Ibid: 139-142). The model of decoupled growth was an important precursor of ecological modernization: it was basically the idea that there is no 1:1 relation between growth in terms of income and growth in terms of the input of resources as consumers have an interest in low prices and these can only be achieved if production is made more efficient and thus less resource intensive (Ibid: 142). Eco-efficiency and industrial

innovation are among the core principles of Ecological Modernization Theory (EMT) as we shall see.

During the early 1980s European social scientists⁶⁹ – most notably in Germany, the Netherlands and the United Kingdom – developed a “technology-based and innovation oriented approach to environmental policy” (Jänicke 2008: 557). EMT should be seen in the tradition of sociological modernization theory that views modernization as a continuing, path-dependent and knowledge-based process of transition from traditional to modern societies (Huber 2011b: 280). Furthermore, modernization is seen as a mechanism driven by market logic (Jänicke 2008: 557). It thus accepts the logic of modern capitalism without questioning it and can therefore be seen as a rather pro-modal theory.

EMT views modernized societies as having the best chances to adapt, even though the possibility of a post-modern society with different social and cultural features is not ruled out (Parsons 2009: 16). Nevertheless does EMT stick to the premise of continuing modernization (Huber 2011a: 143) and is thus distinct from other approaches like postmodernist approaches or some neo-marxist approaches with their focus on the individual’s behavior (Mol / Sonnenfeld 2000: 5). It also contrasts with the idea of conservation that wishes to reestablish or conserve a certain status whereas EMT is more progressive, less occupied with fixed goals and clearly anthropocentric (Huber 2011b: 282).

A second important premise of EMT is that there is not necessarily an antagonism of ecology and economy as it was framed by the environmental movement of the 1970s (Huber 2011a: 143). Instead it is argued that the reduction of environmental impacts through innovation and increased productivity of economic processes can be a source of economic growth and thus of welfare just like conventional economic growth. “Central to [EMT] is the view that the era of late modernity offers promise that industrialization, technological development, economic growth, and capitalism are not only potentially compatible with ecological sustainability but also may be key drivers of environmental reforms” (York / Rosa 2003: 274). “Ecological modernization argues that while the most pressing environmental problems of the last century were caused by industrialization and modernization, the solution does not reside in either deindustrialization or demodernization; instead a programme of more industrialization and modernization is needed” (Carolan 2004: 249).

It is important to highlight that ecological modernization is not a process limited to the material dimension of the economy, but it is “...social and institutional transformations which have been and still are at the core of much current scholarship on ecological modernisation [sic]” (Mol / Sonnenfeld 2000: 6)⁷⁰. The German Advisory Council on Global Change (WBGU)⁷¹ also highlighted the central role of transformational processes⁷² in a report (2011) published in the forefront of UNCSD, calling for measures of ecological modernization (Ibid.: 6-7). The focus on transformations that naturally occur from a given starting point again highlight the pro-modal tendency of EMT, as the focus is on changing a status-quo from within and not replacing it, as some critical theories aim for.

The driving forces behind the process of ecological modernization are thus threefold: first, there is the market logic of modernization, second, building upon this is the competition for

69 Important contributors during this time were Martin Jänicke, Volker von Prittwitz, Udo Simonis, Klaus Zimmermann, Gert Spaargaren, Maarten Hajer, Arthur P.J. Mol, Albert Weale, Maurie Colen and Joseph (Mol / Sonnenfeld 2000:4).

70 These processes include 1) a changing role of science and technology as potential preventers and not just causes of ecological destruction, 2) an increasing importance of market dynamics and economic agents, 3) transformations in the role of nation states, 4) modifications in the role and ideology of social movements, and 5) changing discursive practices and emerging new ideologies (Mol / Sonnenfeld 2000: 6-7)

71 The German Advisory Council on Global Change (Wissenschaftlicher Beirat globale Umweltveränderungen) is an advisory body of the German government. It was established in 1992 and its purpose is to provide the government with knowledge as well as policy and research suggestions regarding global change processes.

72 The report also refers to Karl Polanyi’s „Great Transformation“ as an analogy and base of reference for its argument (WBGU 2011: 2).

innovation that participants of a market are forced to enter into, and third, the potential marketability of environmental needs (Jänicke 2008: 557).

Theorists of ecological modernization argue that only the industry sector with its innovative networks and established structures of cooperation is able to undertake the steps necessary for a structural change at the necessary size (Huber 2011a: 145). Especially developed countries with high technological standards are seen as the places where the necessary innovations take place and will then diffuse, especially due to the actions of internationally active companies from these countries (Huber 2008; Jänicke 2003; Tienhaara et al. 2012). An important distinction regarding innovations is the differentiation of weak environmental innovations (being limited to niche markets and/or only consisting of incremental changes) and strong environmental innovations (with a high market penetration and/or radical changes) (Jänicke / Lindemann 2010: 129).

The role of the political system is seen as a provider of conditions that enable and foster environmental innovation: instruments of innovation policy (project funding for research & development as well as for market launch) and environmental policy (e.g. taxes, tradable permits, command & control measures, green public procurement and the introduction of eco-labels) can be used to support the different phases of the process of innovation (invention, market launch, diffusion) (Jänicke / Lindemann 2010: 131). Furthermore, it is argued that policy-makers should support innovations during the early phases of the supply chain, as these tend to have greater environmental impacts than later phases (Huber 2010b: 290).

Even though EMT accepts the logic of modern capitalism, it distances itself from neoclassical approaches that sometimes tend to underestimate the policy process (Jänicke 2008: 559). Instead, the role of political regulation is highlighted as one of the driving forces of environmental innovation (Ibid.), as environmental innovations originating from uncontrolled market activities are considered to be too slow to contribute to the solution of global environmental problems (Jänicke 2011: 140). An often referenced model of political steering is the Japanese top-runner-approach (e.g. Huber 2011a: 294 and Jänicke 2008: 559)⁷³. In sum, even though the role of government support is characterized as having a greater impact during early phases of the innovation process and supply chain, theorists of ecological modernization argue that “smart regulation” - i.e. the combination of ambitious environmental targets with a well-thought combination of policy instruments (market-based, regulatory, supporting) – is needed in order to initiate and promote ecological modernization processes (Jänicke / Lindemann 2010: 135 and Jänicke 2008: 559).

Theorists of EMT have been quite enthusiastic about their theory, especially during the 1990s. Arthur P.J. Mol has even gone so far as to state “...that the only possible way out of the ecological crisis is by going further into process of modernization” (Mol 1995: 42; cited from York / Rosa 2003). He later softened this claim by stating that ecological modernization is not a panacea (Mol / Sonnenfeld 2000: 3). Similarly, Martin Jänicke noted: “The potential of “ecological modernisation” to radically reduce the environmental burden of industrial growth is without any alternative” (2008: 563; brackets in original). In response to these nonetheless strong claims, EMT has been the target of much criticism, an overview of which shall be given now.

73 The top-runner-approach – that was first applied in Japan – aims at supporting the diffusion of environmentally friendlier production methods throughout a sector, e.g. electronic devices. In order to achieve this, the most efficient product of a certain type is being elevated as the mandatory standard which other products will have to match within a certain period, e.g. 5 years. In order to assert pressure on producers, a tactic of *naming and shaming* is being applied during the fulfillment period. The approach has proven to be quite successful, as it has led to many efficiency gains in several product areas, often even exceeding the goal of the current fulfillment period (for a more detailed account see Jänicke 2008: 560 or Jänicke / Lindemann 2010: 134)

4.1.1. Critical Views on Ecological Modernization

EMT is far from being unchallenged. Criticism has been brought forward from the theory itself as well as from other theoretical perspectives.

One challenge to the idea of innovation based on ecological protection could be called the race-to-the-bottom-argument. It basically states that under the condition of a globalized market where governments influence the allocation of foreign direct investment by the level of standards that they apply in different sectors (e.g. environment or labor), strong environmental standards and goals are unlikely. Instead, governments are more likely to continuously lower their environmental standards. Martin Jänicke argued against this objection that environmental innovations are by now a main driver of innovative competition between countries and that ambitious environmental standards can help countries to establish lead-markets and gain “first-mover advantages” (Jänicke 2003: 8).

Another argument concerns the resistance which the diffusion of innovations might cause: “Innovations are always linked with ‘creative destruction’ and thereby produce ‘modernization losers’ - a highly conflictual process that is often ignored in the current ‘innovation euphoria’” (Jänicke / Lindemann 2010: 135; quotation marks in original). An example for this has been brought forward by Horlings and Marsden (2011: 449) who explored the potential of ecological modernization towards meeting the world’s future food demands and who identified the resistance of corporate market actors as one of the main impediments of fundamentally changing the structure of the world’s agricultural system. Still, this argument concerns the procedural dimension of societal change and can thus not be an argument against EMT. Societal changes always create resistance, as there will always be members of society that profit from the status-quo and thus have an interest in conserving it. After all, this is the core of conservative thought. Nevertheless, policy-makers do have to remember this conflictual dimension when designing instruments to support processes of ecological modernization. Jänicke calls for “structural solutions” to overcome this resistance, even though he fails to specify what exactly is meant by this and instead calls for further research towards this field (Jänicke 2008: 564).

Another important argument against EMT is counter-technocratic: “...technology simply cannot solve all environmental problems” (Jänicke / Lindemann 2010: 135). The loss of biodiversity or the degradation of soil are two examples for global environmental problems where technological solutions are rare – if there are any at all. One could take this even further and argue that certain types of ecological modernization processes are creating new environmental problems: the planned large-scale installation of solar-thermic-plants in Northern Africa might have an impact on biodiversity in that era. Or the increasing installation of wind power plants could lead to an increase in demand for Neodymium, a rare earth metal, the production of which could lead to harsh environmental impacts due to poisonous residue from the production process (Schoßig 2011: 3).

The focus on pioneer countries and lead-markets brings with it another important problem: companies able to create innovations and governments able to deliver the necessary political support to accelerate these processes are not equally spread around the globe. Instead, it is mostly advanced industrialized countries that produce the majority of environmental innovations, most notably the axis North America-Europe-Japan (Huber 2011b: 294). Even though some of the newly industrialized countries (e.g. China, India, Brazil, Turkey, Mexico, or South Africa) are certainly closing the gap, there still remain barriers in these countries not

mentioning the large number of developing countries (Ibid.). This trend of ecological modernization has been criticized from within the theory, but it also seems quite critical from an egalitarian point of view as it could further exacerbate the existing differentials in countries' levels of modernity and (even more important) structurally embedded hierarchies between countries in the global political system. Theoretically, developing and newly industrialized countries could gain some advantages by leapfrogging⁷⁴ or tunneling-through⁷⁵, but these possibilities are not open to all countries due to a lack of cultural coherence and national stability (Huber 2008: 365).

In a more general way, EMT has also been criticized for its "Eurocentricity" (Buttel 2000: 64), that is "...the fact that its theoretical roots and empirical examples are largely taken from a set of Northern European countries that are distinctive by world standards" (Ibid.).

EMT has also been criticized from a neo-marxist perspective of environmental sociology for being too underconceptualized with regard to consumption. Michael Carolan (2004) has argued that as the focus of EMT lies on the production processes it is only addressing a part of the problem: "...any resolution to our global ecological problems can only be achieved through the problematization of both production and consumption" (Ibid.: 248). For Carolan, a change in consumption patterns contradicts the materialist nature of the capitalist production system and the alienation caused by this system is unlikely to be overcome by simply greening the production patterns: "Few in this world are ready to give up on jewelry, cars, big-screen televisions, and computers, although many would like them produced in as "green" a manner as possible. And the billions that do not yet possess these items are far from giving up on the idea of one day having them in their possession" (Ibid.: 253; quotation marks in original). Carolan instead calls for a more radical, reflexive and holistic approach to ecological modernization instead of only viewing it in "techno-corporatist" terms (Ibid.: 255).

In direct reply to this critique Arthur Mol and Gert Spaargaren (2000) have argued that the process of ecological modernization itself and the changes in productive patterns will automatically lead to changing consumption patterns. They admit that EMT has in its early days failed to sufficiently recognize consumption as an important variable (Ibid.: 263). They nevertheless fail to base their claim of production patterns changing in response to processes of ecological modernization on a solid argumentation and the response thus does not seem very convincing.

David Pepper (1998) has argued in a similar direction as Carolan, but from a more policy-oriented eco-socialist perspective. For him, ecological modernization and the policies implementing it are the expression of "...capital doing what it must do..." (Ibid.: 5), namely economizing the environment in order to prevent environmental damage exceeding the point where its costs outbalance its gains. I have already mentioned that EMT is based on an anthropocentric perspective, but Pepper makes it explicit: "...[EMT] completely discounts the radical environmentalist's argument about intrinsic value, existence value and any other intrinsically non-monetizable value of the environment" (Ibid.).

Pepper nevertheless argues from an anthropocentric perspective as well, calling for a restructuring of economic and political institutions and arrangements "...such as credit unions, local exchange and trading systems (LETS), community land banks, basic income schemes, farm-to-doorstep distribution, local energy production based on renewables, municipalization of bureaucracies, community and neighbourhood groups and collectivized,

74 "Leapfrogging means bypassing one or two generations of technology and directly skipping into the latest generation, e.g. mobile-phone networks without a previously installed full-scale fixed-line network, or adopting the electric arc furnace in steel industry, jumping the basic oxygen and the open hearth process" (Huber 2008: 365)

75 "The term is derived from the model of the inverted U-shaped environmental Kuznets curve (EKC). EKCs describe environmental intensity, i.e., resource consumption and pollution per unit product, as at first increasing, thereafter decreasing, in correspondence to development stage (...). Countries which develop later might avoid climbing to old-industrial heights of resource consumption and pollution by 'tunneling' through those old-industrial EKCs" (Huber 2008: 365)

self-managed enterprises" (Ibid.: 6). Interestingly, Pepper recognizes the ambivalence inherent in his proposal: in order to achieve this restructuring without just resorting to pre-industrialized levels, there is a need for the tools and achievements of modernization, for example modern communications techniques (Ibid.: 7). He nonetheless fails (as unfortunately many critical approaches do) to advance his approach beyond the level of a thought experiment.

For Michael Kohler (2000), one of the central arguments against EMT (as well as modernization theory in general) is the implausibility of the approach's anthropology: the premise of the "...well-informed, rational actor who understands and pursues her authentic moral interests. Such voluntarism is implausible for many reasons, not least because it presumes that individuals will choose to forgo certain tangible benefits in their day-to-day lives in order to secure other benefits, sometimes quite intangible, for others that they will never know" (Ibid.: 208)

Richard York and Eugene Rosa (2003) have challenged EMT on multiple levels. Via a quantitative analysis of 154 nations' ratifications of 22 multilateral environmental agreements they could show that there is a significant correlation between a country's ratification behavior and its per capita emissions of carbon dioxide (Ibid.: 276). They also conducted a research program to analyze the effect of state environmentalism on a nation's environmental impact. They could not find an effect, even when comparing EU-countries (often regarded as advanced in terms of ecological modernization). This led them to the claim that modernization processes do not "...reduce environmental problems and bring about a transition to sustainability..." (Ibid.: 275) but rather that "...it has little to say about ecological crises and environmental sustainability [...] other than that societies react to these issues with institutional structures that convey the impression of solving environmental problems" (Ibid.).

York and Rosa have also challenged the relevance of EMT from another empirical direction: they claim that the majority of studies focuses on case studies and that there is a lack of meta-analysis accounting for stochastic variance (Ibid.: 277). "This raises the question of whether in fact ecological improvements in modern societies, industries and firms are widespread. It may be instead simply that reports about the few examples that exist of ecological improvements are widespread" (Ibid.: 278; italics in original).

Furthermore, York and Rosa criticize that scholars applying EMT need to be careful when choosing their unit of analysis, as a sectoral (mostly national) perspective tends to overlook the flows of resources in a globalized economy. They deem this the "Netherlands Fallacy", as a large part of the resources consumed in the Netherlands comes from other countries (Ibid.: 279).

Criticism and support have also been brought forward from the perspective of sustainable development. As this is a focus of the masters program in which this thesis is written, I will dedicate it a short chapter of its own.

4.1.2. Ecological Modernization and Sustainable Development

Sustainable Development (SD) could nowadays be classified as the most important point of reference for environmental policies (Zaccai 2012: 87). This is noteworthy, as the concept itself is not restricted to environmental issues. Instead, it aims at reconciling several aspects of development with the ultimate goal of eliminating the externalized effects of global economic activities in a way that future generations will have the same chances as present

generations – i.e. making our way of living sustainable. In 1987 the report “Our common future” (WCED, 1987) by the United Nations World Commission on Environment and Development (WCED)⁷⁶ explicitly outlined the concept for the first time⁷⁷:

“Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

the concept of ‘needs’, in particular the essential needs of the world’s poor, to which overriding priority should be given; and

the idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.” (WCED 1987: 41)

SD as conceptualized by the WCED thus contains two notions: first, that there are basic needs shared by all humans that should be satisfied. Second, that the carrying capacity of the global ecosystem is limited and increasingly put under pressure by population and development dynamics.

In order to achieve SD, the report lists seven strategic imperatives: (1) reviving growth; (2) changing the quality of growth; (3) Meeting essential human needs; (4) Ensuring a sustainable level of production; (5) Conserving and enhancing the resource base; (6) Reorienting technology and managing risk; and (7) Merging environment and economics in decision making (Ibid.: 41).

It should be noted that the agreement on SD in the WCED has been partly explained with the prevailing differences between the North and the South regarding the connection of environment and development (especially the international economic relations at the heart of it) and that SD served as a kind of compromise formula “...to which everybody could subscribe. It was appealing, sufficiently vague and had multiple possible meanings” Gosovic 2011: 89).

The crucial impetus for the concept on the international level came with the UNCED in 1992 and its core documents: the Rio-Declaration the two major environmental conventions (climate, biodiversity) and the forest declaration (Huber 2010a: 155). As a program of implementation of SD, Agenda 21 also has to be mentioned, as – together with its implementation at the local level (Local Agenda 21) – it had a large share in the global implementation of SD. The establishment of the Forest Stewardship Council (FSC) with its tripartite decision-making structure based on equal representation of stakeholders from the three pillars of sustainable development (economy, ecology, social) (Garrelts / Flittner 2011) could serve as an example of the implementation of SD as envisioned in Agenda 21 (Pattberg 2012: 104).

The Rio-Declaration reconfirmed the goals of the WCED’s report and for the first ten years after UNCED at least in European policies⁷⁸ the concept has been centered around the connection of environmental and ecological issues: “Aligned with, but not identical to

76 The commission is often being referred to as “Brundtland Commission” (e.g. Zaccai 2012: 80) in reference to its chairwoman Gro Harlem Brundtland, who has also been Norwegian prime minister three times. Similarly the WCED’s report is sometimes also being referred to as “Brundtland-Report” (e.g. Huber 2010a: 155).

77 Similar concepts can still be traced further backwards. Oluf Langhelle for example has argued that a concept quite similar can be found in the work done by the World Council of Churches (Langhelle 2000: 306).

78 During a time in which the EU was one of the major driving forces in international environmental governance (Ott / Chung 2005: 89).

Brundtland's strategic imperatives, the aims of environmental integration and the implication of major sectors in this respect capture the essence of European sustainable development policies, at least until the World Summit on Sustainable Development in Johannesburg in 2002" (Zaccai 2012: 80). On a global scale, SD has signaled that development and environment are not necessarily conflicting (quite similar to EMT), even though challenges and tensions between the two fields remain (Dubash 2012: 49).

The most common denominator of the concept of SD can arguably be found in the three-pillars-approach, i.e. the balancing of ecological, environmental and social objectives that became more influential after the 2002 WSSD (Ibid.). In reference to the magical diamond of economic policies (achieving economic growth, price stability, full employment and a stable balance of trade) whose individual goals are not to be achieved without decreasing the success of the others, the three-pillars-approach has also been labeled as the "magical triangle" (Huber 2010a: 155).

Nevertheless, the concept of three pillars of SD needs further specification as it is otherwise quite difficult to derive concrete actions necessary for the achievement of SD. This argument becomes more valid if we look at the multitude of definitions of SD that exist beyond the official documents. Oluf Langhelle (2000) has argued that the definition and its base of reference are crucial in this context: "The point of departure here is that how the problem is framed (which includes the way it is defined) also has implications for what is seen as necessary changes (Ibid.: 307). Edwin Zaccai has also pointed towards different actors using different interpretations of SD: "Beyond [the] official definitions, the interpretation of sustainable development has always been a kind of game that academic, political, and social actors can play, because of its openness and plasticity to every context" (Zaccai 2012: 81).

These actors include national governments that establish national strategies for sustainable development (e.g. Bundesregierung 2002), supranational entities like the EU shaping the political processes of their member states (Ott / Chung 2005) and non-state actors engaging in the development of scenarios for SD (e.g. Hans-Böckler Stiftung 2000) or specifying the concept to issue-areas like local governments (e.g. ICLEI 2003) or environment (e.g. Greenpeace 2012).

Also, transnational non-state actors play an increasingly important role (Pattberg 2012). Due to the lack of strong institutions for global governance, economic globalization has led to a deficit in the nation states' capability to regulate the activities of business actors, especially those of trans-national companies (TNCs). This has caused an increase in soft steering instruments being applied by state and non-state actors in order to achieve (1) normative and regulatory effects, (2) discursive effects or (3) material and structural effects (Ibid.: 100-101). These instruments include market-based instruments (as in climate governance), voluntary commitments and standards, collaborative action between a variety of (governmental, non-governmental and business) actors, and the increased use of information instruments (Zaccai 2012: 83).

The concept of Corporate Social Responsibility (CSR) is closely tied to this idea of integrating firms in the implementation of SD. UNCED in 1992 marked the beginning of increasing engagement of private economic actors as is exemplified in the creation of the Business Council on Sustainable Development (BCSD)⁷⁹ (Runnalls 2011: 2). By orienting their internal processes on sustainability, companies might gain reputation benefits, thus creating a win-win-situation between SD and business interests⁸⁰. This trend has further increased since the

79 In 1995 the BCSD merged with the *World Industry Council for the Environment* (WICE) to form the *World Business Council on Sustainable Development* (WBCSD).

80 The industries' interest in SD was also increased by their interest in escaping the debate about risks that started during the 1980s (Huber 2010a: 161 and Brand 2010: 136) and that was most prominently represented by Ulrich Beck (e.g. 1986).

2002 WSSD that launched many public-private cooperations, the so called Partnerships for Sustainable Development (Biermann 2007: 332). In the Johannesburg Plan of Implementation (JPOI)⁸¹, governments also committed themselves "...to enhance corporate environmental and social responsibility and accountability through legislative initiatives, with the aim of encouraging the business sector to improve social and environmental performance through voluntary initiatives, including environmental management systems and public reporting on environmental and social issues" (Bertazzi 2011: 71). CSR-reporting is now practiced by more than 2000 corporations in over 90 countries (Panitchpakdi 2011: 3).

It should be noted though that these measures can only be successful if they are implemented in a multi-level system of governance (Zimpelmann / Zöckler 2008: 137) and that the notion of win-win-situations only applies at the macro-level as there will necessarily be winners and losers and thus conflict (Langhelle 2000: 316).

SD and Sustainability⁸² – which are often used as synonyms – have become terms with an incredible amount of references and interpretations from very different spheres and actors, a fact that contributed to the success and the failure of SD – depending on the point of view taken: "...sustainable development creates a consensus formula which enables actors to pursue their interests and norms to de-legitimize other norms and interests which go beyond these [formulas]" (Brand 2010: 142). In this sense, SD is quite an oxymoron (Brand 2012: 29).

The distinction between strong and weak sustainability is important, the latter accepting that natural capital could be substituted by technologically produced capital, whereas the former entails the idea that natural capital cannot be substituted and therefore needs to be preserved and restored (Huber 2010a: 157-158). The two notions of sustainability also represent two frames with far-reaching consequences regarding the necessary changes: efficiency (weak sustainability) and sufficiency (strong sustainability)⁸³ (Ibid.: 161 and 166). Whereas the sufficiency-oriented approach seems to be more holistic and demanding more fundamental change (and its supporters usually coming from the political left), the form of sustainable development derived out of the Rio-process has for example been criticized by neo-marxists for being efficiency-oriented and driven by the logic of the contemporary capitalist economy: "[b]y not questioning the logic of capitalist accumulation and the model of industrial society as the fundamental causes of the destruction of the conditions that make life possible, it provided new legitimacy to neoliberal globalisation[sic], which began to present itself as sustainable, despite its overwhelmingly devastating dynamic" (Lander 2011:3).

This is however not the place to engage in an in-depth discussion of SD, as this could easily fill another paper the size of this one. Therefore, I will now focus on some of the arguments for and against ecological modernization that have been brought forward from the perspective of SD:

If we take the three-pillars-approach as a basis, then one point of criticism becomes obvious: as EMT aims at reconciling ecology and economy, it tends to overlook the social dimension. SD incorporates this dimension, taking into account the north-south-divide, a concept of

81 The JPOI's legal text can be found online: http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf (last accessed: 16.7.2012)

82 Ulrich Grober (2010) has written a highly readable, yet in parts somewhat inaccurate, cultural history of the term *sustainability*, wherein he traces the origins and developments of the term.

83 *Sufficiency* aims at changing lifestyles and consumption patterns, e.g. by promoting abstinence of consumption, contemplation and deceleration as values in themselves (Huber 2010a: 161). *Efficiency* on the other hand aims at further decoupling economic development and ecological impacts from each other (Ibid.). Sufficiency-strategies manifest themselves in bourgeois concepts like the *LOHAS* (Lifestyle of Health and Sustainability) and are not adaptable on a global scale as they presuppose a level of access to resources that cannot be guaranteed at a global scale. Efficiency strategies are more pragmatic as can be seen in Ecological Modernization Theory which clearly represents an approach from efficiency.

justice (intra- and inter-generational), basic ‘needs’ of human beings and the embedment of human beings in social as well as ecological and economic relations.

Furthermore, EMT has been criticized for being able to solve smaller environmental problems like pollution, chemical waste or acidification, but lacking the ability to solve “ecological high-consequence risks” (Langhelle 2000: 309) like climate change, as these require a more fundamental approach that goes beyond technical solutions and thus provides a more fundamental critique, taking account of modern “existential anxiety” (Ibid.) and targeting current patterns of production and consumption. This is certainly true for the type of SD building on the strong notion of sustainability.

The strong notion of sustainability also leads to a perspective on SD that has to prioritize different environmental problems according to their relevance for moving towards a more sustainable world. For Oluf Langhelle, this leads to a priority of climate change⁸⁴ and actions targeting the energy sector and he criticizes EMT for not being able to make these distinctions between different environmental problems (Ibid.: 312).

It has already been mentioned earlier that EMT tends to be eurocentric and to generally favor technologically advanced countries (Buttel 2000: 64 and Huber 2011b: 294). This criticism can also be brought forward from a SD-perspective, as an unequal distribution of chances might be counterproductive towards securing the basic needs of all human beings. It could also be in line with Ulrich Brand’s (2010) critique of SD and EMT as being hegemonic discourses, even though this clearly depends on the notion of sustainability used as a basis for one’s argument, as Brand seems to base his argument on a weak form of sustainability.

From a strong notion of sustainability, EMT can also be criticized for being anthropocentric and thus paying insufficient attention to the interests and needs of nature (Pepper 1998: 1). David Pepper has nonetheless shown that even from a strong concept of sustainability a “homocentric” (Ibid.: 2) perspective towards SD could be established by conceptualizing humanity as a steward of nature.

EMT can also be criticized for overlooking long-term effects in favor of short-term gains regarding environmental impacts. Jeffrey Sachs for example calls for nuclear power and carbon sequestration in order to reduce the emissions of GHGs (2011: 8). His argumentation is based on the premises of growing levels of economic activity as well as a growing world population and he argues for technological innovations (i.e. ecological modernization) being the only lever humanity could realistically adjust (without raising severe moral issues). I do not want to challenge his argument in general – which is very sound – and also not to indulge in technological pessimism, but I do have to make the normative claim that caution is to be applied regarding technological solutions that might bring with them other long-term problems.

Despite this criticism it should not be overlooked, that there are also various overlaps between SD and EMT. Especially when analyzed from a weak concept of sustainability, the two concepts seem to share a lot. As I have argued earlier, SD goes beyond EMT, but EMT “...should be seen as a necessary but not sufficient condition for sustainable development (...). Conflating the two is not only counterproductive for the broader agenda of sustainable

84 Out of WCED’s report ‘*Our Common Future*’ (1987), Langhelle derives “...a hierarchy of priorities and weighing of different concerns inherent in the concept of sustainable development. (...):

the satisfaction of human needs, in particular, the essential needs of the world’s poor to which overriding priority should be given;
climate change (and thus the energy issue);
loss of biological diversity;
pollution (polychlorinated biphenyl (PCB), radioactive pollution, acid rain, etc.);
food security” (2000: 318).

development, but also for the environmental policies necessary for realizing sustainable development” (Langhelle 2000: 318-319). What is needed for SD is a type of ecological modernization that goes beyond merely raising the efficiency of productive processes and minimizing their environmental effects – a type of EMT that produces a structural change of the global industry on the basis of new technologies and eco-innovations (Huber 2011a: 171).

It seems like this pragmatic approach was at the core of what the UN were aiming at by promoting the notion of a Green Economy (GE) at UNCSD in June 2012.

4.2. The Green Economy

Following a decision by the UN General Assembly from December 2009 (Panitchpakdi 2011: 1), UNCSD took place in Rio de Janeiro from June 20th-22nd 2012. Expectations for the summit differed in the academic community, depending on the specific topics (Schreuers 2012; Woodruff 2012; Gosovic 2011), but were generally meager and/or pessimistic (e.g. Runnalls 2011:4; Clemenccon 2012: 10; Haas 2012).

In the end, the final outcome document (UN 2012a) was already presented on June 19th, the day before the beginning of the conference’s high-level-segment. In the forefront the host Brazil had intensively pushed for the acceptance of a final document in order to avoid any failure in the eyes of the global public sphere as had happened in Copenhagen at the UNFCCC’s COP-15. Despite official statement’s like UN General Secretary Ban Ki-Moon praising the conference as “a success” (UN News Centre 2012), especially civil-society organizations regarded the document as being unambitious or even stepping backwards with regard to the 1992 Rio-declaration (e.g. Greenpeace 2012; Germanwatch 2012; WBGU 2012).

The two main themes of the conference were fixed early on (UN 2010): (1) green economy in the context of sustainable development and poverty eradication, and (2) the institutional framework for sustainable development⁸⁵.

The latter is the manifestation of a debate that is not new: the question of a reform of the United Nations system due to institutional weaknesses that hinder the implementation of an effective environmental and sustainability governance (e.g. Bauer et al 2012; WBGU 2000; Rechkemmer 2006). The core issues that were debated in this field were reforms of UNEP, the Commission for Sustainable Development (CSD), the United Nation’s Economic and Social Council (ECOSOC) and the United Nations General Assembly (UN 2012b) with the overall goal of further integrating and strengthening the international framework for sustainable development. Due to considerations of space, I will not go into more detail regarding these issues, however, the final outcome document “The Future We Want” (UN 2012a) failed to achieve any progress that goes beyond an unspecified financial upgrade of UNEP and the initiation of a reform process for the CSD that seems to be completely open, as it fails to specify anything that goes beyond what the to-be-established “High Level political forum” could do (UN 2012a: §85)⁸⁶.

⁸⁵ Other issues discussed at the conference – or more precisely: during the preparation conferences - were food security, water, energy, cities, green jobs, oceans and seas, natural disasters, climate change, forests and biodiversity, land degradation and desertification, mountains, chemicals and waste, sustainable consumption and production, education, gender equality, finance, science and technology, capacity building and trade (UN 2012b). The multitude of issues addressed has been identified as one of the possible reasons for lack of ambition of the final outcome document (WBGU 2012).

⁸⁶ For a more thorough discussion regarding these outcomes see for example WBGU 2012; Germanwatch 2012 or Bachmann 2012.

However, what is of interest to us here is the first topic: green economy in the context of sustainable development. The concept itself has been used increasingly since the General Assembly's decision to initiate the process leading to the conference. In order to prepare for the conference UNEP launched a Green Economy Initiative and prepared a "Green Economy Report" (2011) and the OECD also issued a report about "Green Growth" (OECD 2011). Both concepts are well-thought, address multiple issues and create complex concepts that are based on the premises established by EMT: continuing growth, a focus on eco-innovations and a decoupling of economy and ecology.

From a pragmatic point of view, it could be argued that continuing growth is a necessary prerequisite in order to achieve the support of the developing countries: "For poorer countries, development is an indispensable requirement for environmental protection" (Dasgupta 2011: 33). This also explains the strong linkage between the green economy, sustainable development and poverty eradication that can be found in the official UN documents dealing with the green economy. In fact the term "green economy" is only mentioned four times without the suffix "in the context of sustainable development and poverty eradication" in the final outcome document (and 19 times with the suffix). The UN General Secretary has also highlighted the connection between economic growth and poverty reduction (UN 2010: 4).

So what exactly is a green economy? Despite or maybe because of the wide use of the term it is quite challenging to give a precise definition (Cozendey 2011: 39; also Brand 2012: 28; Haas 2012: 97). On a very general basis, agreement seems to exist on a green economy being characterized by low levels of carbon emissions, as well as energy and resource efficiency and the further integration of formerly marginalized groups. According to UNEP's Executive Director Achim Steiner: "In its simplest expression, a green economy can be thought of as one which is low carbon, resource efficient and socially inclusive" (Steiner 2011: 12; also UNEP 2011: 2). Green Economy can probably best be seen as a "menu of policy options" (Dasgupta 2011: 34). This lack of a concrete vision is also one of the central weaknesses of the concept: "...there is as yet few academic or popular writings [sic] that clearly explains or defines the green economy, or how to transition to it. Without such intellectual focal points – such as the role played by the Limits to Growth in the early international environmental movement – it remains difficult to mobilize action around such a new campaign project" (Haas 2012: 97).

Furthermore, the wide definition by Steiner and UNEP opens up a lot of questions: What are enabling conditions that support the transition to a green economy? Do certain technologies (e.g. nuclear power, carbon-capture-and-storage, resistant trans-genetic organisms) qualify as low-carbon, even though they might be unsustainable? How can the differences in the abilities of countries to transition to a green economy be alleviated? Who will profit from a green economy and who will lose or be excluded from the benefits⁸⁷?

Finally, questions regarding the financing of the transition to a green economy are of crucial importance: UNEP's Green Economy Report identifies a misallocation of capital as the main reason for the current ecological, social and economic crises (UNEP 2011: 1). It further estimates that an average mobilization of 2% of global GDP per year (about \$1,3 trillion annually) would be necessary in order to finance a transition to a global green economy (UNEP 2011: 35). Where should this money come from? Some governments included green technology in their stimulus packages between 2008 and 2010 (Haas 2012: 98) and public financing has been identified as crucial for jump-starting the transition (UNEP 2011: 36). Nevertheless, public financing will be insufficient, (a) in terms of size, and (b) if the incentive

⁸⁷ With regard to Rio+20's outcome document "The Future We Want", the question can be asked, who exactly is 'We'? Even the range of measures that UNEP proposed has been argued to (although only slightly) disadvantage developing countries in relation to developed countries if the latter implement them unilaterally (Cosbey 2011). As unilateral implementation is at the core of bottom-up-approaches as well as EMT with its focus on eco-innovation and pioneer countries, this is an important point of criticism.

structures for private investment remain unchanged and thus steer investment towards energy and resource intensive fields (Runnells 2011: 5): "A Green Economy is not possible without a stable global financial system underpinned by open, accountable, transparent, and responsible capital markets. (...) The financial system needs to recognize such factors in its core processes and reward structures" (Ibid.). In designing effective policies for the transition toward a green economy, it would thus be important to gain the support of the financial services and investment sectors (UNEP 2011: 35), as well as to create major international funding mechanisms like the Green Climate Fund (Ibid.: 36) and to reallocate monetary streams of international development funding (Ibid.: 37).

4.3. The Green Economy in "The Future We Want"

So what exactly is "The Future We Want" with regard to a green economy? Rio+20's outcome document⁸⁸ remains impressively unspecific regarding the green economy: the paragraphs dealing with the green economy do not contain the terms decide or we will at all, but are rather dominated by unambitious terminology like affirm (4 times), recognize (6 times), acknowledge (5 times), encourage (4 times) or invite (5 times).

Already the first paragraph (§56) dealing with the issue steers the term in the direction of being an unspecific and weak concept by referring to the different conditions and possibilities available to each country, quite similar to the Rio-Declaration's principle 7 (Common But Differentiated Responsibility). It is also mentioned that the green economy should be a part of sustainable development and not a replacement for it. This is consistent with EMT which views ecological modernization as necessary condition for sustainable development. Further references to EMT can also be found in Paragraphs 67 (leadership by individual countries) and 72 (importance of technology and innovation).

The constant reference to sustainable development has also been attributed to governments not being able to agree on a common vision of a green economy and thus relying on SD as a base of reference (Haas 2012: 97). The connection of the green economy to SD is also weakened as the consideration of SD is constrained to national circumstances: "We recognize the importance of the evaluation of the range of social, environmental and economic factors and encourage, where national circumstances and conditions allow, their integration into decision-making" (UN 2012: §63; italics added).

Furthermore, the green economy is framed merely as a set of options rather than rules: "...we consider green economy in the context of sustainable development and poverty eradication as one of the important tools available for achieving sustainable development and that it could provide options for policymaking but should not be a rigid set of rules" (Ibid.: §56). The specification of green economy policies is being left to each country: "...we recognize that each country can choose an appropriate approach in accordance with national sustainable development plans, strategies and priorities" (Ibid.: §59).

Even the goals that a green economy should pursue are only spelled out in a very general way: "We emphasize that it should contribute to eradicating poverty as well as sustained economic growth, enhancing social inclusion, improving human welfare and creating opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems" (Ibid.: §56). Even though these goals are without a

⁸⁸ Chapter III ("Green Economy in the context of sustainable development and poverty eradication") of "The Future We Want" consists of the paragraphs 56-74 and deals with the green economy.

doubt laudable, they are still highly open to interpretation (e.g. how should poverty and social inclusion be operationalized? How is human welfare being measured? When does an ecosystem's functioning qualify as 'healthy?'). From a holistic perspective on the term ecosystem, it could also be criticized that throughout the whole document it is being used in its plural version⁸⁹. An integrated, holistic approach that is based on the premise of one global ecosystem and multiple local, regional and also large scale ecosystems that are embedded in it, would certainly be more appropriate towards solving global environmental problems. It would however increase the complexity to be solved by political responses.

The subsequent paragraph (57) specifies the legal surrounding in accordance to which a green economy should be developed: the Rio-Principles, Agenda 21, the Johannesburg Plan of Action and the Millennium Development Goals (MDGs). These references can be attributed to – as I have mentioned above – the lack of a common vision of a green economy (Ibid.: §57). Nevertheless, these multiple points of reference bear the danger of creating windows of opportunity for forum shopping regarding unsustainable practices: just to give one example, the cultivation of crops resistant to pesticides or herbicides could be legitimized with contributing to MDG 1.c (halve the proportion of people who suffer from hunger), while at the same time the intensive use of poisons would negatively impact biodiversity.

On the other hand, the unambitious reference to some of the more concrete international agreements has to be criticized as well, as these would have opened up possibilities – together with a generally more ambitious language – to provide linkages to central elements of global environmental governance. Especially the weak reference regarding the three Rio-Conventions⁹⁰ (UNFCCC), the United Nations Convention on Biological Diversity (UNCBD) and the United Nations Convention on Combating Desertification (UNCCD)⁹¹ has to be criticized. Countries are only called upon to implement their commitments under the conventions, but not to further develop these (Ibid.: §17). Also, they are not called upon to take these conventions into account when designing green economy policies. A lost chance that further weakens an already unambitious document.

So how should the green economy become reality? Basically, two approaches are elaborated on in the document. First, there are green economy policies. I have mentioned already that the specification and implementation of green economy policies is left to the individual countries. There are, however, some general remarks in Paragraph 58 on what green economy policies “should”⁹² do (UN 2012: §58; italics added). Some of these policy goals could be considered rhetorical standards in international agreements (consistency with international law; respect of national sovereignty and circumstances; respect of human rights; strengthening of international cooperation; gender equality; acknowledging special needs of developing countries; enhancement of welfare). Other goals are related to the green economy being based on EMT (promoting economic growth; foster innovation; promoting sustainable patterns of consumption and production; the role of technology gaps). The goal of avoiding “unwarranted conditionalities on official development aid (ODA) and finance” (Ibid.: §58/g) is probably due to developing countries' concerns that green economy policies implemented by developed countries might impose restrictions on developing countries, e.g. by introducing trade barriers like BTAs or impose conditionalities on ODA. It is also stated as a goal that green economy policies should avoid imposing restrictions on international trade which is a clear reference to the international trade regime and a recognition of possible policy conflicts between this regime and national green economy policies. Lastly, a reference

89 The only exceptions are fixed terms that use the singular version, e.g. *ecosystem approach*, *ecosystem services* or *ecosystem conservation*.

90 Even though UNCCD was signed in 1994, it still derived out of the Rio-process and thus these three conventions are commonly referenced as the *Rio-Conventions*.

91 See Rechkemmer 2004 for an extensive analysis of UNCCD; also see Bauer et al. 2009 for a comparison of the three conventions' secretariats.

92 The use of a subjunctive in this context fits well with the generally unambitious approach pursued in “The Future We Want”.

is made to the welfare of indigenous people which could also be considered standard rhetoric of international treaties if it would not be for the further remark that green economy policies should "...avoid endangering [indigenous people's] cultural heritage, practices and traditional knowledge, preserving and respecting non-market approaches that contribute to the eradication of poverty" (Ibid.: §58/j). The explicit acknowledging of non-market approaches (even if it is only limited to special circumstances) is interesting, as it is somewhat contrary to the dominance of market based approaches since UNCED in 1992.

It should be highlighted however that all the policy goals listed in paragraph 58 are formulated in the subjunctive. It does not say what green economy policies will or have to do, but merely what they "should" (Ibid.: §58) do. This certainly does open up opportunities for progressive governments and civil-society organizations to use these formulations in order to further push sustainable processes and increase legitimacy pressure on governments and economic actors engaging in unsustainable practices (Germanwatch 2012: 9). However, it also opens up opportunities for the latter actors to disguise an adherence to the status-quo behind outwardly green practices – or greenwashing, to use the more popular expression (Ibid.).

This leads us to the second approach that is outlined in order to make the green economy become reality: the involvement of stakeholders and especially business actors. It has already been mentioned earlier that UNEP's green economy report does highlight the importance of mobilizing private funding in order to finance the transition towards a green economy (UNEP 2011: 35). The document thus explicitly calls for the establishment of partnerships (including PPPs) to "mobilize public funding complemented by the private sector" (UN 2012: §71). Furthermore, business and industry actors are invited (Ibid.: §69) to contribute to sustainable development by including green economy strategies into their sustainability strategies. There is also a distinction regarding the types of economic actors that are seen as valuable contributors towards the transition to a green economy: as cooperatives and microenterprises are only seen as contributing to social inclusion and poverty relief in developing countries (Ibid.: §70), they are by this rhetorical twist indirectly excluded from the list of relevant actors, as poverty relief and social inclusion are also among the core goals of green economy (Ibid.: §58).

Phasing out subsidies on fossil fuels is a key issue for the transformation towards a green economy (UNEP 2011: 30-31). Direct and indirect subsidies by governments create perverse incentives that prevent the transition towards sustainable patterns of production and consumption. This is not only an issue for developed countries with their energy intensive lifestyles, but also concerns developed countries that often hand subsidies directly to the consumers (Runnells 2011: 7). The issue has been addressed at G-20 summits since 2009 and subsequently received increasing attention by other international organizations like the International Energy Agency (IEA), the Organization of Petrol Exporting Countries (OPEC), the OECD and the World Bank, but has lost its initial momentum since then (Ibid.: 8). UNCSD would have been an opportunity to regain momentum, but it failed in achieving this, as the outcome document merely invites countries to "consider rationalizing inefficient fossil fuel subsidies (...) and phasing out harmful subsidies" (UN 2012: §225).

"The Future We Want" is lacking any timetables or guidelines (or initiation of processes that would formulate these) that would establish a base of reference for a green economy. The insufficiency of the gross domestic product (GDP) as the sole indicator for welfare is being recognized (Ibid.: §38), but the mandate to formulate an alternative set of indicators is being given to the UN Statistical Commission without further specification to draw on work that has already been done in this field (e.g. the French government's Commission on the Measurement of Economic Performance and Social Progress, the Human Development Index

or the OECD Better Life Index). As there is no precise definition regarding what constitutes a green economy specifically (not to mention the constant reference to the other oxymoron, sustainable development), business actors do have ample opportunities to declare many of their practices as being in line with a green economy and/or sustainable development.

It seems as if the green economy as it is outlined in "The Future We Want" is strongly endangered of being utilized for a greenwash economy rather than a green economy. On the one hand, participation of stakeholders is being highlighted as highly important to the successful transition. But on the other hand, it seems to be limited to certain stakeholders, as paragraph 71 limits the interests of local and indigenous communities as only to be taken into account "when appropriate" (Ibid.: §71). A slap in the face of local and indigenous activists.

In sum, UNCSO produced a document that initiated a process of normative standard setting regarding a green economy. The norms established are very general and open to interpretation and it thus only creates a weak green economy regime. It does nevertheless bear the characteristics of a regime, as there are principles (the dominating modes of production and consumption are unsustainable), norms (the global economy needs to be reorganized in order to put on the path to sustainability), rules (guidelines for green economy policies are specified) and decision-making structures (formulation of green economy policies is to be achieved at the national level and public and private actors should pursue the path to a green economy collectively with support from the UN system, donors and international organizations, who should coordinate and provide information "upon request" (Ibid.: §66)). If this green economy regime is to be effective at all, much will depend on individual countries taking leadership and delivering examples of successful transitions.

5. Synergies and Conflicts of climate and green economy governance

As a part of the international agenda to implement sustainable development, the green economy should also support the efforts to tackle climate change. This was certainly kept in mind by UNEP prior to UNCSD, as a green economy was framed as being “low carbon” (UNEP 2011: 2; Steiner 2011: 12). Drawing on the typology of institutional interactions developed by Gehring and Oberthür (2009) that has been described in chapter 2.6, synergies can be observed at all four levels (cognitive, interaction, behavioral, impact-level).

As the problems addressed by both regimes are connected quite closely, cognitive interaction is likely to produce synergies. More specifically, the green economy establishes a policy model on which economic transitions are to be based. Unfortunately, “The Future We Want” does not make any references to a green economy being low-carbon, but merely contributing to “...our ability to manage natural resources sustainably and with lower negative environmental impacts, increase resource efficiency and reduce waste” (UN 2012: §60). Synergies through cognitive interaction will thus depend on public and private actors’ will to include decreasing GHG-levels in their green economy and sustainability strategies.

The coordinating role of the UN system and other relevant international organizations set forth in paragraph 66 also bears the potential of synergistic cognitive interaction. The strengthening and upgrading of UNEP that was decided at UNCSD (UN 2012: §88) could play a crucial role here as UNEP was always envisioned to be a coordinator for international environmental politics, but ultimately lacked the resources to fulfill this role to the fullest extent. During the preparation of UNCSD scientists have proposed the creation of an International Green Economy Organization to evaluate policies pursued at the national level of major economies (Charnovitz 2012). As UNCSD failed to specify which part of the UN system or which international organizations should fulfill the role of a coordinator, time will tell whether one organization will take the lead or whether multiple organizations will try to establish themselves as coordinators and thus potentially create confusion rather than coordination.

Interaction through commitment could also produce synergies between the two regimes. Specific national reduction targets for GHG reduction could induce technological innovations in lead markets and vice versa. Successful transformations towards more sustainable patterns of production and consumption could serve as both, examples and incentives for other countries to follow. An example could be the successful transformation of the German energy sector (“Energiewende”) as it was envisioned by the German government (Bundesregierung 2012). Germany as one of the world’s major industries could inspire other governments with an ambitious pursuit of the transition of the energy sector. Another example would be a further development of the world trade regime in order to the trade in less carbon-intensive products and technologies, which would then contribute to both: effective climate governance and support the technology-based approach envisioned by ecological modernization.

Behavioral interaction could also create synergies between the two regimes. An example could be the implementation of green economy policies in the USA. Synergies through behavioral interaction are likely if there is a difference of membership between two regimes. As the USA are not a member of the Kyoto-Protocol, green economy policies could contribute to the reduction of GHGs in the USA and thus increase the success of the UN legal regime on climate change.

Lastly, synergies could also be created through interaction at the impact-level. The successful implementation of green economy policies and the corresponding changes in production and consumption patterns would also impact the success of the climate regime complex, as GHGs would be reduced. Vice versa, the supply of the Green Climate Fund with significant amounts of funding could contribute to achieving progress towards transitioning to (low-carbon) green economies in developing countries.

It seems plausible to assume that even the framework for a green economy (as vague as it is) contained in "The Future We Want", was designed and negotiated in order to create synergies with the climate regime complex, or at least the UN's legal regime on climate change. However, due to the unspecific nature of the green economy regime, an interesting question is: where are possible points of friction between the two regimes? It should be highlighted though that the disruptive effects described below are not path-dependencies. My aim is to elaborate on possible disruptions. Careful policy design and responsible behavior could help avoiding these.

According to the framework developed by Gehring and Oberthür (2009), interaction through commitment between two regimes only produces synergies, so I will leave this case out in this analysis.

Cognitive interaction between two regimes can produce disruptive results if key areas of governance and membership overlap, but the objectives are differing, thus creating competition for regulatory authority (Ibid.: 146). As I have argued in chapter 3, the climate regime complex is in a phase of transition. With the Kyoto Protocol expiring in 2020 at the latest and a new agreement for the time after to be negotiated by 2015, the mode of governance is likely to change to a more bottom-up style. The framework for a green economy as it was developed at UNCSD could serve as a base of reference and thus assert some influence on the direction the climate regime complex is taking. The term of sustainable development did this for the Rio-conventions (Brand 2012: 28) and the green economy could have similar impact on climate governance. The danger however is that a reference base that is defined by its adherence to growth and modernization could contribute to the new legal regime being less ambitious. The old top-down-style of the Kyoto Protocol imposed fixed reduction targets that had to be achieved. This imposed restrictions on the economic growth rates that a country (at least those covered by Annex B) could be able to achieve. As climate governance is steering towards a more bottom-up style of governance and growth is now being a central part of the international agenda for sustainability, the green economy bears the potential to limit the ambition of future climate governance.

Behavioral interaction between the two regimes is another area that is prone to producing disruptive effects. These effects are likely to occur when there are conflicting or competing obligations and an overlap of governance areas (Gehring / Oberthür 2009: 147). Again the problem is the unambitious language in "The Future We Want". Whereas the climate regime complex contains specifications (in the UN's legal regime) regarding the areas (i.e. GHGs and sectors) to be covered, the green economy as outlined at UNCSD is quite unspecific regarding where exactly a transition should take place. This puts pressure on national governments that need to formulate their respective political frameworks in a way that makes it unlikely to declare actions as contributing to a green economy, while at the same time GHG emissions are increased or not lowered. If a country would for example decide to green its public transportation sector by using biofuels, or by establishing a mandatory quota of biofuels in relation to the total amount of fuels, this could create problems: first, it could be inefficient, as the price of a ton of carbon avoided with biofuels could amount to up to 600\$/ton, and second, biofuels are often net contributors to climate change, if the refineries are powered with electricity from coal power plants (Runnells 2011: 7). Also, biofuel production increases

competition for agricultural land and increases pressure on forests, as deforestation is often connected either directly to biofuel production or indirectly through new agricultural land being needed for food production as the old areas are in use for biofuel production (Searchinger et al. 2008). Deforestation is also a main contributor to anthropogenic GHG emissions (IPCC 2007: 36).

Lastly, disruptions between the climate regime complex and the green economy regime can also occur through impact-level interaction. This happens when the ultimate governance target of one institution influences the ultimate governance target of another institution (Gehring / Oberthür 2009: 147). A potential source for conflicts between the two regimes is the overarching goal of poverty eradication that is given for the green economy. Whereas the central normative of the climate regime complex is the reduction of GHG emissions and ultimately the impediment of anthropogenic climate change, the green economy regime aims for development that is based on growth. As it is unlikely that clean technologies will be available to all countries immediately (and are not even available at all in some sectors), countries (and especially developing countries) are likely to implement carbon intensive patterns of development. As investments follow a certain path dependency due to the required time for amortization, the green economy might in fact fix a carbon-intensive path of development. International donors could counter this problem by applying conditionalities for low-carbon projects on the issuing of funding. This is nonetheless problematic due to two reasons: first, "unwarranted conditionalities on official development assistance (ODA) and finance" have been ruled out (UN 2012: §58/g). The question of which conditionalities are warranted and which are not is quite frankly open to interpretation. Second, even if conditionalities were to be applied, public and international funding could only account for parts of the funding necessary to support the transition to a green economy. The bulk would have to come from private investors and companies. As their behavior could only be regulated at the domestic level, their activities in developing countries would have to be regulated by these countries. An event that seems unlikely, considering that poverty eradication is developing countries' first priority and they therefore have an incentive to attract foreign direct investment.

The green economy framework developed at UNCSD will certainly influence the climate regime complex. Synergistic as well as disruptive interactions between the two can occur at multiple levels of institutional interaction. It has to be repeated though that the interactions elaborated on above are possibilities for interaction, not path-dependent interactions. Much will depend on national governance (e.g. green economy and sustainability strategies), commitments and activities of non-state actors as well as the course of the climate change regime complex and especially the UN legal regime after 2015. Ambitious approaches by all actors involved could certainly help to achieve global environmental governance that is capable and well-equipped to deal with the problems of the world's environment. Clubs like the G-20, the Major Emitters Forum or the Asian Pacific Partnership contain some of the world's major emitters and could thus play an important role in promoting both, ambitious climate governance as well as the implementation of sound green economy policies and thus contribute to sustainable development and poverty alleviation.

On the other hand, there is the danger that the unambitious terminology of the recent UNCSD's final outcome document and possibly the future legal regime on climate change will undermine ambitious and effective governance. A necessary condition for this would be that industrialized countries were taking the lead in transitioning to truly sustainable patterns of production and consumption. Or as Branislav Gosovic puts it:

“While the ‘green economy’ offers useful solutions and approaches which need to be pursued in the quest for sustainable development, unless it is placed in an integrated context it is likely to result in new forms of inequalities and problems between the advanced and developing countries. And it should not be reduced to or subjected to such incentives as greening corporate image, profit, the development and export of new technologies, the creation of new jobs or the energy independence in a single or a handful of developed countries” (Gosovic 2011: 91)

However, this would imply questioning the dominant lifestyles and requiring cognitive change. Furthermore, most industrialized countries seem preoccupied with the current fiscal and economic crisis. The prospects for effective sustainability governance that tackles climate change and contributes to development and the social on a global scale seem dim. The engagement of non-governmental and sub-national actors could be the crucial leverage: companies implementing sound sustainability strategies, civil-society organizations campaigning for individual engagement and more sustainable lifestyles and local governments voluntarily steering their communities towards carbon-neutrality and inclusiveness.

6. Conclusion

Climate change governance has evolved into an increasingly complex field with multiple actors and institutions. Since the issue of climate change has emerged in the 1950s, it has become one of the central issues of global environmental governance. The complexity of the issue has resulted in a legal regime at the UN-level being developed and subsequently complemented by bilateral and multilateral initiatives and overlaps with other regimes and organizations dealing with related subjects. A complex system of regimes and organizations has evolved that is characterized by different approaches to regulation and governance. Whereas top-down governance in the form of internationally agreed reduction targets dominated during the last two decades, there is now a tendency towards softer bottom-up modes of political steering characterized by voluntary commitments and less ambitious formulations in international treaties. The Kyoto Protocol never covered the majority of GHG emissions and even those countries covered by it have partly failed to achieve their targets or never even ambitiously pursued the goal of reducing their emissions. The top-down approach of global environmental governance as exemplified in the Kyoto Protocol could therefore be called a failure. The development of softer approaches thus seems to be the pragmatic reaction towards this insight.

Soft modes of governance also characterize the green economy as it was framed at UNCSD. The outcome document is highly open to interpretation and contains both: the possibility for committed governments and non-governmental actors to pursue and push for a transition towards a sustainable economy, but also plenty of options for countries and business actors to engage in green-washing while sticking to business-as-usual. Individual countries and companies will have to go ahead and foster innovation and support the transition towards more sustainable modes of production and consumption. Non-governmental organizations could support this transition by campaigning for this transition at various levels: by asserting pressure on corporations, providing knowledge for the formulation of policies or by supporting individuals in their transition towards a more sustainable lifestyle, just to name a

few. As UNCSD has not produced a precise account of a green economy, national governments and ambitious non-governmental actors will have to take the lead in defining what constitutes a truly green economy. The term is already in danger of being an oxymoron, but without efforts to frame it in line with ambitious targets, it will end up being a mere public relations tool. The lack of a common vision for change makes it hard to provide anything that goes beyond criticizing the status-quo.

UNCSD initiated a regime formation process for a green economy regime. Even though principles, norms and rules have been formulated in a very generalized way, decision-making structures remain very much limited to the national level, as no international organization has been tasked with creating a common vision for a green economy and the outcome document makes this prospect seem rather unlikely. It could be argued that "The Future We Want" contains some guidelines for decision-making structures, as stakeholders that should be included are clearly named. Also, green economy is always referenced as 'in the context of sustainable development and poverty alleviation' and this is where one should place the decision-making structures of the green economy regime: at the level of international institutions dealing with these issues, e.g. the United Nations system. Also regime complex theory offers valuable insights, as the analysis of influences the green economy has in regime complexes might be more fruitful than the analysis of a single green economy regime itself.

Due to the unspecific nature of the green economy regime, synergies as well as disruptions with the climate change regime complex could be achieved. Inside the climate regime complex interactions at multiple levels could produce synergies as well as disruptions. Synergies seem likely at the level of cognitive interaction, e.g. if green economy would indeed become an integral part of environmental policy making and thus also assert influence on the formation of the future UN legal regime. Furthermore, interactions through commitment as well as behavioral interaction and interaction at the impact level could produce synergies. Disruptive effects are to be expected at three of these levels, namely cognitive interaction, interaction through commitment and impact-level interaction.

Much will however depend on the national implementation and inclusion of green economy policies. Integrative policies that aim to lessen negative side effects and fully take account of the whole range of issues covered as well as integrate all relevant stakeholders in decision-making processes could create synergies for both regimes. On the other hand, unambitious national policies open the door for corporations to engage in green-washing their activities as well as for countries to provide incentives for forum shopping by creating weak green economy legislation.

I am very skeptical regarding the positive effects of green economy policies. Approaches based on Ecological Modernization Theory have many deficits, ranging from the types of environmental problems that they are actually able to solve, over inadequacies of the methods the theory proposes, up to questions of equality and fairness regarding the chances to participate. The way green economy was formulated at UNCSD is too vague to be a solid base for solving the climate crisis and other global environmental problems like the loss of biodiversity. There also seems to be a potential trade-off between poverty alleviation and global environmental problems. Whereas the latter would require a down-scaling of the global economy in order to reduce the environmental impacts of economic activities, the former would effectively require an up-scaling of many economies in developing countries. If one looks at the long time it took to negotiate the UNCBD's Nagoya Protocol (which regulates access and benefit sharing regarding biodiversity) as an example, it seems unlikely that the industrialized countries of the North and the majority of large national and transnational corporations are willing to engage in the transfer of technology that would be necessary in

order to achieve a worldwide transition towards truly sustainable patterns of production and consumption.

I do not want to be too pessimistic about the power of the individuals that make up society. The Arab Spring has given us impressive examples of the power citizens can assert over the state. But as long as the nation state and its perceived interests are at the forefront of decision-making, even the power of the people is not going to save the environment. As long as individual countries' and companies' interests dominate decision-making and pursue their rational self-interest – as economists like to call it – I doubt that the most pressing environmental problems will be halted. This is not a call for an abolishment of rationality, quite the contrary, but I do think that a Cartesian rational thinking has not only caused, but also prevented the solution of ecological problems. After all it was Descartes' famous 'cogito ergo sum' that placed the separation of man from the environment at the heart of the enlightenment and thus modern societies. An environmental policy-making that relies on pure rationality is doomed to fail, as it neglects humanity as being an integral part of nature. Climate governance bears the potential to address its issue in such a holistic way, as it is concerned with the mutual influence of humanity and its environment. With the current course of the climate regime complex towards bottom-up modes of governance and the green economy being framed in a similar way, it seems doubtful to me though, whether interactions between governance in the two issue-areas will sufficiently solve any of the addressed problems.

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